

AUXIER & ASSOCIATES, INC.

PAP/KAN

**STANDARD LEVEL IV
REPORT OF ANALYSIS**

WORK ORDER #16-06040-OR

July 25, 2016

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

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STANDARD OPERATING PROCEDURE

Sample Receiving

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Effective: 2/2/15
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Eberline Services – Oak Ridge Laboratory
LABORATORY DATA SUPPORT CHECKLIST

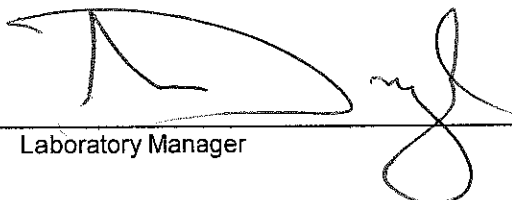
MP-001-3

Eberline Services Work Order # 16-06040

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
		6/23/16	KBS	Data Compilation
		6-22-16	ML	First Technical Data Review
		6/28/16	ML	Second Technical Data Review
		7/20/16		Data Entry/Electronic Deliverable
		7/20/16		Case Narrative
		7/22/16	KBS	Electronic Deliverable Proof
		7/22/16	ML	Samples Analyzed within Holding Time Yes? <input checked="" type="checkbox"/> No? <input type="checkbox"/>
		7/22/16	ML	QA/QC Review
		06/23/16	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:  7/25/16
 Laboratory Manager Date

Copy No. _____

Radiochemistry Services

: 000003

SECTION I
CHAIN OF CUSTODY

16-06040
 REC'D JUN 09 2016

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



Biological Health, Safety and Environmental Services
 A US Environmental, LLC 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
CP-5018.00-02	6/10/16	Soil in Plastic Bag	4 CP-5023.00-02	6/2/16	Soil in Plastic Bag
CP-5018.02-05		Soil in Plastic Bag	5 CP-5023.02-05		Soil in Plastic Bag
CP-5018.05-10		Soil in Plastic Bag	6 CP-5023.05-10		Soil in Plastic Bag
CP-5018.10-15		Soil in Plastic Bag	7 CP-5023.10-15		Soil in Plastic Bag
CP-5019.00-02		Soil in Plastic Bag	8 CP-5024.00-02		Soil in Plastic Bag
CP-5019.02-05		Soil in Plastic Bag	9 CP-5024.02-05		Soil in Plastic Bag
CP-5019.05-10		Soil in Plastic Bag	10 CP-5024.05-10		Soil in Plastic Bag
CP-5019.10-15		Soil in Plastic Bag	11 CP-5024.10-15		Soil in Plastic Bag
CP-5022.00-02	6/2/16	Soil in Plastic Bag	12 CP-5025.00-02		Soil in Plastic Bag
CP-5022.02-05		Soil in Plastic Bag	13 CP-5025.02-05		Soil in Plastic Bag
CP-5022.05-10		Soil in Plastic Bag	14 CP-5025.05-10		Soil in Plastic Bag
CP-5022.10-15		Soil in Plastic Bag	15 CP-5025.10-15		Soil in Plastic Bag

Relinquished By:	Marsha Joseph	Date Shipped:	6/1/16
Method Of Shipment & Tracking #:	80033371786 Fed Ex	Received In Good Condition By:	<i>[Signature]</i>
		Date Received:	6-9-16 @ 6915



EBERLINE
SERVICES
Oak Ridge Laboratory

Internal Chain of Custody

Work Order #

16-06040

Lab Deadline

6/29/2016

Analysis

UIISO - Level 4

Sample Matrix

Soil/Solid

Comments	Sample Fraction	HP 210 / 270 Detector Activity	Storage Location	
REPORT ON DRY WEIGHT BASIS	04	46	G1.4	
	05	36	G1.4	
	06	46	G1.4	
	07	49	G1.4	
	08	50	G1.4	
	09	45	G1.4	
	10	39	G1.4	
	11	53	G1.4	
	12	48	G1.4	
	13	44	G1.4	
	14	43	G1.4	
	15	39	G1.4	

	Location (circle one)					Initials	Date
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	0810 Kerry Scerif	6-14-16
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	0835 Kerry Scerif	6-15-16
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	0935 J. P. Kelly	6-15-16
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	220 J. P. Kelly	6-17-16
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	1280	6/17/16 1420
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	221	6/22/16 0826
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	AG	6/22/16 0826
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	KB	6/22/16 1758
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 #

16-06040

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	G1.4	
	05	36	G1.4	
	06	46	G1.4	
	07	49	G1.4	
	08	50	G1.4	
	09	45	G1.4	
	10	39	G1.4	
	11	53	G1.4	
	12	48	G1.4	
	13	44	G1.4	
	14	43	G1.4	
	15	39	G1.4	

	Location (circle one)					Initials	Date
Received by	<u>Sample Storage</u>	<u>Rough Prep</u>	Prep	Separations	Count Room	0890 Kary Saez	6-14-16
Relinquished by	Sample Storage	<u>Rough Prep</u>	Prep	Separations	Count Room	0935 Kary Saez	6-15-16
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	935 D. Pachelle	6-15-16
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	220 D. Pachelle	6-17-16
Received by	Sample Storage	Rough Prep	Prep	<u>Separations</u>	Count Room	0570 D. Pachelle	6/17/16 1420
Relinquished by	Sample Storage	Rough Prep	Prep	<u>Separations</u>	Count Room	0806 D. Pachelle	6/17/16 0806
Received by	Sample Storage	Rough Prep	Prep	Separations	<u>Count Room</u>	AG	6/21/16 0806
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	<u>Count Room</u>	KB	6/22/16 1827
Received by	<u>Sample Storage</u>	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		

 EBERLINE SERVICES Oak Ridge Laboratory	<h1>Internal Chain of Custody</h1>	Work Order #	16-06040
		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	G1.4	
	05	36	G1.4	
	06	46	G1.4	
	07	49	G1.4	
	08	50	G1.4	
	09	45	G1.4	
	10	39	G1.4	
	11	53	G1.4	
	12	48	G1.4	
	13	44	G1.4	
	14	43	G1.4	
	15	39	G1.4	
	Report Ac228, Bi214, Pb210/214, Pa231, K40 & positives.			
	<i>T1 208, Pb-212</i>			

	Location (circle one)					Initials	Date
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	<i>0810 Kengsai</i>	<i>6-14-16</i>
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	<i>0935 Kengsai</i>	<i>6-15-16</i>
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	<i>0935 C</i>	<i>6-11-16</i>
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	<i>C</i>	<i>6-16-16 0914</i>
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



STANDARD OPERATING PROCEDURE

Sample Receiving

MP-001, Rev. 17
Effective: 2/11/16
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Eberline Services – Oak Ridge Laboratory

SAMPLE RECEIPT CHECKLIST MP-001-2

WORK ORDER # 16-06040

SAMPLE MATRIX/MATRICES:

(CIRCLE ONE OR BOTH)

AQUEOUS NON-AQUEOUS

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

WERE SAMPLES:

Received in good condition?	<input checked="" type="radio"/>	N	
If aqueous, properly preserved	Y	N	<input checked="" type="radio"/>

WERE CHAIN OF CUSTODY SEALS:

Present on outside of package?	<input checked="" type="radio"/>	N
Unbroken on outside of package?	<input checked="" type="radio"/>	N
Present on samples?	<input checked="" type="radio"/>	N
Unbroken on samples?	<input checked="" type="radio"/>	N
Was chain of custody present upon sample receipt?	<input checked="" type="radio"/>	N

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

REMARKS: _____

SIGNATURE: *James E. Bradley* DATE: 6-9-16

SECTION III
CASE NARRATIVE



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

EBS-OR-41003

July 25, 2016

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

CASE NARRATIVE
Work Order # 16-06040-OR

SAMPLE RECEIPT

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

<u>CLIENT ID</u>	<u>LAB ID</u>	<u>CLIENT ID</u>	<u>LAB ID</u>
CP-5023 00-02	16-06040-04	CP-5024 05-10	16-06040-10
CP-5023 02-05	16-06040-05	CP-5024 10-15	16-06040-11
CP-5023 05-10	16-06040-06	CP-5025 00-02	16-06040-12
CP-5023 10-15	16-06040-07	CP-5025 02-05	16-06040-13
CP-5024 00-02	16-06040-08	CP-5025 05-10	16-06040-14
CP-5024 02-05	16-06040-09	CP-5025 10-15	16-06040-15

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-230 duplicate demonstrated an acceptable relative percent difference and normalized difference. 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 and Thorium-232 laboratory control sample demonstrated an acceptable percent recovery.

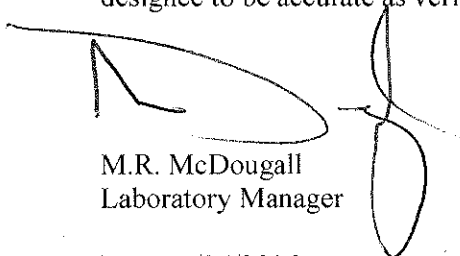
GAMMA SPECTROSCOPY

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

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

CERTIFICATION OF ACCURACY

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



M.R. McDougall
Laboratory Manager

Date: 7/25/2016

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

SECTION IV
ANALYTICAL RESULTS SUMMARY

Eberline Analytical

Final Report of Analysis

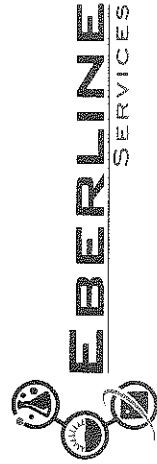
Cecilia Greene
Auxier & Associates, Inc.
9821 Cogdill Road, Suite 1
Knoxville, TN 37932

16-06040
PAP-KAN
ENVIRONMENTAL

Work Order Details:

Lab ID		Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	CV	Report Units
16-06040-01	LCS	KNOWN		06/09/16 00:00	6/9/2016	6/15/2016	16-06040	Cobalt-60	LANL ER-130 Modified	1.37E+02	5.48E+00				pC/g
16-06040-01	LCS	KNOWN		06/09/16 00:00	6/9/2016	6/15/2016	16-06040	Cesium-137	LANL ER-130 Modified	8.69E+01	3.48E+00				pC/g
16-06040-01	LCS	SPIKE		06/09/16 00:00	6/9/2016	6/15/2016	16-06040	Cobalt-60	LANL ER-130 Modified	1.45E+02	1.00E+01	1.25E+01	1.62E+00	1.50E+00	pC/g
16-06040-01	LCS	SPIKE		06/09/16 00:00	6/9/2016	6/15/2016	16-06040	Cesium-137	LANL ER-130 Modified	8.92E+01	8.57E+00	9.72E+00	2.07E+00	1.02E+00	pC/g
16-06040-02	MBL	BLANK		06/09/16 00:00	6/9/2016	6/15/2016	16-06040	Actinium-228	LANL ER-130 Modified	-1.03E-01	1.56E-01	1.56E-01	2.10E-01	8.72E-02	pC/g
16-06040-02	MBL	BLANK		06/09/16 00:00	6/9/2016	6/15/2016	16-06040	Bismuth-214	LANL ER-130 Modified	6.54E-02	8.30E-02	8.31E-02	1.53E-01	6.92E-02	pC/g
16-06040-02	MBL	BLANK		06/09/16 00:00	6/9/2016	6/15/2016	16-06040	Potassium-40	LANL ER-130 Modified	-1.78E-02	2.20E-01	2.20E-01	6.99E-01	2.77E-01	pC/g
16-06040-02	MBL	BLANK		06/09/16 00:00	6/9/2016	6/15/2016	16-06040	Protactinium-231	LANL ER-130 Modified	2.62E-01	1.27E+00	1.27E+00	2.02E+00	9.36E-01	pC/g
16-06040-02	MBL	BLANK		06/09/16 00:00	6/9/2016	6/15/2016	16-06040	Lead-210	LANL ER-130 Modified	1.51E-01	2.93E-01	2.93E-01	4.78E-01	2.27E-01	pC/g
16-06040-02	MBL	BLANK		06/09/16 00:00	6/9/2016	6/15/2016	16-06040	Lead-212	LANL ER-130 Modified	2.23E-02	5.76E-02	5.76E-02	9.56E-02	4.47E-02	pC/g
16-06040-02	MBL	BLANK		06/09/16 00:00	6/9/2016	6/15/2016	16-06040	Lead-214	LANL ER-130 Modified	8.52E-03	8.38E-02	8.38E-02	1.35E-01	6.22E-02	pC/g
16-06040-02	MBL	BLANK		06/09/16 00:00	6/9/2016	6/15/2016	16-06040	Thallium-208	LANL ER-130 Modified	7.84E-02	1.06E-01	1.06E-01	2.03E-01	9.11E-02	pC/g
16-06040-03	DUP	CP-5023 00-02		06/02/16 00:00	6/9/2016	6/15/2016	16-06040	Actinium-228	LANL ER-130 Modified	1.56E+00	3.29E-01	3.38E-01	6.99E-01	3.31E-01	pC/g
16-06040-03	DUP	CP-5023 00-02		06/02/16 00:00	6/9/2016	6/15/2016	16-06040	Bismuth-214	LANL ER-130 Modified	1.03E+00	2.25E-01	2.31E-01	3.35E-01	1.60E-01	pC/g
16-06040-03	DUP	CP-5023 00-02		06/02/16 00:00	6/9/2016	6/15/2016	16-06040	Potassium-40	LANL ER-130 Modified	2.16E+01	2.88E+00	3.09E+00	1.68E+00	7.72E-01	pC/g
16-06040-03	DUP	CP-5023 00-02		06/02/16 00:00	6/9/2016	6/15/2016	16-06040	Protactinium-231	LANL ER-130 Modified	1.12E+00	2.78E+00	2.78E+00	4.22E+00	2.08E+00	pC/g
16-06040-03	DUP	CP-5023 00-02		06/02/16 00:00	6/9/2016	6/15/2016	16-06040	Lead-210	LANL ER-130 Modified	5.42E+00	1.96E+00	1.98E+00	2.89E+00	1.41E+00	pC/g
16-06040-03	DUP	CP-5023 00-02		06/02/16 00:00	6/9/2016	6/15/2016	16-06040	Lead-212	LANL ER-130 Modified	1.77E+00	2.19E-01	2.37E-01	3.22E-01	1.57E-01	pC/g
16-06040-03	DUP	CP-5023 00-02		06/02/16 00:00	6/9/2016	6/15/2016	16-06040	Lead-214	LANL ER-130 Modified	1.33E+00	2.00E-01	2.11E-01	3.60E-01	1.74E-01	pC/g
16-06040-03	DUP	CP-5023 00-02		06/02/16 00:00	6/9/2016	6/15/2016	16-06040	Thallium-208	LANL ER-130 Modified	1.58E+00	3.40E-01	3.49E-01	6.37E-01	3.07E-01	pC/g
16-06040-04	DO	CP-5023 00-02		06/02/16 00:00	6/9/2016	6/15/2016	16-06040	Actinium-228	LANL ER-130 Modified	1.66E+00	3.58E-01	3.68E-01	7.72E-01	3.68E-01	pC/g
16-06040-04	DO	CP-5023 00-02		06/02/16 00:00	6/9/2016	6/15/2016	16-06040	Bismuth-214	LANL ER-130 Modified	1.14E+00	1.91E-01	2.00E-01	4.62E-01	2.23E-01	pC/g
16-06040-04	DO	CP-5023 00-02		06/02/16 00:00	6/9/2016	6/15/2016	16-06040	Potassium-40	LANL ER-130 Modified	2.36E+01	3.03E+00	3.26E+00	1.46E+00	6.60E-01	pC/g
16-06040-04	DO	CP-5023 00-02		06/02/16 00:00	6/9/2016	6/15/2016	16-06040	Protactinium-231	LANL ER-130 Modified	6.10E-01	2.82E+00	2.82E+00	4.17E+00	2.00E+00	pC/g
16-06040-04	DO	CP-5023 00-02		06/02/16 00:00	6/9/2016	6/15/2016	16-06040	Lead-210	LANL ER-130 Modified	2.14E+00	2.01E+00	2.01E+00	2.75E+00	1.34E+00	pC/g
16-06040-04	DO	CP-5023 00-02		06/02/16 00:00	6/9/2016	6/15/2016	16-06040	Lead-212	LANL ER-130 Modified	1.90E+00	2.26E-01	2.46E-01	3.76E-01	1.85E-01	pC/g
16-06040-04	DO	CP-5023 00-02		06/02/16 00:00	6/9/2016	6/15/2016	16-06040	Lead-214	LANL ER-130 Modified	1.32E+00	2.36E-01	2.46E-01	3.84E-01	1.86E-01	pC/g
16-06040-04	DO	CP-5023 00-02		06/02/16 00:00	6/9/2016	6/15/2016	16-06040	Thallium-208	LANL ER-130 Modified	1.48E+00	3.51E-01	3.59E-01	6.43E-01	3.10E-01	pC/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 CORPORATION

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

Eberline Analytical

Final Report of Analysis

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

Report To:

16-06040

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

Work Order Details:

Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	CV	Report Units
16-06040-05	TRG	CP-5023 02-05	06/02/16 00:00	6/9/2016	6/15/2016	16-06040	Actinium-228	LANL ER-130 Modified	1.60E+00	2.40E-01	2.54E-01	3.45E-01	1.61E-01	pCi/g
16-06040-05	TRG	CP-5023 02-05	06/02/16 00:00	6/9/2016	6/15/2016	16-06040	Bismuth-214	LANL ER-130 Modified	1.22E+00	1.91E-01	2.01E-01	2.42E-01	1.16E-01	pCi/g
16-06040-05	TRG	CP-5023 02-05	06/02/16 00:00	6/9/2016	6/15/2016	16-06040	Potassium-40	LANL ER-130 Modified	2.14E+01	2.54E+00	2.77E+00	1.24E+00	5.76E-01	pCi/g
16-06040-05	TRG	CP-5023 02-05	06/02/16 00:00	6/9/2016	6/15/2016	16-06040	Protactinium-231	LANL ER-130 Modified	1.74E+00	1.61E+00	1.62E+00	2.77E+00	1.32E+00	pCi/g
16-06040-05	TRG	CP-5023 02-05	06/02/16 00:00	6/9/2016	6/15/2016	16-06040	Lead-210	LANL ER-130 Modified	2.57E+00	1.84E+00	1.84E+00	3.01E+00	1.47E+00	pCi/g
16-06040-05	TRG	CP-5023 02-05	06/02/16 00:00	6/9/2016	6/15/2016	16-06040	Lead-212	LANL ER-130 Modified	1.38E+00	1.94E-01	2.06E-01	3.10E-01	1.52E-01	pCi/g
16-06040-05	TRG	CP-5023 02-05	06/02/16 00:00	6/9/2016	6/15/2016	16-06040	Lead-214	LANL ER-130 Modified	1.28E+00	1.63E-01	1.75E-01	2.41E-01	1.16E-01	pCi/g
16-06040-05	TRG	CP-5023 02-05	06/02/16 00:00	6/9/2016	6/15/2016	16-06040	Thallium-208	LANL ER-130 Modified	1.28E+00	1.99E-01	2.09E-01	2.32E-01	1.70E-01	pCi/g
16-06040-06	TRG	CP-5023 05-10	06/02/16 00:00	6/9/2016	6/15/2016	16-06040	Actinium-228	LANL ER-130 Modified	1.79E+00	3.68E-01	3.79E-01	5.28E-01	2.48E-01	pCi/g
16-06040-06	TRG	CP-5023 05-10	06/02/16 00:00	6/9/2016	6/15/2016	16-06040	Bismuth-214	LANL ER-130 Modified	1.21E+00	2.16E-01	2.25E-01	3.14E-01	1.50E-01	pCi/g
16-06040-06	TRG	CP-5023 05-10	06/02/16 00:00	6/9/2016	6/15/2016	16-06040	Potassium-40	LANL ER-130 Modified	2.46E+01	3.09E+00	3.34E+00	1.48E+00	6.78E-01	pCi/g
16-06040-06	TRG	CP-5023 05-10	06/02/16 00:00	6/9/2016	6/15/2016	16-06040	Protactinium-231	LANL ER-130 Modified	-2.16E+00	2.80E+00	2.80E+00	3.25E+00	1.54E+00	pCi/g
16-06040-06	TRG	CP-5023 05-10	06/02/16 00:00	6/9/2016	6/15/2016	16-06040	Lead-210	LANL ER-130 Modified	2.32E+00	1.99E+00	1.99E+00	3.29E+00	1.61E+00	pCi/g
16-06040-06	TRG	CP-5023 05-10	06/02/16 00:00	6/9/2016	6/15/2016	16-06040	Lead-212	LANL ER-130 Modified	1.99E+00	3.14E-01	3.30E-01	2.99E-01	1.46E-01	pCi/g
16-06040-06	TRG	CP-5023 05-10	06/02/16 00:00	6/9/2016	6/15/2016	16-06040	Lead-214	LANL ER-130 Modified	1.35E+00	2.37E-01	2.47E-01	2.71E-01	1.30E-01	pCi/g
16-06040-06	TRG	CP-5023 05-10	06/02/16 00:00	6/9/2016	6/15/2016	16-06040	Thallium-208	LANL ER-130 Modified	1.38E+00	2.21E-01	2.32E-01	1.45E-01	2.41E-01	pCi/g
16-06040-07	TRG	CP-5023 10-15	06/02/16 00:00	6/9/2016	6/15/2016	16-06040	Actinium-228	LANL ER-130 Modified	2.04E+00	3.05E-01	3.22E-01	4.96E-01	2.33E-01	pCi/g
16-06040-07	TRG	CP-5023 10-15	06/02/16 00:00	6/9/2016	6/15/2016	16-06040	Bismuth-214	LANL ER-130 Modified	1.28E+00	2.13E-01	2.23E-01	3.07E-01	1.47E-01	pCi/g
16-06040-07	TRG	CP-5023 10-15	06/02/16 00:00	6/9/2016	6/15/2016	16-06040	Potassium-40	LANL ER-130 Modified	2.89E+01	3.39E+00	3.70E+00	1.55E+00	7.15E-01	pCi/g
16-06040-07	TRG	CP-5023 10-15	06/02/16 00:00	6/9/2016	6/15/2016	16-06040	Protactinium-231	LANL ER-130 Modified	6.64E+01	2.00E+00	2.00E+00	3.31E+00	1.57E+00	pCi/g
16-06040-07	TRG	CP-5023 10-15	06/02/16 00:00	6/9/2016	6/15/2016	16-06040	Lead-210	LANL ER-130 Modified	2.67E+00	2.20E+00	2.20E+00	3.62E+00	1.77E+00	pCi/g
16-06040-07	TRG	CP-5023 10-15	06/02/16 00:00	6/9/2016	6/15/2016	16-06040	Lead-212	LANL ER-130 Modified	1.61E+00	2.39E-01	2.53E-01	3.91E-01	1.92E-01	pCi/g
16-06040-07	TRG	CP-5023 10-15	06/02/16 00:00	6/9/2016	6/15/2016	16-06040	Lead-214	LANL ER-130 Modified	1.63E+00	1.93E-01	2.10E-01	3.52E-01	1.71E-01	pCi/g
16-06040-07	TRG	CP-5023 10-15	06/02/16 00:00	6/9/2016	6/15/2016	16-06040	Thallium-208	LANL ER-130 Modified	1.56E+00	2.66E-01	2.78E-01	3.23E-01	2.37E-01	pCi/g
16-06040-08	TRG	CP-5024 00-02	06/02/16 00:00	6/9/2016	6/15/2016	16-06040	Actinium-228	LANL ER-130 Modified	1.83E+00	3.40E-01	3.53E-01	5.97E-01	2.83E-01	pCi/g
16-06040-08	TRG	CP-5024 00-02	06/02/16 00:00	6/9/2016	6/15/2016	16-06040	Bismuth-214	LANL ER-130 Modified	1.42E+00	2.30E-01	2.42E-01	2.61E-01	1.24E-01	pCi/g
16-06040-08	TRG	CP-5024 00-02	06/02/16 00:00	6/9/2016	6/15/2016	16-06040	Potassium-40	LANL ER-130 Modified	2.15E+01	2.77E+00	2.98E+00	1.33E+00	6.07E-01	pCi/g
16-06040-08	TRG	CP-5024 00-02	06/02/16 00:00	6/9/2016	6/15/2016	16-06040	Protactinium-231	LANL ER-130 Modified	9.20E-02	1.10E+00	1.10E+00	2.89E+00	1.42E+00	pCi/g
16-06040-08	TRG	CP-5024 00-02	06/02/16 00:00	6/9/2016	6/15/2016	16-06040	Lead-210	LANL ER-130 Modified	7.90E-01	1.34E+00	1.34E+00	2.08E+00	1.00E+00	pCi/g
16-06040-08	TRG	CP-5024 00-02	06/02/16 00:00	6/9/2016	6/15/2016	16-06040	Lead-212	LANL ER-130 Modified	1.48E+00	2.70E-01	2.81E-01	3.50E-01	1.72E-01	pCi/g
16-06040-08	TRG	CP-5024 00-02	06/02/16 00:00	6/9/2016	6/15/2016	16-06040	Lead-214	LANL ER-130 Modified	1.56E+00	2.47E-01	2.60E-01	2.78E-01	1.34E-01	pCi/g
16-06040-08	TRG	CP-5024 00-02	06/02/16 00:00	6/9/2016	6/15/2016	16-06040	Thallium-208	LANL ER-130 Modified	1.14E+00	2.26E-01	2.34E-01	2.79E-01	1.99E-01	pCi/g

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



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

Eberline Analytical

Final Report of Analysis

Client ID: CP-5024 02-05
Client: Cecilia Greene
Company: Auxier & Associates, Inc.
Address: 9821 Cogdill Road, Suite 1
City: Knoxville, TN 37932

Report To: 16-06040
Project: PAP-KAN
Analysis Category: ENVIRONMENTAL
Sample Matrix: SO

SDG:
Method:
Result:

Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	CV	Report Units
16-06040-09	TRG	CP-5024 02-05	06/02/16 00:00	6/9/2016	6/15/2016	16-06040	Actinium-228	LANL ER-130 Modified	2.00E+00	6.49E-01	6.87E-01	1.70E+00	8.14E-01	pCi/g
16-06040-09	TRG	CP-5024 02-05	06/02/16 00:00	6/9/2016	6/15/2016	16-06040	Bismuth-214	LANL ER-130 Modified	1.22E+00	3.94E-01	3.99E-01	6.89E-01	3.29E-01	pCi/g
16-06040-09	TRG	CP-5024 02-05	06/02/16 00:00	6/9/2016	6/15/2016	16-06040	Potassium-40	LANL ER-130 Modified	2.79E+01	5.53E+00	5.71E+00	5.29E+00	2.49E+00	pCi/g
16-06040-09	TRG	CP-5024 02-05	06/02/16 00:00	6/9/2016	6/15/2016	16-06040	Protactinium-231	LANL ER-130 Modified	-1.31E-01	3.73E+00	3.73E+00	7.17E+00	3.43E+00	pCi/g
16-06040-09	TRG	CP-5024 02-05	06/02/16 00:00	6/9/2016	6/15/2016	16-06040	Lead-210	LANL ER-130 Modified	7.21E-01	1.34E+00	1.34E+00	2.08E+00	1.02E+00	pCi/g
16-06040-09	TRG	CP-5024 02-05	06/02/16 00:00	6/9/2016	6/15/2016	16-06040	Lead-212	LANL ER-130 Modified	2.31E+00	4.74E-01	4.88E-01	6.08E-01	2.97E-01	pCi/g
16-06040-09	TRG	CP-5024 02-05	06/02/16 00:00	6/9/2016	6/15/2016	16-06040	Lead-214	LANL ER-130 Modified	1.50E+00	4.13E-01	4.20E-01	7.59E-01	3.68E-01	pCi/g
16-06040-09	TRG	CP-5024 02-05	06/02/16 00:00	6/9/2016	6/15/2016	16-06040	Thallium-208	LANL ER-130 Modified	1.88E+00	5.79E-01	5.87E-01	7.75E-01	3.65E-01	pCi/g
16-06040-10	TRG	CP-5024 05-10	06/02/16 00:00	6/9/2016	6/15/2016	16-06040	Actinium-228	LANL ER-130 Modified	2.41E+00	5.39E-01	5.53E-01	9.14E-01	4.34E-01	pCi/g
16-06040-10	TRG	CP-5024 05-10	06/02/16 00:00	6/9/2016	6/15/2016	16-06040	Bismuth-214	LANL ER-130 Modified	1.24E+00	3.15E-01	3.21E-01	4.04E-01	1.92E-01	pCi/g
16-06040-10	TRG	CP-5024 05-10	06/02/16 00:00	6/9/2016	6/15/2016	16-06040	Potassium-40	LANL ER-130 Modified	2.65E+01	3.51E+00	3.76E+00	1.73E+00	7.79E-01	pCi/g
16-06040-10	TRG	CP-5024 05-10	06/02/16 00:00	6/9/2016	6/15/2016	16-06040	Protactinium-231	LANL ER-130 Modified	1.48E+00	1.27E+00	1.27E+00	5.18E+00	2.48E+00	pCi/g
16-06040-10	TRG	CP-5024 05-10	06/02/16 00:00	6/9/2016	6/15/2016	16-06040	Lead-210	LANL ER-130 Modified	3.07E+00	2.52E+00	2.52E+00	4.14E+00	2.02E+00	pCi/g
16-06040-10	TRG	CP-5024 05-10	06/02/16 00:00	6/9/2016	6/15/2016	16-06040	Lead-212	LANL ER-130 Modified	2.46E+00	2.94E-01	3.20E-01	4.38E-01	2.14E-01	pCi/g
16-06040-10	TRG	CP-5024 05-10	06/02/16 00:00	6/9/2016	6/15/2016	16-06040	Lead-214	LANL ER-130 Modified	1.81E+00	2.77E-01	2.92E-01	4.62E-01	2.23E-01	pCi/g
16-06040-10	TRG	CP-5024 05-10	06/02/16 00:00	6/9/2016	6/15/2016	16-06040	Thallium-208	LANL ER-130 Modified	2.13E+00	4.22E-01	4.36E-01	8.04E-01	3.88E-01	pCi/g
16-06040-11	TRG	CP-5024 10-15	06/02/16 00:00	6/9/2016	6/15/2016	16-06040	Actinium-228	LANL ER-130 Modified	2.18E+00	4.21E-01	4.35E-01	7.27E-01	3.44E-01	pCi/g
16-06040-11	TRG	CP-5024 10-15	06/02/16 00:00	6/9/2016	6/15/2016	16-06040	Bismuth-214	LANL ER-130 Modified	1.58E+00	3.17E-01	3.27E-01	5.69E-01	2.76E-01	pCi/g
16-06040-11	TRG	CP-5024 10-15	06/02/16 00:00	6/9/2016	6/15/2016	16-06040	Potassium-40	LANL ER-130 Modified	3.11E+01	3.70E+00	4.03E+00	1.69E+00	7.71E-01	pCi/g
16-06040-11	TRG	CP-5024 10-15	06/02/16 00:00	6/9/2016	6/15/2016	16-06040	Protactinium-231	LANL ER-130 Modified	1.98E+00	2.35E+00	2.35E+00	4.05E+00	1.92E+00	pCi/g
16-06040-11	TRG	CP-5024 10-15	06/02/16 00:00	6/9/2016	6/15/2016	16-06040	Lead-210	LANL ER-130 Modified	3.57E+00	2.45E+00	2.46E+00	3.99E+00	1.94E+00	pCi/g
16-06040-11	TRG	CP-5024 10-15	06/02/16 00:00	6/9/2016	6/15/2016	16-06040	Lead-212	LANL ER-130 Modified	1.90E+00	2.82E-01	2.98E-01	4.85E-01	2.28E-01	pCi/g
16-06040-11	TRG	CP-5024 10-15	06/02/16 00:00	6/9/2016	6/15/2016	16-06040	Lead-214	LANL ER-130 Modified	1.70E+00	2.92E-01	3.04E-01	4.42E-01	2.14E-01	pCi/g
16-06040-11	TRG	CP-5024 10-15	06/02/16 00:00	6/9/2016	6/15/2016	16-06040	Thallium-208	LANL ER-130 Modified	1.66E+00	2.66E-01	2.82E-01	2.14E-01	4.19E-01	pCi/g
16-06040-12	TRG	CP-5025 00-02	06/02/16 00:00	6/9/2016	6/15/2016	16-06040	Actinium-228	LANL ER-130 Modified	1.16E+00	2.08E-01	2.16E-01	3.09E-01	1.45E-01	pCi/g
16-06040-12	TRG	CP-5025 00-02	06/02/16 00:00	6/9/2016	6/15/2016	16-06040	Bismuth-214	LANL ER-130 Modified	8.59E-01	1.51E-01	1.57E-01	2.17E-01	1.04E-01	pCi/g
16-06040-12	TRG	CP-5025 00-02	06/02/16 00:00	6/9/2016	6/15/2016	16-06040	Potassium-40	LANL ER-130 Modified	1.56E+01	1.89E+00	2.05E+00	5.21E-01	2.25E-01	pCi/g
16-06040-12	TRG	CP-5025 00-02	06/02/16 00:00	6/9/2016	6/15/2016	16-06040	Protactinium-231	LANL ER-130 Modified	-2.22E+00	1.82E+00	1.82E+00	2.00E+00	9.50E-01	pCi/g
16-06040-12	TRG	CP-5025 00-02	06/02/16 00:00	6/9/2016	6/15/2016	16-06040	Lead-210	LANL ER-130 Modified	1.14E+00	8.50E-01	8.52E-01	1.36E+00	6.56E-01	pCi/g
16-06040-12	TRG	CP-5025 00-02	06/02/16 00:00	6/9/2016	6/15/2016	16-06040	Lead-212	LANL ER-130 Modified	9.73E-01	1.92E-01	1.98E-01	1.94E-01	9.48E-02	pCi/g
16-06040-12	TRG	CP-5025 00-02	06/02/16 00:00	6/9/2016	6/15/2016	16-06040	Lead-214	LANL ER-130 Modified	1.06E+00	1.66E-01	1.75E-01	1.91E-01	9.24E-02	pCi/g
16-06040-12	TRG	CP-5025 00-02	06/02/16 00:00	6/9/2016	6/15/2016	16-06040	Thallium-208	LANL ER-130 Modified	9.27E-01	1.59E-01	1.66E-01	8.68E-02	1.37E-01	pCi/g

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



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Eberline Analytical

Final Report of Analysis

Cecilia Greene
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9821 Cogdill Road, Suite 1
Knoxville, TN 37932

16-06040
PAP-KAN
ENVIRONMENTAL
SO

Report To:

SDG:

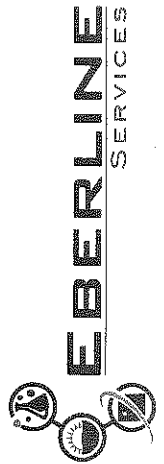
Project:

Analysis Category:

Sample Matrix:

Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	CV	Report Units
16-06040-13	TRG	CP-5025 02-05	06/02/16 00:00	6/9/2016	6/15/2016	16-06040	Actinium-228	LANL ER-130 Modified	1.41E+00	4.55E-01	4.60E-01	1.09E+00	5.16E-01	pCi/g
16-06040-13	TRG	CP-5025 02-05	06/02/16 00:00	6/9/2016	6/15/2016	16-06040	Bismuth-214	LANL ER-130 Modified	1.23E+00	2.87E-01	2.94E-01	1.76E-01	2.09E-01	pCi/g
16-06040-13	TRG	CP-5025 02-05	06/02/16 00:00	6/9/2016	6/15/2016	16-06040	Potassium-40	LANL ER-130 Modified	1.99E+01	3.63E+00	3.77E+00	2.56E+00	1.17E+00	pCi/g
16-06040-13	TRG	CP-5025 02-05	06/02/16 00:00	6/9/2016	6/15/2016	16-06040	Protactinium-231	LANL ER-130 Modified	6.44E-01	2.23E+00	2.23E+00	5.49E+00	2.63E+00	pCi/g
16-06040-13	TRG	CP-5025 02-05	06/02/16 00:00	6/9/2016	6/15/2016	16-06040	Lead-210	LANL ER-130 Modified	1.05E+00	1.17E+00	1.17E+00	1.96E+00	9.92E-01	pCi/g
16-06040-13	TRG	CP-5025 02-05	06/02/16 00:00	6/9/2016	6/15/2016	16-06040	Lead-212	LANL ER-130 Modified	1.88E+00	3.59E-01	3.72E-01	4.40E-01	2.15E-01	pCi/g
16-06040-13	TRG	CP-5025 02-05	06/02/16 00:00	6/9/2016	6/15/2016	16-06040	Lead-214	LANL ER-130 Modified	1.41E+00	3.22E-01	3.30E-01	4.72E-01	2.28E-01	pCi/g
16-06040-13	TRG	CP-5025 02-05	06/02/16 00:00	6/9/2016	6/15/2016	16-06040	Thallium-208	LANL ER-130 Modified	1.38E+00	3.40E-01	3.47E-01	1.04E-01	3.33E-01	pCi/g
16-06040-14	TRG	CP-5025 05-10	06/02/16 00:00	6/9/2016	6/16/2016	16-06040	Actinium-228	LANL ER-130 Modified	2.05E+00	3.24E-01	3.41E-01	5.73E-01	2.70E-01	pCi/g
16-06040-14	TRG	CP-5025 05-10	06/02/16 00:00	6/9/2016	6/16/2016	16-06040	Bismuth-214	LANL ER-130 Modified	1.35E+00	2.22E-01	2.33E-01	2.76E-01	1.31E-01	pCi/g
16-06040-14	TRG	CP-5025 05-10	06/02/16 00:00	6/9/2016	6/16/2016	16-06040	Potassium-40	LANL ER-130 Modified	2.21E+01	2.79E+00	3.02E+00	9.11E-01	3.96E-01	pCi/g
16-06040-14	TRG	CP-5025 05-10	06/02/16 00:00	6/9/2016	6/16/2016	16-06040	Protactinium-231	LANL ER-130 Modified	-3.60E+00	3.19E+00	3.20E+00	3.14E+00	1.49E+00	pCi/g
16-06040-14	TRG	CP-5025 05-10	06/02/16 00:00	6/9/2016	6/16/2016	16-06040	Lead-210	LANL ER-130 Modified	2.90E+00	1.89E+00	1.90E+00	3.08E+00	1.50E+00	pCi/g
16-06040-14	TRG	CP-5025 05-10	06/02/16 00:00	6/9/2016	6/16/2016	16-06040	Lead-212	LANL ER-130 Modified	2.44E+00	3.98E-01	4.15E-01	2.98E-01	1.45E-01	pCi/g
16-06040-14	TRG	CP-5025 05-10	06/02/16 00:00	6/9/2016	6/16/2016	16-06040	Lead-214	LANL ER-130 Modified	1.56E+00	2.41E-01	2.54E-01	2.85E-01	1.37E-01	pCi/g
16-06040-14	TRG	CP-5025 05-10	06/02/16 00:00	6/9/2016	6/16/2016	16-06040	Thallium-208	LANL ER-130 Modified	1.51E+00	2.48E-01	2.58E-01	4.43E-02	1.82E-01	pCi/g
16-06040-15	TRG	CP-5025 10-15	06/02/16 00:00	6/9/2016	6/16/2016	16-06040	Actinium-228	LANL ER-130 Modified	2.72E+00	6.98E-01	7.12E-01	1.43E+00	6.67E-01	pCi/g
16-06040-15	TRG	CP-5025 10-15	06/02/16 00:00	6/9/2016	6/16/2016	16-06040	Bismuth-214	LANL ER-130 Modified	1.71E+00	4.67E-01	4.75E-01	2.96E-01	3.62E-01	pCi/g
16-06040-15	TRG	CP-5025 10-15	06/02/16 00:00	6/9/2016	6/16/2016	16-06040	Potassium-40	LANL ER-130 Modified	3.32E+01	5.95E+00	6.19E+00	3.78E+00	1.70E+00	pCi/g
16-06040-15	TRG	CP-5025 10-15	06/02/16 00:00	6/9/2016	6/16/2016	16-06040	Protactinium-231	LANL ER-130 Modified	6.23E+00	5.07E+00	5.08E+00	8.99E+00	4.30E+00	pCi/g
16-06040-15	TRG	CP-5025 10-15	06/02/16 00:00	6/9/2016	6/16/2016	16-06040	Lead-210	LANL ER-130 Modified	-4.63E-01	5.36E-01	5.36E-01	2.48E+00	1.21E+00	pCi/g
16-06040-15	TRG	CP-5025 10-15	06/02/16 00:00	6/9/2016	6/16/2016	16-06040	Lead-212	LANL ER-130 Modified	3.02E+00	5.54E-01	5.75E-01	6.47E-01	3.16E-01	pCi/g
16-06040-15	TRG	CP-5025 10-15	06/02/16 00:00	6/9/2016	6/16/2016	16-06040	Lead-214	LANL ER-130 Modified	1.58E+00	4.80E-01	4.87E-01	7.94E-01	3.83E-01	pCi/g
16-06040-15	TRG	CP-5025 10-15	06/02/16 00:00	6/9/2016	6/16/2016	16-06040	Thallium-208	LANL ER-130 Modified	2.13E+00	5.09E-01	5.21E-01	7.57E-01	3.51E-01	pCi/g

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



EBERLINE ANALYTICAL CORPORATION

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

00020

Eberline Analytical

Final Report of Analysis

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

16-06040
PAP-KAN
ENVIRONMENTAL
SO

Work Order Details:

Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	CV	Report Units
16-06040-01	LCS	KNOWN	06/09/16 00:00	6/9/2016	6/22/2016	16-06040	Thorium-230	EML Th-01 Modified	5.34E+00	1.44E-01				pCi/g
16-06040-01	LCS	SPIKE	06/09/16 00:00	6/9/2016	6/22/2016	16-06040	Thorium-230	EML Th-01 Modified	6.12E+00	9.15E-01	1.19E+00	5.34E-02	6.80E-02	pCi/g
16-06040-02	MBL	BLANK	06/09/16 00:00	6/9/2016	6/22/2016	16-06040	Thorium-230	EML Th-01 Modified	4.24E-02	4.70E-02	4.73E-02	6.74E-02	6.32E-02	pCi/g
16-06040-03	DUP	CP-5023 00-02	06/02/16 00:00	6/9/2016	6/22/2016	16-06040	Thorium-230	EML Th-01 Modified	1.19E+00	2.48E-01	2.88E-01	4.26E-02	4.15E-02	pCi/g
16-06040-04	DO	CP-5023 00-02	06/02/16 00:00	6/9/2016	6/22/2016	16-06040	Thorium-230	EML Th-01 Modified	1.29E+00	2.87E-01	3.28E-01	6.89E-02	6.13E-02	pCi/g
16-06040-05	TRG	CP-5023 02-05	06/02/16 00:00	6/9/2016	6/22/2016	16-06040	Thorium-230	EML Th-01 Modified	1.42E+00	3.14E-01	3.60E-01	5.36E-02	5.24E-02	pCi/g
16-06040-06	TRG	CP-5023 05-10	06/02/16 00:00	6/9/2016	6/22/2016	16-06040	Thorium-230	EML Th-01 Modified	1.11E+00	2.63E-01	2.97E-01	6.89E-02	6.33E-02	pCi/g
16-06040-07	TRG	CP-5023 10-15	06/02/16 00:00	6/9/2016	6/22/2016	16-06040	Thorium-230	EML Th-01 Modified	1.14E+00	2.28E-01	2.66E-01	3.15E-02	3.40E-02	pCi/g
16-06040-08	TRG	CP-5024 00-02	06/02/16 00:00	6/9/2016	6/22/2016	16-06040	Thorium-230	EML Th-01 Modified	1.00E+00	2.39E-01	2.69E-01	4.52E-02	4.67E-02	pCi/g
16-06040-09	TRG	CP-5024 02-05	06/02/16 00:00	6/9/2016	6/22/2016	16-06040	Thorium-230	EML Th-01 Modified	1.22E+00	2.91E-01	3.28E-01	6.52E-02	6.11E-02	pCi/g
16-06040-10	TRG	CP-5024 05-10	06/02/16 00:00	6/9/2016	6/22/2016	16-06040	Thorium-230	EML Th-01 Modified	1.45E+00	3.12E-01	3.60E-01	4.90E-02	4.78E-02	pCi/g
16-06040-11	TRG	CP-5024 10-15	06/02/16 00:00	6/9/2016	6/22/2016	16-06040	Thorium-230	EML Th-01 Modified	1.15E+00	2.57E-01	2.84E-01	6.36E-02	5.83E-02	pCi/g
16-06040-12	TRG	CP-5025 00-02	06/02/16 00:00	6/9/2016	6/22/2016	16-06040	Thorium-230	EML Th-01 Modified	1.22E+00	2.90E-01	3.27E-01	5.80E-02	5.67E-02	pCi/g
16-06040-13	TRG	CP-5025 02-05	06/02/16 00:00	6/9/2016	6/22/2016	16-06040	Thorium-230	EML Th-01 Modified	1.02E+00	2.38E-01	2.68E-01	6.28E-02	5.77E-02	pCi/g
16-06040-14	TRG	CP-5025 05-10	06/02/16 00:00	6/9/2016	6/22/2016	16-06040	Thorium-230	EML Th-01 Modified	1.19E+00	4.43E-01	4.67E-01	1.70E-01	1.57E-01	pCi/g
16-06040-15	TRG	CP-5025 10-15	06/02/16 00:00	6/9/2016	6/22/2016	16-06040	Thorium-230	EML Th-01 Modified	1.31E+00	3.02E-01	3.43E-01	4.70E-02	5.07E-02	pCi/g
16-06040-01	LCS	KNOWN	06/09/16 00:00	6/9/2016	6/22/2016	16-06040	Thorium-232	EML Th-01 Modified	4.74E+00	1.71E-01				pCi/g
16-06040-01	LCS	SPIKE	06/09/16 00:00	6/9/2016	6/22/2016	16-06040	Thorium-232	EML Th-01 Modified	5.52E+00	8.41E-01	9.72E-01	5.33E-02	3.34E-03	pCi/g
16-06040-02	MBL	BLANK	06/09/16 00:00	6/9/2016	6/22/2016	16-06040	Thorium-232	EML Th-01 Modified	1.42E-03	1.98E-02	1.98E-02	5.66E-02	8.90E-03	pCi/g
16-06040-03	DUP	CP-5023 00-02	06/02/16 00:00	6/9/2016	6/22/2016	16-06040	Thorium-232	EML Th-01 Modified	9.24E-01	2.07E-01	2.22E-01	4.25E-02	7.48E-03	pCi/g
16-06040-04	DO	CP-5023 00-02	06/02/16 00:00	6/9/2016	6/22/2016	16-06040	Thorium-232	EML Th-01 Modified	1.20E+00	2.71E-01	2.91E-01	5.13E-02	9.05E-03	pCi/g
16-06040-05	TRG	CP-5023 02-05	06/02/16 00:00	6/9/2016	6/22/2016	16-06040	Thorium-232	EML Th-01 Modified	1.17E+00	2.71E-01	2.90E-01	3.55E-02	2.22E-03	pCi/g
16-06040-06	TRG	CP-5023 05-10	06/02/16 00:00	6/9/2016	6/22/2016	16-06040	Thorium-232	EML Th-01 Modified	1.26E+00	2.87E-01	3.08E-01	5.96E-02	1.36E-02	pCi/g
16-06040-07	TRG	CP-5023 10-15	06/02/16 00:00	6/9/2016	6/22/2016	16-06040	Thorium-232	EML Th-01 Modified	9.39E-01	1.98E-01	2.13E-01	2.86E-02	2.59E-03	pCi/g
16-06040-08	TRG	CP-5024 00-02	06/02/16 00:00	6/9/2016	6/22/2016	16-06040	Thorium-232	EML Th-01 Modified	8.23E-01	2.07E-01	2.19E-01	3.34E-02	2.09E-03	pCi/g
16-06040-09	TRG	CP-5024 02-05	06/02/16 00:00	6/9/2016	6/22/2016	16-06040	Thorium-232	EML Th-01 Modified	1.14E+00	2.75E-01	2.92E-01	5.48E-02	8.61E-03	pCi/g
16-06040-10	TRG	CP-5024 05-10	06/02/16 00:00	6/9/2016	6/22/2016	16-06040	Thorium-232	EML Th-01 Modified	1.43E+00	3.07E-01	3.32E-01	4.89E-02	8.61E-03	pCi/g
16-06040-11	TRG	CP-5024 10-15	06/02/16 00:00	6/9/2016	6/22/2016	16-06040	Thorium-232	EML Th-01 Modified	1.08E+00	2.45E-01	2.63E-01	4.88E-02	8.60E-03	pCi/g
16-06040-12	TRG	CP-5025 00-02	06/02/16 00:00	6/9/2016	6/22/2016	16-06040	Thorium-232	EML Th-01 Modified	1.15E+00	2.78E-01	2.96E-01	3.84E-02	2.40E-03	pCi/g
16-06040-13	TRG	CP-5025 02-05	06/02/16 00:00	6/9/2016	6/22/2016	16-06040	Thorium-232	EML Th-01 Modified	1.07E+00	2.44E-01	2.61E-01	5.44E-02	1.24E-02	pCi/g
16-06040-14	TRG	CP-5025 05-10	06/02/16 00:00	6/9/2016	6/22/2016	16-06040	Thorium-232	EML Th-01 Modified	1.30E+00	4.72E-01	4.66E-01	1.70E-01	4.40E-02	pCi/g
16-06040-15	TRG	CP-5025 10-15	06/02/16 00:00	6/9/2016	6/22/2016	16-06040	Thorium-232	EML Th-01 Modified	1.26E+00	2.92E-01	3.13E-01	3.79E-02	2.34E-03	pCi/g

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



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EBERLINE ANALYTICAL CORPORATION

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

Eberline Analytical

Final Report of Analysis

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

SDG: 16-06040
Project: PAP-KAN
Analysis Category: ENVIRONMENTAL
Sample Matrix: SO

Report To:

Work Order Details:

Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	CV	Report Units
16-06040-01	LCS	KNOWN	06/09/16 00:00	6/9/2016	6/22/2016	16-06040	Uranium-234	EML U-02 Modified	8.06E+00	2.90E-01	1.03E+00	6.50E-02	1.26E-02	pCi/g
16-06040-01	LCS	SPIKE	06/09/16 00:00	6/9/2016	6/22/2016	16-06040	Uranium-234	EML U-02 Modified	6.56E+00	9.18E-01	9.54E-02	4.59E-02	8.33E-03	pCi/g
16-06040-02	MBL	BLANK	06/09/16 00:00	6/9/2016	6/22/2016	16-06040	Uranium-234	EML U-02 Modified	1.96E-01	9.44E-02	2.35E-01	5.04E-02	1.06E-02	pCi/g
16-06040-03	DUP	CP-5023 00-02	06/02/16 00:00	6/9/2016	6/22/2016	16-06040	Uranium-234	EML U-02 Modified	1.00E+00	2.24E-01	2.35E-01	6.70E-02	1.80E-02	pCi/g
16-06040-04	DO	CP-5023 00-02	06/02/16 00:00	6/9/2016	6/22/2016	16-06040	Uranium-234	EML U-02 Modified	9.65E-01	2.24E-01	2.93E-01	5.36E-02	1.12E-02	pCi/g
16-06040-05	TRG	CP-5023 02-05	06/02/16 00:00	6/9/2016	6/22/2016	16-06040	Uranium-234	EML U-02 Modified	1.34E+00	2.77E-01	2.68E-01	7.85E-02	2.22E-02	pCi/g
16-06040-06	TRG	CP-5023 05-10	06/02/16 00:00	6/9/2016	6/22/2016	16-06040	Uranium-234	EML U-02 Modified	1.03E+00	2.48E-01	1.95E-01	4.82E-02	1.09E-02	pCi/g
16-06040-07	TRG	CP-5023 10-15	06/02/16 00:00	6/9/2016	6/22/2016	16-06040	Uranium-234	EML U-02 Modified	8.15E-01	1.86E-01	3.74E-01	7.46E-02	2.43E-02	pCi/g
16-06040-08	TRG	CP-5024 00-02	06/02/16 00:00	6/9/2016	6/22/2016	16-06040	Uranium-234	EML U-02 Modified	1.91E+00	3.48E-01	2.58E-01	1.06E-01	2.99E-02	pCi/g
16-06040-09	TRG	CP-5024 02-05	06/02/16 00:00	6/9/2016	6/22/2016	16-06040	Uranium-234	EML U-02 Modified	6.26E-01	2.52E-01	3.98E-01	8.71E-02	1.58E-02	pCi/g
16-06040-10	TRG	CP-5024 05-10	06/02/16 00:00	6/9/2016	6/22/2016	16-06040	Uranium-234	EML U-02 Modified	1.31E+00	3.85E-01	2.14E-01	4.48E-02	6.69E-03	pCi/g
16-06040-11	TRG	CP-5024 10-15	06/02/16 00:00	6/9/2016	6/22/2016	16-06040	Uranium-234	EML U-02 Modified	8.86E-01	2.04E-01	5.17E-01	1.17E-01	2.13E-02	pCi/g
16-06040-12	TRG	CP-5025 00-02	06/02/16 00:00	6/9/2016	6/22/2016	16-06040	Uranium-234	EML U-02 Modified	1.60E+00	5.04E-01	2.32E-01	5.59E-02	1.17E-02	pCi/g
16-06040-13	TRG	CP-5025 02-05	06/02/16 00:00	6/9/2016	6/22/2016	16-06040	Uranium-234	EML U-02 Modified	9.22E-01	2.22E-01	2.62E-01	4.63E-02	9.70E-03	pCi/g
16-06040-14	TRG	CP-5025 05-10	06/02/16 00:00	6/9/2016	6/22/2016	16-06040	Uranium-234	EML U-02 Modified	1.24E+00	2.46E-01	2.05E-01	4.62E-02	1.04E-02	pCi/g
16-06040-15	TRG	CP-5025 10-15	06/02/16 00:00	6/9/2016	6/22/2016	16-06040	Uranium-234	EML U-02 Modified	9.11E-01	1.95E-01	2.08E-01	6.99E-02	3.87E-03	pCi/g
16-06040-01	LCS	SPIKE	06/09/16 00:00	6/9/2016	6/22/2016	16-06040	Uranium-235	EML U-02 Modified	6.01E-01	2.08E-01	5.40E-02	6.49E-02	4.98E-03	pCi/g
16-06040-02	MBL	BLANK	06/09/16 00:00	6/9/2016	6/22/2016	16-06040	Uranium-235	EML U-02 Modified	4.96E-02	5.39E-02	7.52E-02	5.67E-02	4.36E-03	pCi/g
16-06040-03	DUP	CP-5023 00-02	06/02/16 00:00	6/9/2016	6/22/2016	16-06040	Uranium-235	EML U-02 Modified	1.14E-01	7.48E-02	7.14E-02	8.27E-02	1.32E-02	pCi/g
16-06040-04	DO	CP-5023 00-02	06/02/16 00:00	6/9/2016	6/22/2016	16-06040	Uranium-235	EML U-02 Modified	8.55E-02	7.11E-02	7.57E-02	5.26E-02	2.90E-03	pCi/g
16-06040-05	TRG	CP-5023 02-05	06/02/16 00:00	6/9/2016	6/22/2016	16-06040	Uranium-235	EML U-02 Modified	1.11E-01	7.53E-02	7.42E-02	8.47E-02	1.31E-03	pCi/g
16-06040-06	TRG	CP-5023 05-10	06/02/16 00:00	6/9/2016	6/22/2016	16-06040	Uranium-235	EML U-02 Modified	8.47E-02	7.39E-02	5.15E-02	5.04E-02	3.89E-03	pCi/g
16-06040-07	TRG	CP-5023 10-15	06/02/16 00:00	6/9/2016	6/22/2016	16-06040	Uranium-235	EML U-02 Modified	5.97E-02	5.13E-02	1.08E-01	5.81E-02	4.49E-03	pCi/g
16-06040-08	TRG	CP-5024 00-02	06/02/16 00:00	6/9/2016	6/22/2016	16-06040	Uranium-235	EML U-02 Modified	2.27E-01	1.07E-01	6.68E-02	1.25E-01	2.00E-02	pCi/g
16-06040-09	TRG	CP-5024 02-05	06/02/16 00:00	6/9/2016	6/22/2016	16-06040	Uranium-235	EML U-02 Modified	3.44E-02	6.68E-02	7.15E-02	1.54E-01	2.39E-03	pCi/g
16-06040-10	TRG	CP-5024 05-10	06/02/16 00:00	6/9/2016	6/22/2016	16-06040	Uranium-235	EML U-02 Modified	2.57E-02	7.15E-02	7.70E-02	5.52E-02	4.25E-03	pCi/g
16-06040-11	TRG	CP-5024 10-15	06/02/16 00:00	6/9/2016	6/22/2016	16-06040	Uranium-235	EML U-02 Modified	1.23E-01	7.65E-02	1.39E-01	1.45E-01	7.99E-03	pCi/g
16-06040-12	TRG	CP-5025 00-02	06/02/16 00:00	6/9/2016	6/22/2016	16-06040	Uranium-235	EML U-02 Modified	1.33E-01	1.38E-01	8.72E-02	5.49E-02	3.03E-03	pCi/g
16-06040-13	TRG	CP-5025 02-05	06/02/16 00:00	6/9/2016	6/22/2016	16-06040	Uranium-235	EML U-02 Modified	1.42E-01	8.72E-02	5.69E-02	6.53E-02	1.01E-03	pCi/g
16-06040-14	TRG	CP-5025 05-10	06/02/16 00:00	6/9/2016	6/22/2016	16-06040	Uranium-235	EML U-02 Modified	6.54E-02	5.69E-02	6.33E-02	6.05E-02	9.39E-04	pCi/g
16-06040-15	TRG	CP-5025 10-15	06/02/16 00:00	6/9/2016	6/22/2016	16-06040	Uranium-235	EML U-02 Modified	9.08E-02	6.33E-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
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EBERLINE ANALYTICAL CORPORATION

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

Eberline Analytical

Final Report of Analysis

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

Report To:

16-06040
PAP-KAN
ENVIRONMENTAL
SO

Work Order Details:

SDG:
 Project:
 Analysis Category:
 Sample Matrix:

Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	CV	Report Units
16-06040-01	LCS	KNOWN	06/09/16 00:00	6/9/2016	6/22/2016	16-06040	Uranium-238	EML U-02 Modified	7.86E+00	2.81E-01	1.10E+00	7.10E-02	1.39E-02	pCi/g
16-06040-01	LCS	SPIKE	06/09/16 00:00	6/9/2016	6/22/2016	16-06040	Uranium-238	EML U-02 Modified	7.10E+00	9.77E-01	1.10E+00	7.10E-02	1.39E-02	pCi/g
16-06040-02	MBL	BLANK	06/09/16 00:00	6/9/2016	6/22/2016	16-06040	Uranium-238	EML U-02 Modified	1.08E-01	6.91E-02	6.96E-02	4.57E-02	7.50E-03	pCi/g
16-06040-03	DUP	CP-5023 00-02	06/02/16 00:00	6/9/2016	6/22/2016	16-06040	Uranium-238	EML U-02 Modified	1.03E+00	2.28E-01	2.40E-01	6.03E-02	1.47E-02	pCi/g
16-06040-04	DO	CP-5023 00-02	06/02/16 00:00	6/9/2016	6/22/2016	16-06040	Uranium-238	EML U-02 Modified	8.47E-01	2.07E-01	2.16E-01	6.94E-02	1.90E-02	pCi/g
16-06040-05	TRG	CP-5023 02-05	06/02/16 00:00	6/9/2016	6/22/2016	16-06040	Uranium-238	EML U-02 Modified	8.24E-01	2.04E-01	2.12E-01	6.10E-02	5.25E-03	pCi/g
16-06040-06	TRG	CP-5023 05-10	06/02/16 00:00	6/9/2016	6/22/2016	16-06040	Uranium-238	EML U-02 Modified	1.04E+00	2.49E-01	2.60E-01	5.45E-02	9.74E-03	pCi/g
16-06040-07	TRG	CP-5023 10-15	06/02/16 00:00	6/9/2016	6/22/2016	16-06040	Uranium-238	EML U-02 Modified	6.67E-01	1.64E-01	1.71E-01	4.80E-02	1.02E-02	pCi/g
16-06040-08	TRG	CP-5024 00-02	06/02/16 00:00	6/9/2016	6/22/2016	16-06040	Uranium-238	EML U-02 Modified	4.90E+00	7.05E-01	7.87E-01	4.10E-02	6.76E-03	pCi/g
16-06040-09	TRG	CP-5024 02-05	06/02/16 00:00	6/9/2016	6/22/2016	16-06040	Uranium-238	EML U-02 Modified	1.24E+00	3.22E-01	3.34E-01	9.65E-02	2.35E-02	pCi/g
16-06040-10	TRG	CP-5024 05-10	06/02/16 00:00	6/9/2016	6/22/2016	16-06040	Uranium-238	EML U-02 Modified	1.28E+00	3.80E-01	3.90E-01	8.67E-02	1.42E-02	pCi/g
16-06040-11	TRG	CP-5024 10-15	06/02/16 00:00	6/9/2016	6/22/2016	16-06040	Uranium-238	EML U-02 Modified	9.63E-01	2.15E-01	2.25E-01	5.26E-02	1.12E-02	pCi/g
16-06040-12	TRG	CP-5025 00-02	06/02/16 00:00	6/9/2016	6/22/2016	16-06040	Uranium-238	EML U-02 Modified	2.10E+00	6.07E-01	6.25E-01	1.68E-01	1.44E-02	pCi/g
16-06040-13	TRG	CP-5025 02-05	06/02/16 00:00	6/9/2016	6/22/2016	16-06040	Uranium-238	EML U-02 Modified	9.41E-01	2.25E-01	2.35E-01	5.07E-02	9.11E-03	pCi/g
16-06040-14	TRG	CP-5025 05-10	06/02/16 00:00	6/9/2016	6/22/2016	16-06040	Uranium-238	EML U-02 Modified	9.48E-01	2.07E-01	2.18E-01	3.67E-02	6.04E-03	pCi/g
16-06040-15	TRG	CP-5025 10-15	06/02/16 00:00	6/9/2016	6/22/2016	16-06040	Uranium-238	EML U-02 Modified	9.60E-01	2.01E-01	2.12E-01	3.40E-02	5.60E-03	pCi/g

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



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

SECTION V
ANALYTICAL STANDARD

U-8

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

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 H ₂ O
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

- Nuclear data were taken from "Table of Radioactive Isotopes", edited by Virginia S. Shirley, 1986.
- 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
ERIC ALLAS
QUALITY CONTROL

29 DECEMBER 1994
Date Signed



ISOTOPE PRODUCTS LABORATORIES
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BURBANK, CALIFORNIA 91504
818-843-7000 FAX 818-843-6168



QUALITY CONTROL PROGRAM
MP-009

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

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

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

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

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

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



Chemical Composition of Standard Solution
Uranyl nitrate in dilute HNO₃

Dilution Instructions: Dilution Solvent Used 1M HNO₃
Dilute to a volume of 1000.00 milliliters

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

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

Expiration Date: July 27, 2016

Verified & Approved By 
QC Approval 

Date: 10/1/2015 0:00
Date: 10/1/15



QUALITY CONTROL PROGRAM
MP-009

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

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

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

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

Radionuclide of Interest ^{234, 235, 238}U Reference Date 1/1/1995 0:00
Parent Solution Conc. 1.7796E+04 dpm/ml

Chemical Composition of Standard Solution
Uranly Nitrate in 1M HNO₃

Dilution Instructions: Dilution Solvent Used 1M HNO₃

SECONDARY VOLUMETRIC DILUTION

Vol. Parent Solution: 4.0000 ml
Total Activity: 7.1182E+04 dpm Final Activity Concentration: 7.1182E+01 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.

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-234 = 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 [Signature]

Date: 10/1/2015 0:00

QC Approval [Signature]

Date: 10/1/15

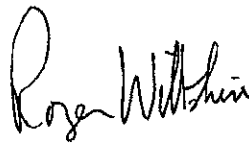
RECORD COPY

Tracer Solution for Environmental Analysis & Disequilibrium Studies

Product Description & Measurement Certificate

<i>Description</i>	Principal radionuclide: uranium 232 (U-232) Daughter Nuclide: Th-228	Product code: UDP10050 Batch Number: 92/232/67
<i>Measurement</i>	Reference date: Radioactive concentration U-232 which is equivalent to Mass of solution Volume of solution Total activity of U-232 which is equivalent to	01 March 2000 6.739E+03 becquerels per gram of solution 1.821E-01 microcuries per gram of solution 5.35E grams 5.035 millilitres 3.61E+04 becquerels 9.76E-01 microcuries
<i>Accuracy</i>	Method of measurement (see reverse of this certificate) Random uncertainty is: $\pm 0.7\%$ Systematic uncertainty: $\pm 0.5\%$ Overall uncertainty in the radioactive concentration quoted above: $\pm 1.7\%$ Overall uncertainty is defined on the reverse of this certificate.	
<i>Radionuclidic Purity</i>	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	
<i>Isotopic Purity</i>	The isotopic composition, expressed as atom per cent at the reference date . Not measured	
<i>Chemical Composition</i>	Calculated weight of U-232, 4.42E-08 grams, as 2M HNO ₃ solution in a flame sealed glass vial. This Tracer solution has been produced 'carrier free'.	
<i>Physical Data</i>	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.	
<i>Remarks</i>	For safety information and notes to ensure correct usage by all persons handling this radioactive Tracer solution please read the instructions accompanying the package. AEA Technology operates a quality management system which has been independently audited and approved to ISO 9001.	

Approved
Signatory



Roger Wiltshire

Project Ref. AE2315

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



QUALITY CONTROL PROGRAM
MP-009

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

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

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

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

Radionuclide ²³²U Reference Date 3/1/2000 0:00
Certified Activity 9.760E-01 μ Ci
Certified Concentration μ Ci per gram

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

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

Dilution Instructions: Dilution Solvent Used 2M HNO₃

Dilute to a volume of 1000.00 milliliters

Certified Total Activity of 0.9760 μ Ci 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 [Signature]

Date: 10/27/2015 0:00

QC Approval [Signature]

Date: 10/28/15



QUALITY CONTROL PROGRAM
MP-009

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

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

Solution Reference # MP-009 Date 10/27/2015 0:00
AEA/Amersham 92/232/67 Solution # U-10a

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

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

Chemical Composition of Standard Solution
²³²U(NO₃)₈ in 2M HNO₃

Dilution Instructions: Dilution Solvent Used 2M HNO₃

SECONDARY VOLUMETRIC DILUTION

Vol. Parent Solution: 10.0000 ml
Total Activity: 2.1670E+04 dpm Final Activity Concentration: 2.1670E+01 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: October 26, 2016

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

Th-8

CERTIFICATE OF CALIBRATION ALPHA STANDARD SOLUTION

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

Description of Solution

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

Radioimpurities: None detected (other than daughters).

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

Radionuclide Concentration: (Th-232) 0.00779 μ Ci/g.

Method of Calibration
Activity calculations are based upon known specific activity and mass.

Uncertainty of Measurement

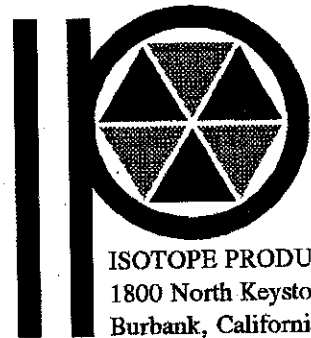
a. Systematic uncertainty in instrument calibration:	$\pm 3.0\%$
b. Random uncertainty in assay:	$\pm 0.0\%$
c. Random uncertainty in weighing(s):	$\pm 2.0\%$
d. Total uncertainty at the 99% confidence level:	$\pm 3.6\%$

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

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

Notes

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



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

Anna U. Khan
QUALITY CONTROL
Nov. 8, 1993
Date Signed



QUALITY CONTROL PROGRAM
MP-009

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

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

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

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

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

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

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

Dilution Instructions: Dilution Solvent Used 1% Nitric Acid

Dilute to a volume of 1000.00 milliliters

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

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

Expiration Date: August 25, 2016

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



QUALITY CONTROL PROGRAM
MP-009

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

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

Solution Reference #		MP-009 IPL 435-104-2	Date	9/29/2015 0:00
Solution #				Th-8b
Principal Radionuclide	Half Life, Years	Half Life, Days		
²²⁸ & 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


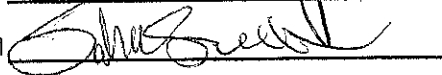
SECONDARY VOLUMETRIC DILUTION

Vol. Parent Solution: 500.0000 ml
Total Activity: 1.0355E+05 dpm
Final Volume: 1000.00 ml
Final Activity Concentration: 1.0355E+02 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 25, 2016

Verified & Approved By 
QC Approval 

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

QA/QC REVIEWED

Date

10/14/91
WT 10/14/91
Initials WT

CERTIFICATE OF CALIBRATION ALPHA STANDARD SOLUTION

Received
OCT 14 1991
TMA/Eberline
Oak Ridge Lab

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

Customer: TMA EBERLINE
P.O.No.: TT4944
Reference Date: November 1 1991 12:00 PST.
Contained Radioactivity: 1.036 μ Ci.

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 μ Ci/gram.

Method of Calibration

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

Uncertainty of Measurement

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

NIST Traceability

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

Notes

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



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[Signature]
QUALITY CONTROL



QUALITY CONTROL PROGRAM
MP-009

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

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

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

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

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

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

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

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

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

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

Expiration Date: February 12, 2016

Recertified By [Signature]
QC Approval [Signature]

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



QUALITY CONTROL PROGRAM
MP-009

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

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

Solution Reference #		MP-009	Date	4/15/2015 0:00
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		
Parent Solution Conc.	2.30E+03 dpm/ml	11/1/1991 0:00		
Chemical Composition of Standard Solution				
²³⁰ Th(NO ₃) ₄ in 0.1N HNO ₃				


Dilution Instructions: Dilution Solvent Used 0.1N HNO₃

SECONDARY VOLUMETRIC DILUTION

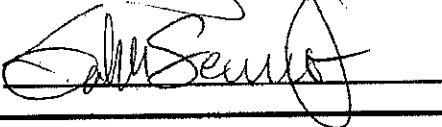
Vol. Parent Solution:	10.0000 ml	Final Activity Concentration:	2.2999E+01 dpm/ml
Total Activity:	2.2999E+04 dpm		
Final Volume:	1000.00 ml		

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

Expiration Date: February 12, 2016

Recertified By 

Date: 4/15/2015 0:00

QC Approval 

Date: 4/15/15



**Isotope Products
Laboratories**

An Eckert & Ziegler Company

24937 Avenue Tibbitts
Valencia, California 91355

Tel 661•309•1010

Fax 661•257•8303

Th-18

CERTIFICATE OF CALIBRATION ALPHA STANDARD SOLUTION

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

Physical Description:

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

Radioimpurities:

None detected (daughters in equilibrium)

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

Method of Calibration:

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

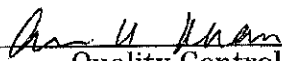
Peak energy used for integration:	193.5 keV
Branching ratio used:	0.0441 gammas per decay

Uncertainty of Measurement:

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

Notes:

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


Quality Control

9-Jan-02
Date Signed

IPL Ref. No.: 867-54

ISO 9001 CERTIFIED

Medical Imaging Laboratory
24937 Avenue Tibbitts Valencia, California 91355

Industrial Gauging Laboratory
1800 North Keystone Street Burbank, California 91504

: 00037



QUALITY CONTROL PROGRAM
MP-009

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

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

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

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

Radionuclide ²²⁸Th Reference Date 1/15/2002 0:00
Certified Activity 1.013E+00 μCi
Certified Concentration 1.0130 $\mu\text{Ci per gram}$

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

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

Dilution Instructions: Dilution Solvent Used 0.1 M HNO₃

Dilute to a volume of 1000.00 milliliters

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

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

Expiration Date: August 24, 2016

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

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



QUALITY CONTROL PROGRAM
MP-009

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

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

Solution Reference #		MP-009	Date	9/29/2015 0:00
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	Parent Solution Conc.	Reference Date		
²²⁹ Th	2.25E+03 dpm/ml	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
------------------------	-----------------------	-----------------------

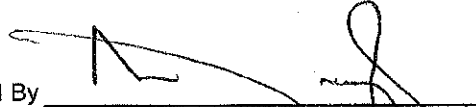
SECONDARY VOLUMETRIC DILUTION

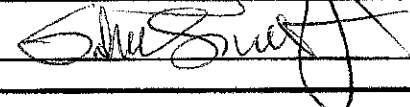
Vol. Parent Solution:	10.0000 ml	Final Activity Concentration:	2.2490E+01 dpm/ml
Total Activity:	2.2490E+04 dpm		
Final Volume:	1000.00 ml		

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: August 24, 2016

Verified & Approved By 

QC Approval 

Date: 9/29/2015 0:00

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* μ ps/gram	This Source μ ps	Uncertainty*, %			Calibration Method*
					u_A	u_B	U	
Am-241	59.5	1.580E+05	---	2.030E+03	0.1	1.8	3.6	4 π LS
Cd-109	88.0	4.614E+02	1.663E+05	2.929E+03	0.5	2.0	4.1	HPGe
Co-57	122.1	2.717E+02	8.913E+04	1.569E+03	0.4	1.7	3.5	HPGe
Ce-139	165.9	1.376E+02	1.241E+08	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: 4 π LS - 4 pi Liquid Scintillation Counting, HPGe - High Purity Germanium Gamma-Ray Spectrometer, IC - Ionization Chamber. Uncertainty: U - Relative expanded uncertainty, k = 2. See NIST Technical Note 1297, "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results."

(Certificate continued on reverse side)



SECTION VI
QUALITY CONTROL SAMPLE RESULTS SUMMARY

Analysis	Activity Units	Aliquot Units	Client Name
UUISO	pCi	g	Auxier & Associates, Inc.
16-06040	1		

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	81.40%	15.71%	100.00%	3.60%	8.06E+00	2.90E-01	6.56E+00	1.03E+00	U-8a	3.20E+01	3.60E+00	5.59E-01
U-238	90.91%	15.51%	100.00%	3.60%	7.80E+00	2.81E-01	7.10E+00	1.10E+00	U-8a	3.10E+01	3.60E+00	5.59E-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

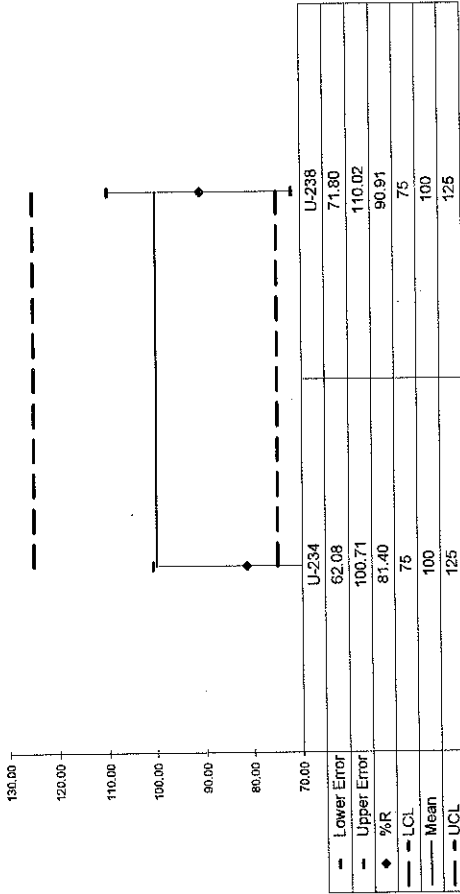
Analyte	Normalized Difference	RPD	Original Result	Original CSU	Replicate Result	Replicate CSU	LCS Relative Bias	LCS % R	MS % R	MS ND	Rep RPD	Rep ND
U-234	0.23	3.98	9.65E-01	2.35E-01	1.00E+00	2.35E-01	0.81	OK			OK	OK
U-238	1.13	19.74	8.47E-01	2.16E-01	1.03E+00	2.40E-01	0.91	OK			OK	OK
U-235	0.55	29.01	8.55E-02	7.14E-02	1.14E-01	7.52E-02		OK			NA	OK

QC Summary

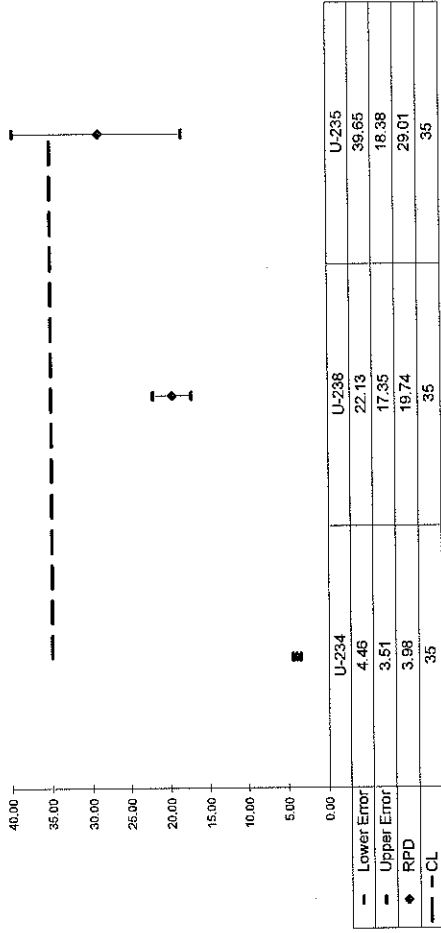
Analyte	Normalized Difference	RPD	Original Result	Original CSU	Replicate Result	Replicate CSU	LCS Relative Bias	LCS % R	MS % R	MS ND	Rep RPD	Rep ND

WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
16-06040	UUISO	1	pCi	g	Auxier & Associates, Inc.

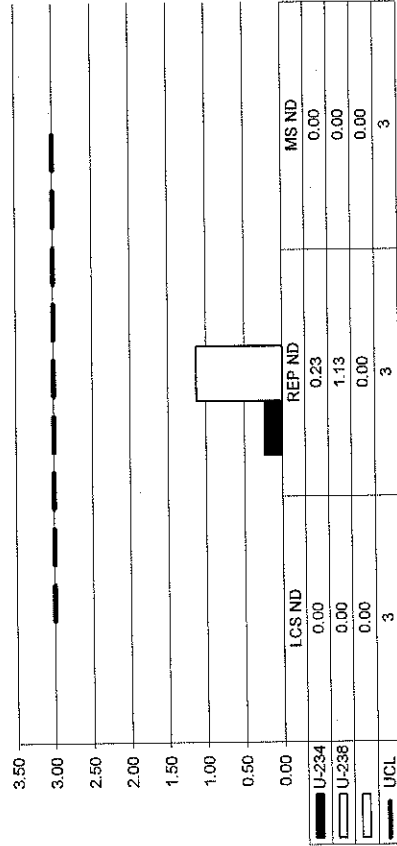
LCS % Recovery



Replicate Sample RPD



Normalized Difference



No Matrix Spike

16-06040	Analysis		Run		Activity Units		Aliquot Units		Client Name	
	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	118.96%	17.87%	100.00%	3.60%	4.74E+00	1.71E-01	5.64E+00	1.01E+00	Th-8b	1.04E+02	3.60E+00	1.02E-01
TH-230	114.56%	19.40%	100.00%	2.70%	5.34E+00	1.44E-01	6.12E+00	1.19E+00	Th-1b	2.35E+01	2.70E+00	5.04E-01
TH-232	116.43%	17.59%	100.00%	3.60%	4.74E+00	1.71E-01	5.52E+00	9.72E-01	Th-8b	1.04E+02	3.60E+00	1.02E-01

Matrix Spike

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

Replicate Sample

Analyte	Normalized Difference	RPD	Original Result	Original CSU	Replicate Result	Replicate CSU	LCS Relative Bias	LCS % R	MS % R	MS ND	Rep RPD	Rep ND
TH-228	0.21	3.65	1.16E+00	2.88E-01	1.20E+00	2.77E-01	1.19	OK			OK	OK
TH-230	0.47	8.45	1.29E+00	3.28E-01	1.18E+00	2.88E-01	1.15	OK			OK	OK
TH-232	1.46	25.80	1.20E+00	2.91E-01	9.24E-01	2.22E-01	1.16	OK			INV	OK

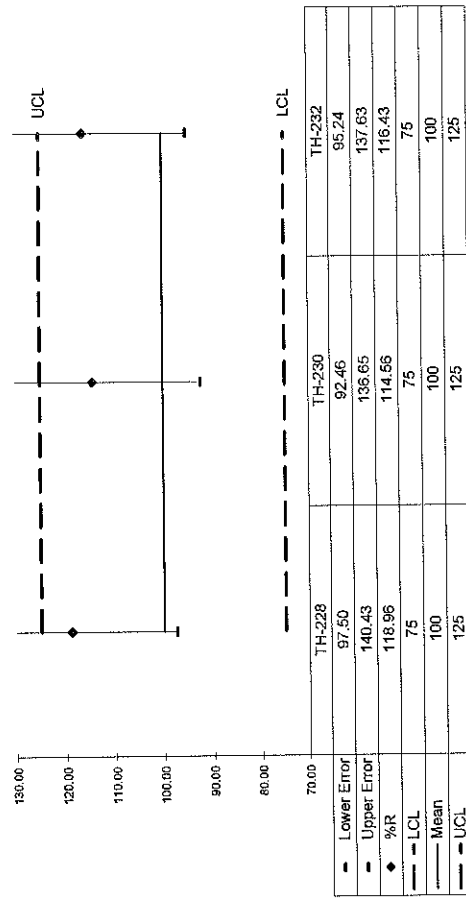
QC Summary

Analyte	Normalized Difference	RPD	Original Result	Original CSU	Replicate Result	Replicate CSU	LCS Relative Bias	LCS % R	MS % R	MS ND	Rep RPD	Rep ND
TH-228	0.21	3.65	1.16E+00	2.88E-01	1.20E+00	2.77E-01	1.19	OK			OK	OK
TH-230	0.47	8.45	1.29E+00	3.28E-01	1.18E+00	2.88E-01	1.15	OK			OK	OK
TH-232	1.46	25.80	1.20E+00	2.91E-01	9.24E-01	2.22E-01	1.16	OK			INV	OK

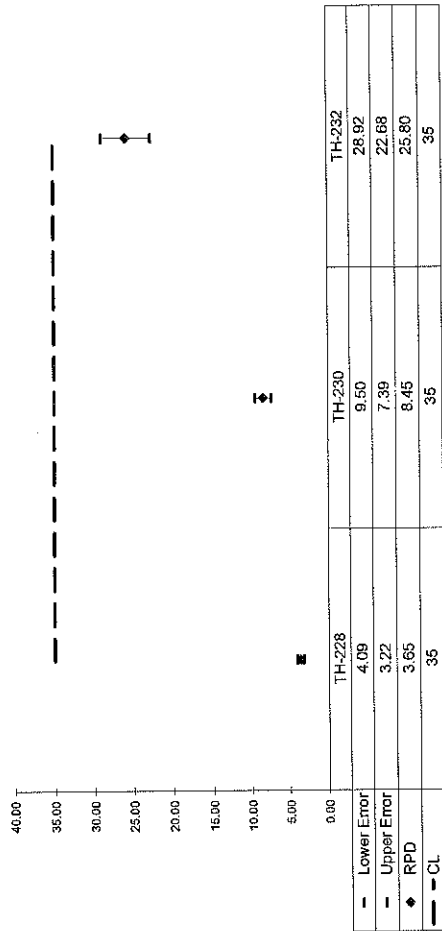


WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
16-06040	THISO	1	pCi	g	Auxier & Associates, Inc.

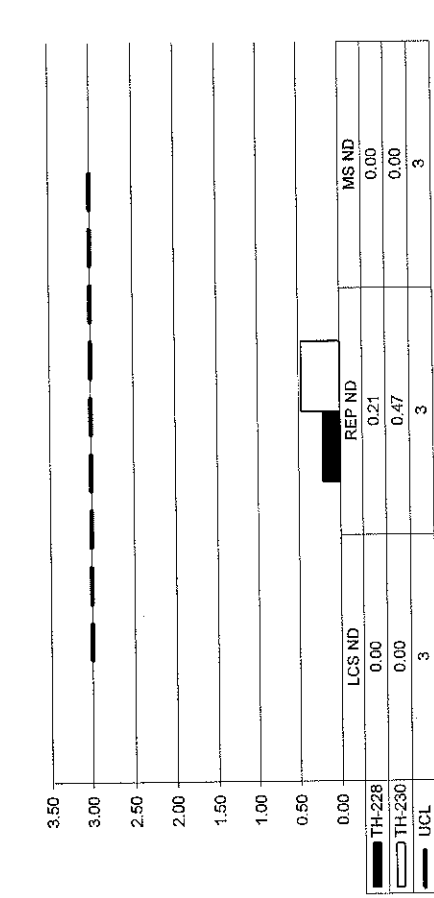
LCS % Recovery



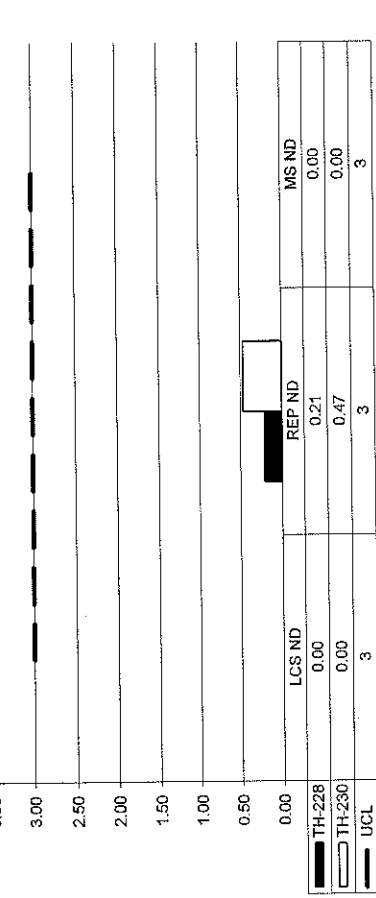
Replicate Sample RPD



Normalized Difference



No Matrix Spike



WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
16-06040	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	105.89%	8.62%	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	102.61%	10.90%	100.00%	4.00%	8.69E+01	3.48E+00	8.92E+01	9.72E+00	GAS-1302	8.69E+01	3.48E+00	7.36E+02

Matrix Spike

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

Replicate Sample

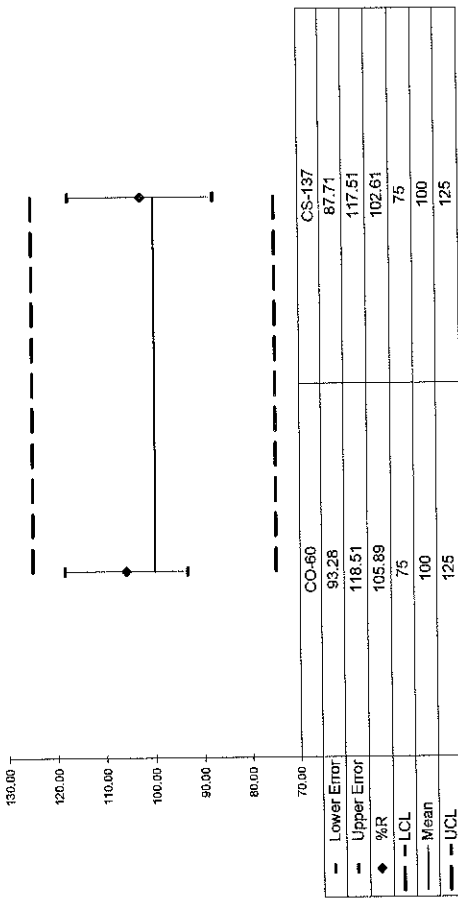
Analyte	Normalized Difference	RPD	Original Result	Original CSU	Replicate Result	Replicate CSU	LCS Relative Bias	LCS % R	MS % R	MS ND	Rep RPD	Rep ND
AC-228	0.41	6.48	1.66E+00	3.68E-01	1.56E+00	3.38E-01	1.06	OK	<CS-137	AC-228>	NA	
BI-214	0.73	10.46	1.14E+00	2.00E-01	1.03E+00	2.31E-01	1.03	OK	<CO-60	BI-214>	NA	OK
K-40	0.93	9.40	2.38E+01	3.26E+00	2.16E+01	3.09E+00				K-40>	NA	OK

QC Summary

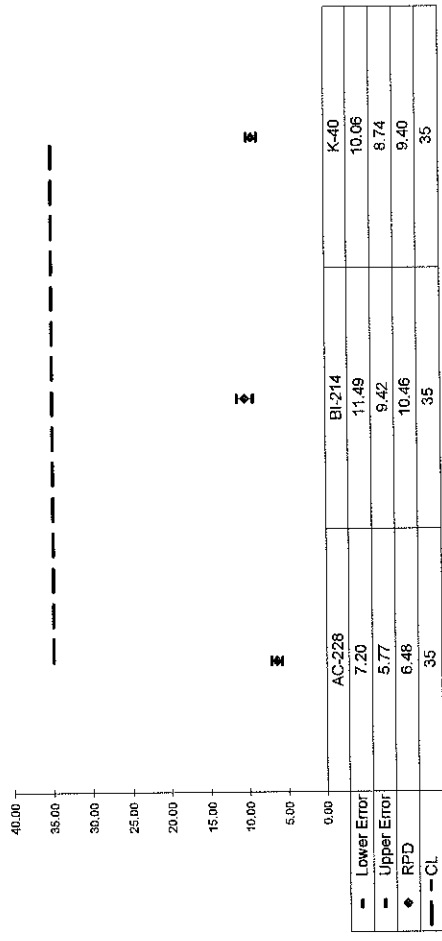
Analyte	Normalized Difference	RPD	Original Result	Original CSU	Replicate Result	Replicate CSU	LCS Relative Bias	LCS % R	MS % R	MS ND	Rep RPD	Rep ND
AC-228	0.41	6.48	1.66E+00	3.68E-01	1.56E+00	3.38E-01	1.06	OK	<CS-137	AC-228>	NA	
BI-214	0.73	10.46	1.14E+00	2.00E-01	1.03E+00	2.31E-01	1.03	OK	<CO-60	BI-214>	NA	OK
K-40	0.93	9.40	2.38E+01	3.26E+00	2.16E+01	3.09E+00				K-40>	NA	OK

WO	Analysis	Run	Activity Units	Allquot Units	Client Name
16-06040	Gamma	1	pCi	g	Auxier & Associates, Inc.

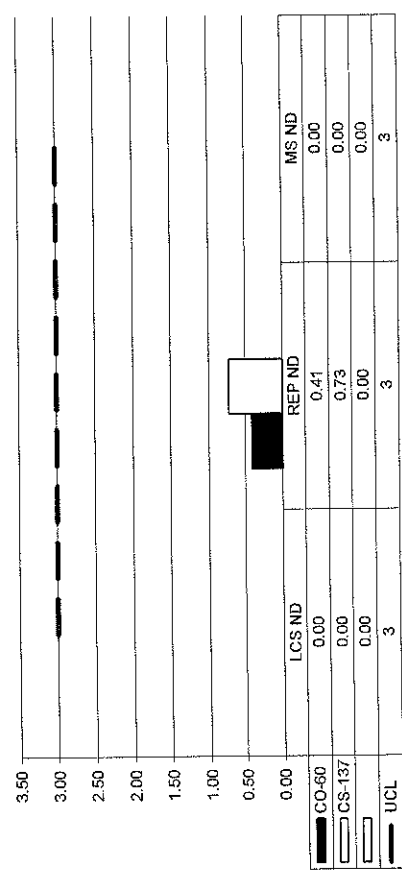
LCS % Recovery



Replicate Sample RPD




Normalized Difference



No Matrix Spike


SECTION VII
LABORATORY TECHNICIAN'S NOTES
& RUN LOGS

ISO U NOTES

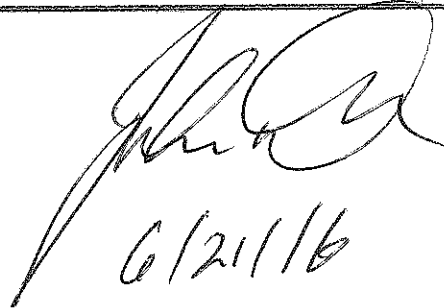
 EBERLINE <small>SERVICES</small> Work Order Analysis Notes	Oak Ridge Laboratory 601 Scarboro Rd. Oak Ridge, TN 37830 Voice: 865.481.0683 www.eberlineservices.com		Internal Work Order	16-06040
			Analysis Code	UUISO
			Run Number	1

#	Date	Dept	User	Notes
1	06/16/16 12:17	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	16-06040
		Analysis Code	UUISO
		Run Number	1


#	Date	Dept	User	Notes
1	06/16/16 12:17	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	06/21/16 18:10	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.


 6/21/16

 EBERLINE <small>SERVICES</small> Work Order Analysis Notes	Oak Ridge Laboratory 601 Scarboro Rd. Oak Ridge, TN 37830 Voice: 865.481.0683 www.eberlineservices.com	Internal Work Order	16-06040
		Analysis Code	UUISO
		Run Number	1

#	Date	Dept	User	Notes
1	06/16/16 12:17	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	06/21/16 18:10	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	06/22/16 05:01	CHEM	TSMITH	Followed steps 12.1.7 to 12.4.5 in AP-005 . (Precipitated and filtered samples for Uranium)

Handwritten signature/initials


 EBERLINE SERVICES		Internal Work Order		
		16-06040		
		Analysis Code		Run
		UUISO		1
Reagent ID	Reagent Name	Reagent Concentration	Analyst ID	Date Recorded
016569P	Hydrofluoric Acid	Reagent Grade	JPACHELLA	6/16/2016
017533P	Nitric Acid	Reagent Grade	JPACHELLA	6/16/2016
017589P	Perchloric Acid	Reagent Grade	JPACHELLA	6/16/2016
017243P	Sulfuric Acid	Reagent Grade	JPACHELLA	6/16/2016
017115P	Anion Exchange Resin	Reagent Grade	JDEMELAS	6/21/2016
017714S	HCl - HF	6.5N - 0.04N	JDEMELAS	6/21/2016
017638D01	Hydrochloric Acid	0.5N	JDEMELAS	6/21/2016
017645S	Hydrochloric Acid	6.5N	JDEMELAS	6/21/2016
017727S	Hydrochloric Acid	8N	JDEMELAS	6/21/2016
017518P	Hydrochloric Acid	Reagent Grade	JDEMELAS	6/21/2016
017732S	HCl - NH4I	8N - 0.1M	JDEMELAS	6/21/2016
017559P	Hydrofluoric Acid	Reagent Grade	TSMITH	6/22/2016
017340S	Neodymium Carrier	1 mg/ml	TSMITH	6/22/2016
017649P	Reagent Alcohol	Reagent Grade	TSMITH	6/22/2016
016606P	Titanous Chloride	Reagent Grade	TSMITH	6/22/2016
017713S	Carbon substrate	Solution	TSMITH	6/22/2016

Alphert #3

113


Date	Sample #	Client	Location	CT#	Media	Spec
6/21/16	1606058A(1-7)	PCC	0828	2hr 50m	ISO-TR	AG
6/21/16	1606031A(1-6)	TN Dept of Health	0832	16 hr	UU	KB
6/21/16	1606029A(8-19)	TN Dept of Health	1132	16 hr	UU	KB
6/21/16	1605079B(1-3,5-7)	Acctest	1649	2hr 50m	Rele	KB
6/22/16	Daily Pulser	Lab	0622	10 min	NA	AG
6/22/16	1606072A(1-4)	Indust. + Env.	0846	2hr 50m	Rele	KB
6/22/16	1606035A(1-4,7)	UWON	0846	2hr 50m	ISO-P4	KB
6/22/16	1606035A(1-4)	UWON	0847	2hr 50m	NP	KB
6/22/16	1606035A(1-4)	UWON	0848	2hr 50m	Am ²⁴¹	KB
6/22/16	Regent 30A(1)	Lab	0848	2hr 50m	PINT	KB
6/22/16	1606035A(1-4)	UWON	0849	2hr 50m	Am ²⁴³	KB
6/22/16	1606035A(1-4)	UWON	0850	2hr 50m	Pi ²⁴²	KB
6/22/16	1606040A(15)	Auxin	1159	2hr 50m	ISO-TR	KB
6/22/16	1606035A(1-4)	UWON	1159	2hr 50m	UU	KB
6/22/16	1606035A(1-4)	UWON	1200	2hr 50m	ISO-TR	KB
6/22/16	1606045A(1-4)	USA	1201	2hr 50m	UU	KB
6/22/16	1606040A(1-13)	Auxin	1202	2hr 50m	UU	KB
6/22/16	1606040A(14-15)	Auxin	1502	2hr 50m	UU	KB

ISO-TH NOTES

 EBERLINE <small>SERVICES</small> Work Order Analysis Notes	Oak Ridge Laboratory 601 Scarboro Rd. Oak Ridge, TN 37830 Voice: 865.481.0683 www.eberlineservices.com		Internal Work Order	16-06040
			Analysis Code	ThISO
			Run Number	1


#	Date	Dept	User	Notes
1	06/16/16 12:17	PREP	JPACHELLA	Samples were aliquoted, spiked and traced. Samples were digested on low heat with HF. Samples were further digested with a mixed acid digestion on medium heat. Samples were submitted to separations.

6-16-16 JPachella

 EBERLINE <small>SERVICES</small> Work Order Analysis Notes	Oak Ridge Laboratory 601 Scarboro Rd. Oak Ridge, TN 37830 Voice: 865.481.0683 www.eberlineservices.com	Internal Work Order	16-06040
		Analysis Code	ThISO
		Run Number	1

#	Date	Dept	User	Notes
1	06/16/16 12:17	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	06/21/16 18:11	CHEM	JDEMELAS	Added concentrated HNO ₃ to sample beakers and heated to dryness; Added 20 ml 8N HNO ₃ to samples and transferred to new, labeled C-Tubes, adding 8N HNO ₃ to bring volume to ~35 ml; Preconditioned resin columns with 50 ml 8N HNO ₃ ; Centrifuged samples as needed, and passed through columns; Rinsed C-Tubes with 20 ml 8N HNO ₃ ; Centrifuged rinsates and loaded onto columns; Rinsed columns with 40 ml 8N HNO ₃ ; 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.

[Handwritten Signature]
 6/21/16

 EBERLINE <small>SERVICES</small> Work Order Analysis Notes	Oak Ridge Laboratory 601 Scarboro Rd. Oak Ridge, TN 37830 Voice: 865.481.0683 www.eberlineservices.com	Internal Work Order	16-06040
		Analysis Code	ThISO
		Run Number	1

#	Date	Dept	User	Notes
1	06/16/16 12:17	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	06/21/16 18:11	CHEM	JDEMELAS	Added concentrated HNO3 to sample beakers and heated to dryness; Added 20 ml 8N HNO3 to samples and transferred to new, labeled C-Tubes, adding 8N HNO3 to bring volume to ~35 ml; Preconditioned resin columns with 50 ml 8N HNO3; Centrifuged samples as needed, and passed through columns; Rinsed C-Tubes with 20 ml 8N HNO3; Centrifuged rinsates and loaded onto columns; Rinsed columns with 40 ml 8N HNO3; Eluted Thorium with 50 ml of 8N HCl into clean, labeled 100-ml beakers; Dried-down samples on hotplate; Dissolved samples in ~10 ml of concentrated HCl; Transferred to new, labeled C-Tubes with deionized water, bringing volume to ~15ml. Set samples aside for later precipitation and filtering.
3	06/22/16 05:03	CHEM	TSMITH	Followed steps 12.2.5 to 12.4.5 in AP-005. (Precipitated and filtered samples for Thorium)

*6-22-16
TSM*



EBERLINE
SERVICES

Reagents Used In an Analysis

Internal Work Order

16-06040

Analysis Code

Run

ThISO

1

Reagent ID	Reagent Name	Reagent Concentration	Analyst ID	Date Recorded
017559P	Hydrofluoric Acid	Reagent Grade	JPACHELLA	6/16/2016
017533P	Nitric Acid	Reagent Grade	JPACHELLA	6/16/2016
017589P	Perchloric Acid	Reagent Grade	JPACHELLA	6/16/2016
017243P	Sulfuric Acid	Reagent Grade	JPACHELLA	6/16/2016
017115P	Anion Exchange Resin	Reagent Grade	JDEMELAS	6/21/2016
017518P	Hydrochloric Acid	Reagent Grade	JDEMELAS	6/21/2016
017721S	Nitric Acid	8N	JDEMELAS	6/21/2016
017534P	Nitric Acid	Reagent Grade	JDEMELAS	6/21/2016
017727S	Hydrochloric Acid	8N	JDEMELAS	6/21/2016
017738S	Nitric Acid	8N	JDEMELAS	6/21/2016
017491S	Cerrium Carrier	0.1mg/ml	TSMITH	6/22/2016
017559P	Hydrofluoric Acid	Reagent Grade	TSMITH	6/22/2016
017649P	Reagent Alcohol	Reagent Grade	TSMITH	6/22/2016
017713S	Carbon substrate	Solution	TSMITH	6/22/2016

Alphabet 1

17

Photo	Snapshot	Client	Location	C Time	Analysis	Feed
6/14/16	1606034A(3)	ucon	0859	2h5-	Th250	-
6/14/16	1606179A(3)	ucon	0859	2h5-	Th250	-
6/14/16	1606034A(1-4)	ucon	0900	2h5-	Th250	-
6/14/16	1606049A(1)	USA	0900	2h5-	ucon	-
6/14/16	1605123A(1-7)	Renova	1349	2hr50-	Raw	KB
6/15	Daily Pulse	LAB	0522	-	NA	-
6/15	1606025A(2-4)	ucon	0810	2h5-	Th250	-
6/15	Daily Pulse	LAB	0520	-	NA	-
6/16	1606057A(1-4)	Parsons	0818	2h5-	Am241	-
6/16	1606057A(1-3)	Parsons	0818	2h5-	Th250	-
6/16/16	1606025A(2-4)	ucon	1127	2hr50-	Th250	KB
6/16/16	1606025A(1-4)	ucon	1128	2hr50-	NA	KB
6/17	Daily Pulse	LAB	0459	-	NA	-
6/17	SEC CALL (3-15)	LAB	1106	2h5-	NA	-
6/17	1606059A(1-7)	USA	0805	2h5-	Th250	-
6/17/16	System Bkgnd	Lab	1619	16.40 hr	-	KB
6/19/16	Daily Pulse	Lab	1027	10min	NA	AG
6/19/16	1606059A(1-7)	USA	1058	2hr50min	Raw 226	AG
6/20/16	Daily Pulse	Lab	0631	10min	NA	AG
6/20/16	1606002A(1-5)	Minion Tech.	0853	2hr50-	UU	KB
6/20/16	1606015A(1-2)	Minion Tech	0853	2hr50-	UU	KB
6/20/16	1606025A(1)	ucon	1254	2hr50-	Am241	KB
6/20/16	1606025A(1)	ucon	1257	2hr50-	Am241	KB
6/21/16	Daily Pulse	Lab	0604	10min	NA	AG
6/21/16	1606029A(1-7)	TN Dept of Health	1057	16 hr	UU	KB
6/22/16	Daily Pulse	Lab	0622	10min	NA	AG
6/22/16	1606040A(1-7)	Auxiliary	0845	2hr50-	F50-Th	KB
6/22/16	1606040A(8-14)	Auxiliary	1158	2hr50-	I50-Th	KB

Alph # 3

Date	Sample #	Client	Trade #	CT #	Media	Spec
6/21/16	1606058A(1-7)	PCC	0828	2hr 50m	ISO-TL	AG
6/21/16	1606031A(1-6)	TN Dept of Health	0832	16 hr	UU	KB
6/21/16	1606029A(8-19)	TN Dept of Health	1132	16 hr	UU	KB
6/21/16	1605079B(1-3,5-7)	Accutest	1649	2hr 50m	Raw	KB
6/22/16	Daily Pulser	Lab	0622	10 min	NA	AG
6/22/16	1606072A(1-4)	Indust. + Env.	0846	2hr 50m	Rele	KB
6/22/16	1606035A(1-4,7)	UWON	0846	2hr 50m	ISO-PL	KB
6/22/16	1606035A(1-4)	UWON	0847	2hr 50m	NO	KB
6/22/16	1606035A(1-4)	UWON	0848	2hr 50m	Am ²⁴¹	KB
6/22/16	Regent 30A(1)	Lab	0848	2hr 50m	PUNT	KB
6/22/16	1606035A(1-4)	UWON	0849	2hr 50m	Am ²⁴³	KB
6/22/16	1606035A(1-4)	UWON	0850	2hr 50m	Pu ²⁴²	KB
6/22/16	1606040A(15)	Auxier	1159	2hr 50m	ISO-TL	KB
6/22/16	1606035A(1-4)	UWON	1159	2hr 50m	UU	KB
6/22/16	1606035A(1-4)	UWON	1200	2hr 50m	ISO-TL	KB
6/22/16	1606045A(1-4)	USA	1201	2hr 50m	UU	KB
6/22/16	1606040A(1-13)	Auxier	1202	2hr 50m	UU	KB
6/22/16	1606040A(14-15)	Auxier	1502	2hr 50m	UU	KB
6/22/16	1606045A(1-4)	USA	1528	2hr 50m	Raw	KB
6/22/16	1606040A(14)	Auxier	1529	2hr 50m	ISO-TL	KB

GAMMA NOTES

DATE	SAMPLE #	Client	Load Time	CT-Time	Analysis	Tech
6/11/15	EA714	USA	0606	15	✓	✓
6/11/15	1606060-07	USA	0734	2L	✓	✓
6/11/15	1606060-11	USA	0836	2L	✓	✓
6/11/15	1606060-15	USA	0939	2L	✓	✓
6/11/15	1606061-03	USA	1112	2L	✓	✓
6/11/15	1606061-04	USA	1213	2L	✓	✓
6/11/15	1606077-07	Texcom	1040	15	Be	✓
6/11/15	1606077-08	Texcom	1015	15	Be	✓
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
6/11/16	EA714	USA	0524	15	✓	✓
6/11/16	Pr:4B	USA	0548	15	✓	✓
6/11/16	EA714	USA	0607	15	✓	✓

DATE	SAMPLE #	Client	LatTime	Cl. Time	Analysis	Tech
6/14/16	1606059-15	USA	1546	1h	✓	KB
6/14/16	1606059-11	USA	1647	1h	✓	KB
6/14/16	1606059-14	USA	1749	1h	✓	KB
6/15	CS 1401	USA	0520	15	✓	✓
6/15	DailyR	USA	0544	15	✓	✓
6/15	1606060-03	USA	0606	2h	✓	✓
6/15	1606060-04	USA	0707	2h	✓	✓
6/15	1606060-09	USA	0812	2h	✓	✓
6/15	1606060-13	USA	0913	2h	✓	✓
6/15	1606060-17	USA	1015	2h	✓	✓
6/15	1606060-06	USA	1116	2h	✓	✓
6/15/16	1606061-07	USA	1217	1h	✓	KB
6/15/16	1606061-11	USA	1318	1h	✓	KB
6/15/16	1606061-13	USA	1419	1h	✓	KB
6/15/16	1606061-16	USA	1519	1h	✓	KB
6/15/16	1606040-06	Auxier	1620	1h	✓	KB
6/15/16	1606040-08	Auxier	1720	1h	✓	KB
6/15/16	1606040-12	Auxier	1821	1h	✓	KB
6/16	CS 1401	USA	0524	15	✓	✓
6/16	DailyR	USA	0548	15	✓	✓
6/16	1606040-14	Auxier	0608	2h	✓	✓

DATE	SAMPLE #	Client	Last Time	CT Time	Analysis	Teck
6/14	1606078-07	Auxier	0820	2h	✓	C
6/14	1606078-10	Auxier	0976	2h	✓	C
6/14	1606078-12	Auxier	1038	2h	✓	C
6/14	1606078-14	Auxier	1139	2h	✓	C
6/14/16	1605123-02	Renova	1211	15 mins	Ba	KB
6/14/16	1605123-06	Renova	1257	15 =	Ba	KB
6/14/16	1605123-10	Renova	1316	15 =	Ba	—
6/14/16	1606059-06	USA	1344	1h	✓	KB
6/14/16	1606059-08	USA	1446	1h	✓	KB
6/14/16	1606059-13	USA	1547	1h	✓	KB
6/14/16	1606059-12	USA	1647	1h	✓	KB
6/14/16	1606059-16	USA	1749	1h	✓	KB
6/15	CSY 1402	LAS	0520	15	✓	Σ
6/15	Daily R	LAS	0544	15	✓	Σ
6/15	1606060-05	USA	0606	2h	✓	—
6/15	1606060-06	USA	0707	2h	✓	—
6/15	1606060-10	USA	0802	2h	✓	—
6/15	1606060-14	USA	0913	2h	✓	—
6/15	1606033-04	Texcom	1015	15	Ba	—
6/15	1606033-05	Texcom	1031	15	Ba	Σ
6/15	1606033-06	Texcom	1046	15	Ba	Σ
6/15	1606062-01	USA	1103	30 =	✓	Σ
6/15	1606062-02	USA	1135	2h	✓	Σ
6/15/16	1606062-03	USA	1236	1h	✓	KB
6/15/16	1606062-04	USA	1337	1h	✓	KB
6/15/16	1606062-14	USA	1438	1h	✓	KB
6/15/16	1606040-03	Auxier	1549	1h	✓	KB
6/15/16	1606040-04	Auxier	1650	1h	✓	KB
6/15/16	1606040-10	Auxier	1800	1h	✓	KB
6/16	CSY 1402	LAS	0724	15	h	Σ
6/16	Daily R	LAS	0548	15	✓	Σ
6/16	CSY 1402	LAS	0608	15	✓	Σ

DATE	SAMPLE #	Client	LoadTime	CT:Time	Analysis	Tech
6/14/16	1606059-01	USA	1344	30mins	Y	ICB
6/14/16	1606059-02	USA	1416	1hr	Y	ICB
6/14/16	1606059-09	USA	1518	1hr	Y	ICB
6/14/16	1606059-10	USA	1618	1hr	Y	ICB
6/14/16	1606060-02	USA	1726	1hr	Y	ICB
6/15	CAW14	USA	0520	15	Y	ICB
6/15	DailyR	USA	0544	15	Y	ICB
6/15	CAW14	USA USA	0606	15	Y	ICB
6/15	1606060-08	USA	0734	2L	Y	ICB
6/15	1606060-12	USA	0836	2L	Y	ICB
6/15	1606060-16	USA	0939	2L	Y	ICB
6/15	1606061-05	USA	1112	2L	Y	ICB
6/15	1606033-08	Teccon	1040	15	Be	ICB
6/15	16 ⁰⁶ 033-10	Teccon	1055	15	Be	ICB
6/15/16	1606061-08	USA	1213	1hr	Y	ICB
6/15/16	1606061-10	USA	1315	1hr	Y	ICB
6/15/16	1606061-01	USA	1416	30mins	Y	ICB
6/15/16	1606061-02	USA	1448	1hr	Y	ICB
6/15/16	1606040-02	Auxur	1549	1hr	Y	ICB
6/15/16	1606040-01	Auxur	1650	30mins	Y	ICB
6/15/16	1606040-09	Auxur	1721	1hr	Y	ICB
6/15/16	1606040-13	Auxur	1821	1hr	Y	ICB
6/16	CAW14	USA	0524	15	Y	ICB
6/16	DailyR	USA	0548	15	Y	ICB
6/16	1606040-15	USA Auxur	0608	2L	Y	ICB

SECTION VIII
ANALYTICAL DATA (ISOTOPIC URANIUM)

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	6.01E-01	2.08E-01	6.99E-02					OK	
02	U-235	MBL	BLANK	pCi/g	4.96E-02	5.39E-02	6.49E-02					OK	OK
03	U-235	DUP	CP-5023 00-02	pCi/g	1.14E-01	7.48E-02	5.67E-02				NA	OK	
04	U-235	DO	CP-5023 00-02	pCi/g	8.55E-02	7.11E-02	8.27E-02					OK	
05	U-235	TRG	CP-5023 02-05	pCi/g	1.11E-01	7.53E-02	5.26E-02					OK	
06	U-235	TRG	CP-5023 05-10	pCi/g	8.47E-02	7.39E-02	8.47E-02					OK	
07	U-235	TRG	CP-5023 10-15	pCi/g	5.97E-02	5.13E-02	5.04E-02					OK	
08	U-235	TRG	CP-5024 00-02	pCi/g	2.27E-01	1.07E-01	5.81E-02					OK	
09	U-235	TRG	CP-5024 02-05	pCi/g	3.44E-02	6.68E-02	1.25E-01					OK	
10	U-235	TRG	CP-5024 05-10	pCi/g	2.57E-02	7.15E-02	1.54E-01					OK	
11	U-235	TRG	CP-5024 10-15	pCi/g	1.23E-01	7.65E-02	5.52E-02					OK	
12	U-235	TRG	CP-5025 00-02	pCi/g	1.33E-01	1.38E-01	1.45E-01					OK	
13	U-235	TRG	CP-5025 02-05	pCi/g	1.42E-01	8.72E-02	5.49E-02					OK	
14	U-235	TRG	CP-5025 05-10	pCi/g	6.54E-02	5.69E-02	6.53E-02					OK	
15	U-235	TRG	CP-5025 10-15	pCi/g	9.08E-02	6.33E-02	6.05E-02					OK	

	Run	1
	Analysis Code	UJISO
Eberline Analytical Work Order	16-06040	
Client	Auxier & Associates, Inc.	

91000

Internal Work Order		Run	Analysis Code		Date		Technician		Technician Initials		Witness Initials						
16-06040		1	UUISO		6/16/2016 10:29		JPACHELLA		[Signature]		[Signature]						
LCS & Matrix Spikes																	
Isotope	Sol #	Activity dpm/g	Solution Date	Approx Addition	LCS Volume Used (g)	MS Volume Used (g)	LCS Volume Used (g)	LCSD Volume Used (g)	MSD Volume Used (g)	LCS Known pCi	MS Added pCi	MSD Added pCi	Error Estimate	Error Estimate	Error Estimate		
U-234	U-8a	32.000	6/16/2016	0.550	0.5589		8.06	0.290		0.00	0.00	0.00	0.000	0.000	0.000		
U-238	U-8a	31.000	6/16/2016	0.550	0.5589		7.80	0.281		0.00	0.00	0.00	0.000	0.000	0.000		
TC-99 MS TC-2a 22043636 7/5/2014 U.1																	
Tracers																	
fraction	Isotope	Sol #	Activity dpm/g	Solution Date	Volume Used (g)	Approx Addition	Tracer									LCS	
01	U-232	U-10a	18.520	6/16/2016	0.6568	0.6500											
02	U-232	U-10a	18.520	6/16/2016	0.6530	0.6500											
03	U-232	U-10a	18.520	6/16/2016	0.6526	0.6500											
04	U-232	U-10a	18.520	6/16/2016	0.6532	0.6500											
05	U-232	U-10a	18.520	6/16/2016	0.6534	0.6500											
06	U-232	U-10a	18.520	6/16/2016	0.6499	0.6500											
07	U-232	U-10a	18.520	6/16/2016	0.6511	0.6500											
08	U-232	U-10a	18.520	6/16/2016	0.6500	0.6500											
09	U-232	U-10a	18.520	6/16/2016	0.6566	0.6500											
10	U-232	U-10a	18.520	6/16/2016	0.6500	0.6500											
11	U-232	U-10a	18.520	6/16/2016	0.6503	0.6500											
12	U-232	U-10a	18.520	6/16/2016	0.6653	0.6500											
13	U-232	U-10a	18.520	6/16/2016	0.6504	0.6500											
14	U-232	U-10a	18.520	6/16/2016	0.6629	0.6500											
15	U-232	U-10a	18.520	6/16/2016	0.6563	0.6500											
													Matrix Spike				

Aliquot Worksheet

Work Order	Run	Analysis Code	Rpt Units	Lab Deadline	Technician
16-06040	1	UIISO	grams	6/29/2016	JPACHELLA

Lab Fraction	Client ID	Sample Type	Muffle Data		Dilution Data			Aliquot Data		MS Aliquot Data		H-3 Solids Only	
			Ratio Post/Pre	Ratio	No of Dilis	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-5023 00-02	DUP						1.5784E+00	1.5784E+00				
04	CP-5023 00-02	DO						1.5108E+00	1.5108E+00				
05	CP-5023 02-05	TRG						1.5228E+00	1.5228E+00				
06	CP-5023 05-10	TRG						1.5344E+00	1.5344E+00				
07	CP-5023 10-15	TRG						1.5148E+00	1.5148E+00				
08	CP-5024 00-02	TRG						1.5643E+00	1.5643E+00				
09	CP-5024 02-05	TRG						1.5660E+00	1.5660E+00				
10	CP-5024 05-10	TRG						1.5427E+00	1.5427E+00				
11	CP-5024 10-15	TRG						1.5221E+00	1.5221E+00				
12	CP-5025 00-02	TRG						1.5178E+00	1.5178E+00				
13	CP-5025 02-05	TRG						1.5090E+00	1.5090E+00				
14	CP-5025 05-10	TRG						1.6049E+00	1.6049E+00				
15	CP-5025 10-15	TRG						1.5497E+00	1.5497E+00				

Comments	
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Technician: *JPachella* Date: *6/16/16*

**Rough Sample Preparation
 Log Book**

Work Order		Date Received in Prep		Date Sealed		Date Returned		Technician	
16-06040		6/14/2016		6/15/2016		6/16/2016		KSALLINGS	

Bico Pulverizer SN: 000302

Eberline Fraction	Auxier & Associates, Inc. Client ID	Tare (g)		Gross (g)		Net (g)		Percent		Gamma		Special Info
		Pan Wt	Dry Wt	Wet Wt.	Dry Wt.	Wet Wt.	Dry Wt.	Liquid	Solid	Dry Wt.	LEPS Wt.	
04	CP-5023 00-02	14.6100	491.7800	581.6600	491.7800	567.0500	477.1700	15.85%	84.15%	0.0000	0.0000	
05	CP-5023 02-05	14.6000	541.0500	638.9100	541.0500	638.9100	526.4500	17.60%	82.40%	0.0000	0.0000	
06	CP-5023 05-10	14.5500	457.6900	560.3300	457.6900	545.7800	443.1400	18.81%	81.19%	0.0000	0.0000	
07	CP-5023 10-15	14.5700	415.7200	530.6800	415.7200	516.1100	401.1500	22.27%	77.73%	0.0000	0.0000	
08	CP-5024 00-02	14.6100	461.7000	540.2500	461.7000	525.6400	447.0900	14.94%	85.06%	0.0000	0.0000	
09	CP-5024 02-05	14.5700	469.5400	563.9600	469.5400	549.3900	454.9700	17.19%	82.81%	0.0000	0.0000	
10	CP-5024 05-10	14.5600	412.4400	506.9900	412.4400	492.4300	397.8800	19.20%	80.80%	0.0000	0.0000	
11	CP-5024 10-15	14.5600	339.2500	436.9300	339.2500	422.3700	324.6900	23.13%	76.87%	0.0000	0.0000	
12	CP-5025 00-02	14.5500	720.3600	844.7800	720.3600	830.2300	705.8100	14.99%	85.01%	0.0000	0.0000	
13	CP-5025 02-05	14.6300	582.5100	700.9000	582.5100	686.2700	567.8800	17.25%	82.75%	0.0000	0.0000	
14	CP-5025 05-10	14.6000	454.1200	556.1100	454.1200	541.5100	439.5200	18.83%	81.17%	0.0000	0.0000	
15	CP-5025 10-15	14.6000	374.1000	479.2300	374.1000	464.6300	359.5000	22.63%	77.37%	0.0000	0.0000	

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

Technician: *Kenny Sells*





KB
6/22/16

Sample Description: SPIKE
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001550
 Batch Identification: 1606040A-UU
 Sample Identification: 01
 Sample Geometry: Shelf 2
 Procedure Description: U iso

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

Sample Size: 1.000E+000 +/- 0.000E+000 gram
 Sample Date/Time: 6/22/2016 7:32:01 AM
 Acquisition Date/Time: 6/22/2016 12:01:22 PM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
 Tracer Quantity: 0.657 mL
 Effective Efficiency: 0.1954 +/- 0.0108
 Counting Efficiency: 0.1705 +/- 0.0030 on 12/11/2015 8:21:02 AM
 Chem. Recovery Factor: 1.1463 +/- 0.0662

Control Certificate Name: NatU_U-8A
 Chem. Recov. of Control: U-238 0.799780 +/- 0.061095
 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	401.32	9.79	0.68	0.00E+000	11.4
U-234	4.723	482.66	8.93	0.34	0.00E+000	8.2
U-235	4.379	35.83	32.83	0.17	0.00E+000	5.9
U-238	4.142	524.49	8.56	0.51	0.00E+000	19.5

T = Tracer Peak used for Effective Efficiency

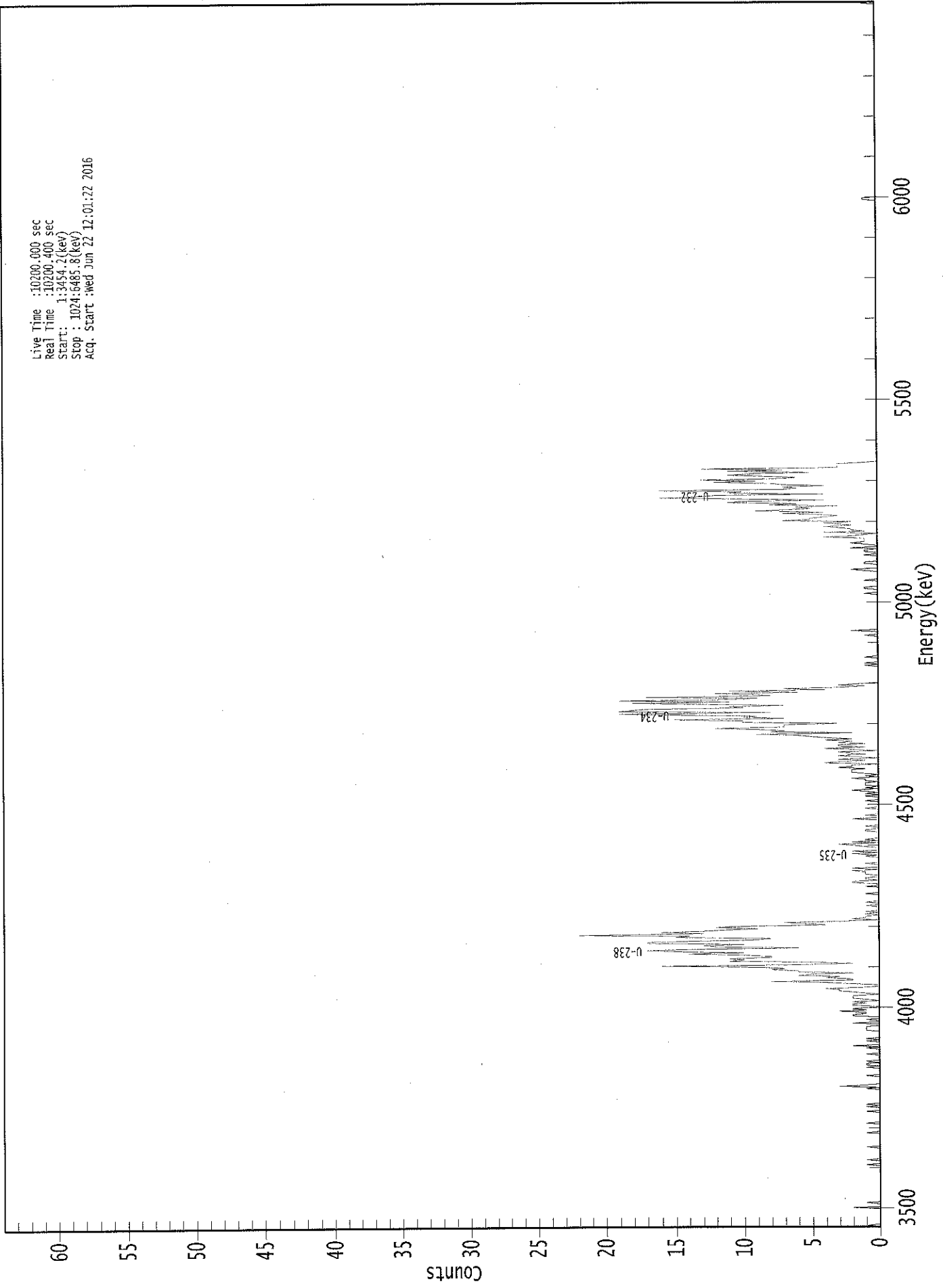
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.990	5302.50*	5.45E+000 +/- 5.88E-001	7.66E-002 +/- 8.26E-003
U-234	0.990	4761.50*	6.56E+000 +/- 9.18E-001	6.50E-002 +/- 7.00E-003
U-235	1.000	4385.50*	6.01E-001 +/- 2.08E-001	6.99E-002 +/- 7.54E-003
U-238	0.987	4184.40*	7.10E+000 +/- 9.77E-001	7.10E-002 +/- 7.65E-003

AG
6/23/16

0000155036.CNF

Live Time : 10200.000 sec
Real Time : 10200.400 sec
Start : 1:34:54.2 (keV)
Stop : 1024:6485.8 (keV)
Acq. Start : Wed Jun 22 12:01:22 2016



ROI Type: 1

ROI Type: 3

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

Sample Title: 01

Elapsed Live time: 10200
 Elapsed Real Time: 10200

Channel	1	2	3	4	5	6	7	8	9
1:	0	1	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0	0
17:	2	0	0	0	1	0	0	0	0
25:	0	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0	0
49:	0	0	0	0	1	0	0	0	0
57:	1	0	0	0	0	0	0	0	0
65:	0	0	0	1	0	0	0	0	0
73:	0	0	0	0	0	0	0	0	1
81:	0	0	0	0	0	0	0	0	1
89:	0	0	0	0	0	0	0	0	0
97:	0	1	0	0	0	1	0	0	1
105:	0	0	0	0	0	0	0	0	0
113:	0	0	0	0	1	0	3	1	1
121:	0	0	0	0	0	0	0	1	1
129:	0	0	0	0	0	0	1	0	0
137:	1	1	0	1	0	0	0	0	0
145:	0	1	0	0	0	0	1	0	0
153:	2	0	0	0	1	0	1	0	0
161:	0	0	0	0	0	1	1	1	1
169:	1	0	0	2	0	0	1	0	0
177:	0	2	2	1	1	3	1	2	2
185:	1	0	2	2	1	2	0	1	1
193:	2	2	2	0	1	2	3	3	3
201:	4	1	0	0	2	4	8	2	2
209:	2	4	3	6	5	2	6	6	6
217:	8	7	9	16	6	2	5	11	11
225:	10	11	8	8	10	14	10	15	15
233:	17	13	6	12	13	10	17	17	17
241:	12	9	8	15	14	22	13	16	16
249:	13	11	9	12	10	4	5	7	7
257:	3	0	2	1	1	0	1	0	0
265:	1	0	0	0	0	1	0	0	0
273:	1	0	0	0	0	0	0	1	1
281:	0	0	0	0	0	1	0	0	0
289:	2	2	0	1	1	0	0	1	1
297:	1	1	2	0	2	0	0	0	0
305:	1	0	0	0	0	0	1	0	0
313:	2	0	2	0	0	0	1	2	2
321:	3	0	2	0	1	0	0	0	0
329:	0	0	0	1	1	0	0	1	1
337:	0	0	0	0	0	2	0	0	0
345:	1	0	0	0	0	0	1	0	0
353:	0	0	0	0	1	0	0	0	0
361:	1	0	1	0	1	2	0	1	1

369: 0 1 1 1 0 1 1 2

Sample Title: 01

Channel	1	2	3	4	5	6	7	8
377:	0	1	0	1	2	2	2	1
385:	3	2	2	0	4	3	1	3
393:	0	2	3	1	2	3	0	2
401:	4	1	3	3	1	3	2	4
409:	2	4	5	6	9	2	8	7
417:	9	12	7	7	7	3	10	10
425:	15	7	10	9	15	19	8	19
433:	18	17	10	11	7	13	18	11
441:	19	11	9	17	8	9	12	6
449:	11	4	7	3	1	3	1	0
457:	0	0	0	0	0	0	0	0
465:	0	0	0	0	0	1	0	1
473:	0	0	0	0	1	0	0	0
481:	0	0	0	0	0	0	0	0
489:	0	0	0	0	0	0	1	0
497:	0	0	2	0	0	0	0	0
505:	0	0	0	0	0	0	0	0
513:	0	0	0	0	0	0	0	0
521:	0	0	0	0	0	0	0	0
529:	0	1	0	0	0	1	1	0
537:	0	0	0	0	1	0	0	0
545:	0	0	0	0	1	2	0	0
553:	0	0	1	1	0	0	0	0
561:	0	1	0	0	1	1	0	2
569:	0	0	1	2	1	1	1	1
577:	4	2	1	0	4	1	2	2
585:	3	4	2	3	4	2	7	5
593:	5	4	3	4	7	4	9	7
601:	5	6	3	8	6	11	10	4
609:	10	16	13	12	4	11	10	16
617:	7	6	7	4	7	8	12	9
625:	13	7	6	9	11	9	5	11
633:	7	13	3	3	3	3	1	0
641:	0	0	0	0	0	0	0	0
649:	0	0	0	0	0	0	0	0
657:	0	0	0	0	0	0	0	0
665:	0	0	0	0	0	0	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 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	1	1	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	1	0	0



108
6/22/16

Sample Description: BLANK
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001550
 Batch Identification: 1606040A-UU
 Sample Identification: 02
 Sample Geometry: Shelf 2
 Procedure Description: U iso

Detector Name: Alpha_048
 Chamber Serial Number: 02030596B
 Detector Serial Number: 83111
 Env. Background: System Bkgd 156909
 Reagent Blank: <not performed>

Sample Size: 1.500E+000 +/- 0.000E+000 gram
 Sample Date/Time: 6/22/2016 7:32:01 AM
 Acquisition Date/Time: 6/22/2016 12:01:23 PM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
 Tracer Quantity: 0.653 mL
 Effective Efficiency: 0.1610 +/- 0.0096
 Counting Efficiency: 0.1756 +/- 0.0031 on 12/11/2015 8:21:00 AM
 Chem. Recovery Factor: 0.9164 +/- 0.0572

Peak Match Tolerance: 0.150 MeV

 PEAK AREA REPORT

Nuclide	Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
U-232	T 5.289	328.64	10.84	1.36	0.00E+000	22.3
U-234	4.702	17.83	46.68	0.17	0.00E+000	3.0
U-235	4.411	3.66	107.87	0.34	0.00E+000	3.0
U-238	4.136	9.83	63.14	0.17	0.00E+000	3.0

T = Tracer Peak used for Effective Efficiency

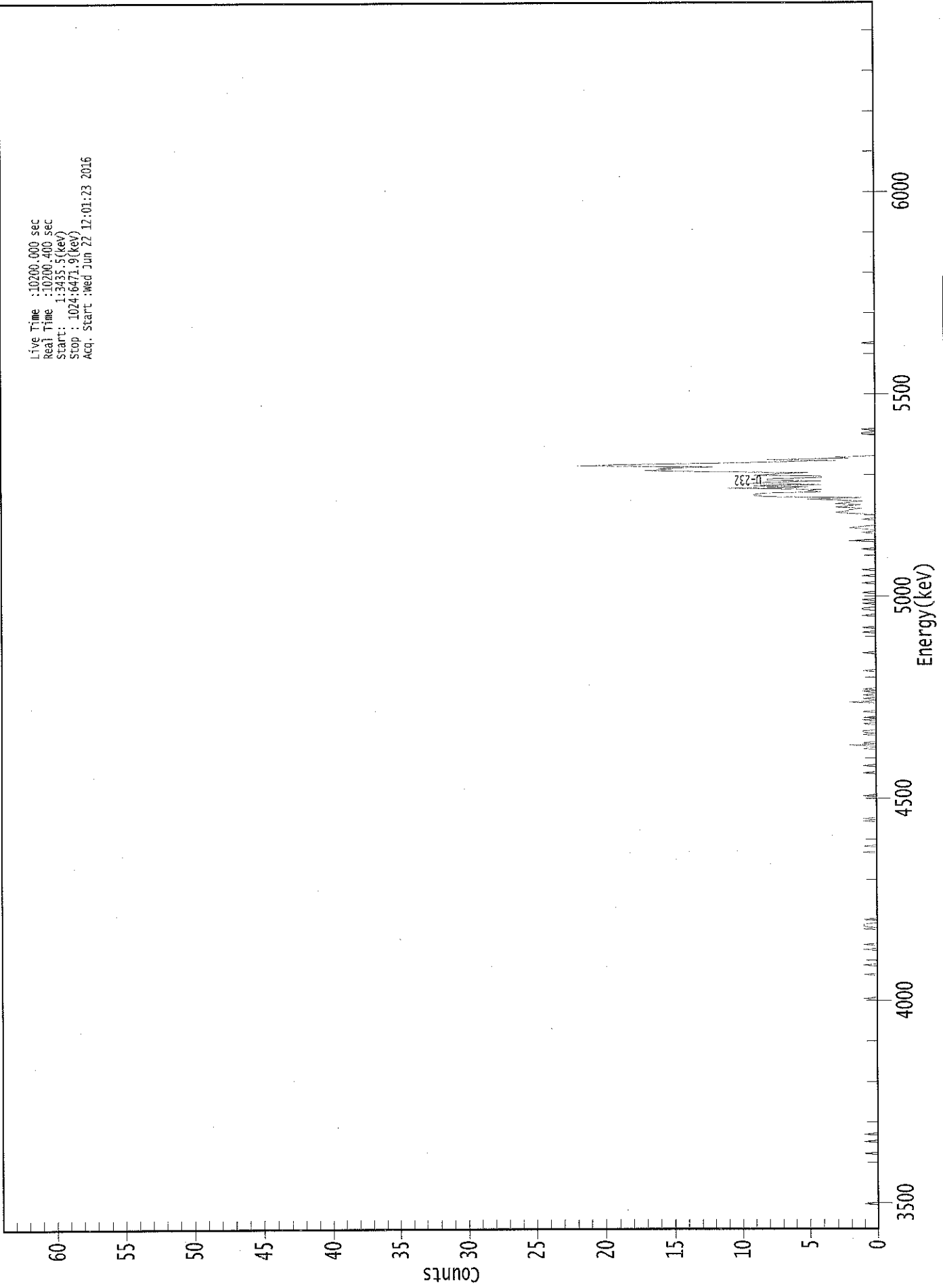
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.999	5302.50*	3.61E+000 +/- 4.24E-001	7.54E-002 +/- 8.85E-003
U-234	0.975	4761.50*	1.96E-001 +/- 9.44E-002	4.59E-002 +/- 5.39E-003
U-235	0.995	4385.50*	4.96E-002 +/- 5.39E-002	6.49E-002 +/- 7.61E-003
U-238	0.984	4184.40*	1.08E-001 +/- 6.91E-002	4.57E-002 +/- 5.36E-003

AG
6/23/16

0000155037.CNF

Live Time :10200.400 sec
Real Time :10200.400 sec
Start : 1:34:35.5(keV)
Stop : 1024:6471.9(keV)
Acq. Start :Wed Jun 22 12:01:23 2016



ROI Type: 1

ROI Type: 3

369: 0 0 0 0 0 0 0 0

Sample Title: 02

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

801: 0 0 0 0 0 0 0 0

Sample Title: 02

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



KB
6/22/16

Sample Description: CP-5023-00-02 DUP
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001550
 Batch Identification: 1606040A-UU
 Sample Identification: 03
 Sample Geometry: Shelf 2
 Procedure Description: U iso

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

Sample Size: 1.578E+000 +/- 0.000E+000 gram
 Sample Date/Time: 6/2/2016 7:32:01 AM
 Acquisition Date/Time: 6/22/2016 12:02:05 PM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
 Tracer Quantity: 0.653 mL
 Effective Efficiency: 0.1751 +/- 0.0101
 Counting Efficiency: 0.1510 +/- 0.0027 on 12/11/2015 11:36:41 AM
 Chem. Recovery Factor: 1.1593 +/- 0.0701

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	357.32	10.38	0.68	0.00E+000	23.7
U-234	4.732	104.49	19.23	0.51	0.00E+000	4.1
U-235	4.398	9.66	64.35	0.34	0.00E+000	3.0
U-238	4.154	107.98	18.97	1.02	0.00E+000	15.2

T = Tracer Peak used for Effective Efficiency

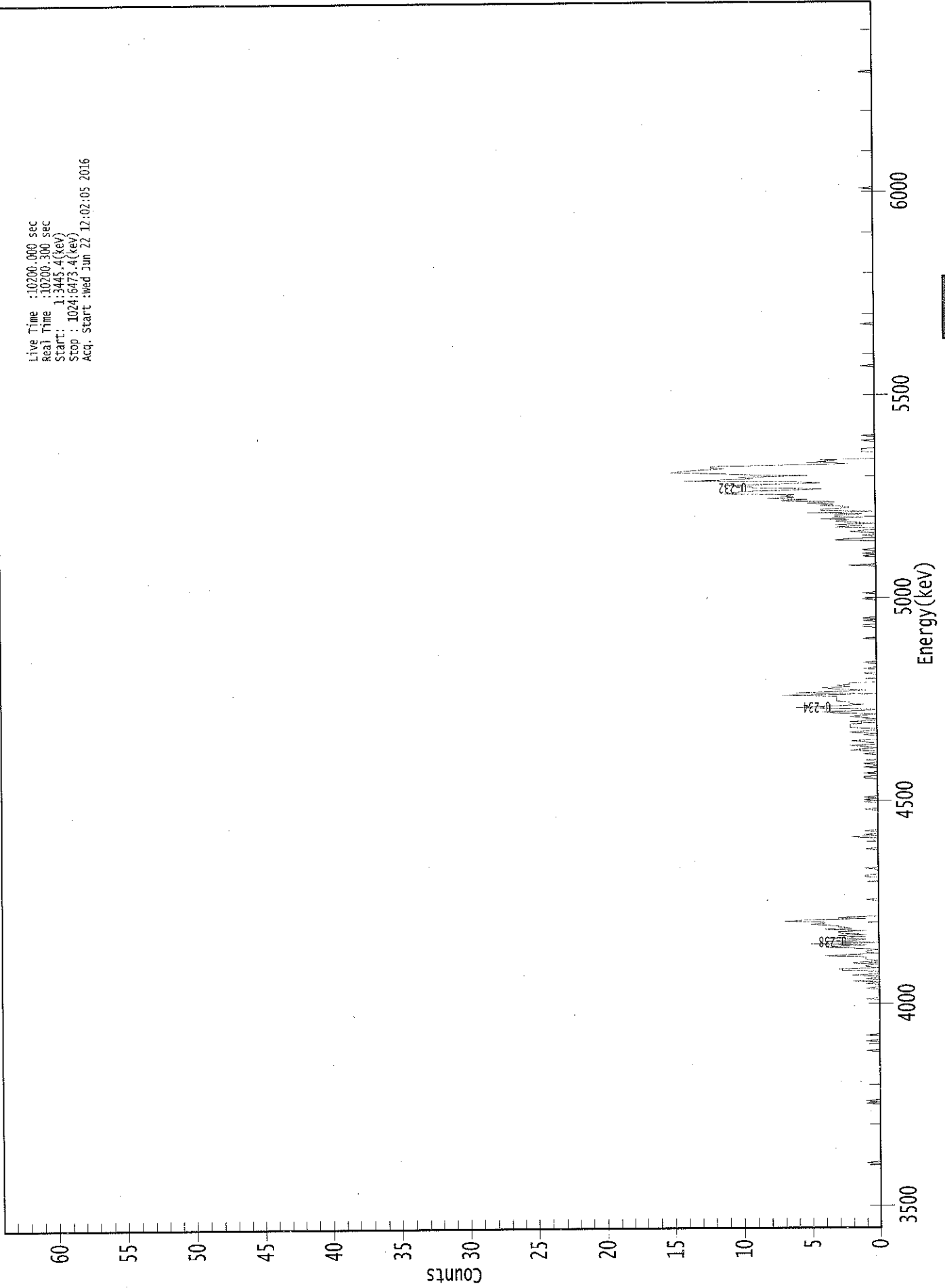
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.995	5302.50*	3.43E+000 +/- 3.89E-001	5.42E-002 +/- 6.14E-003
U-234	0.994	4761.50*	1.00E+000 +/- 2.24E-001	5.04E-002 +/- 5.71E-003
U-235	0.999	4385.50*	1.14E-001 +/- 7.48E-002	5.67E-002 +/- 6.41E-003
U-238	0.994	4184.40*	1.03E+000 +/- 2.28E-001	6.03E-002 +/- 6.82E-003

AG
6/23/16

0000155048.CNF

Live Time :10200.000 sec
Real Time :10200.300 sec
Start : 1:34:5.4(keV)
Stop : 1024:6473.4(keV)
Acq. Start :Wed Jun 22 12:02:05 2016



ROI Type: 1

ROI Type: 3

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

Sample Title: 03

Elapsed Live time: 10200
 Elapsed Real Time: 10200

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

369: 0 0 0 0 0 0 0 0 1

Sample Title: 03

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

801: 0 0 0 0 0 0 0 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	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	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:	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	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

103
6/22/16

Apex-Alpha™

Sample Description: CP-5023 00-02
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001550
 Batch Identification: 1606040A-UU
 Sample Identification: 04
 Sample Geometry: Shelf 2
 Procedure Description: U iso

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

Sample Size: 1.511E+000 +/- 0.000E+000 gram
 Sample Date/Time: 6/2/2016 7:32:01 AM
 Acquisition Date/Time: 6/22/2016 12:01:59 PM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
 Tracer Quantity: 0.653 mL
 Effective Efficiency: 0.1727 +/- 0.0100
 Counting Efficiency: 0.1465 +/- 0.0026 on 12/11/2015 11:36:39 AM
 Chem. Recovery Factor: 1.1788 +/- 0.0717

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	352.81	10.46	1.19	0.00E+000	12.7
U-234	4.727	94.81	20.28	1.19	0.00E+000	8.2
U-235	4.383	6.81	82.43	1.19	0.00E+000	3.0
U-238	4.152	83.64	21.63	1.36	0.00E+000	3.3

T = Tracer Peak used for Effective Efficiency

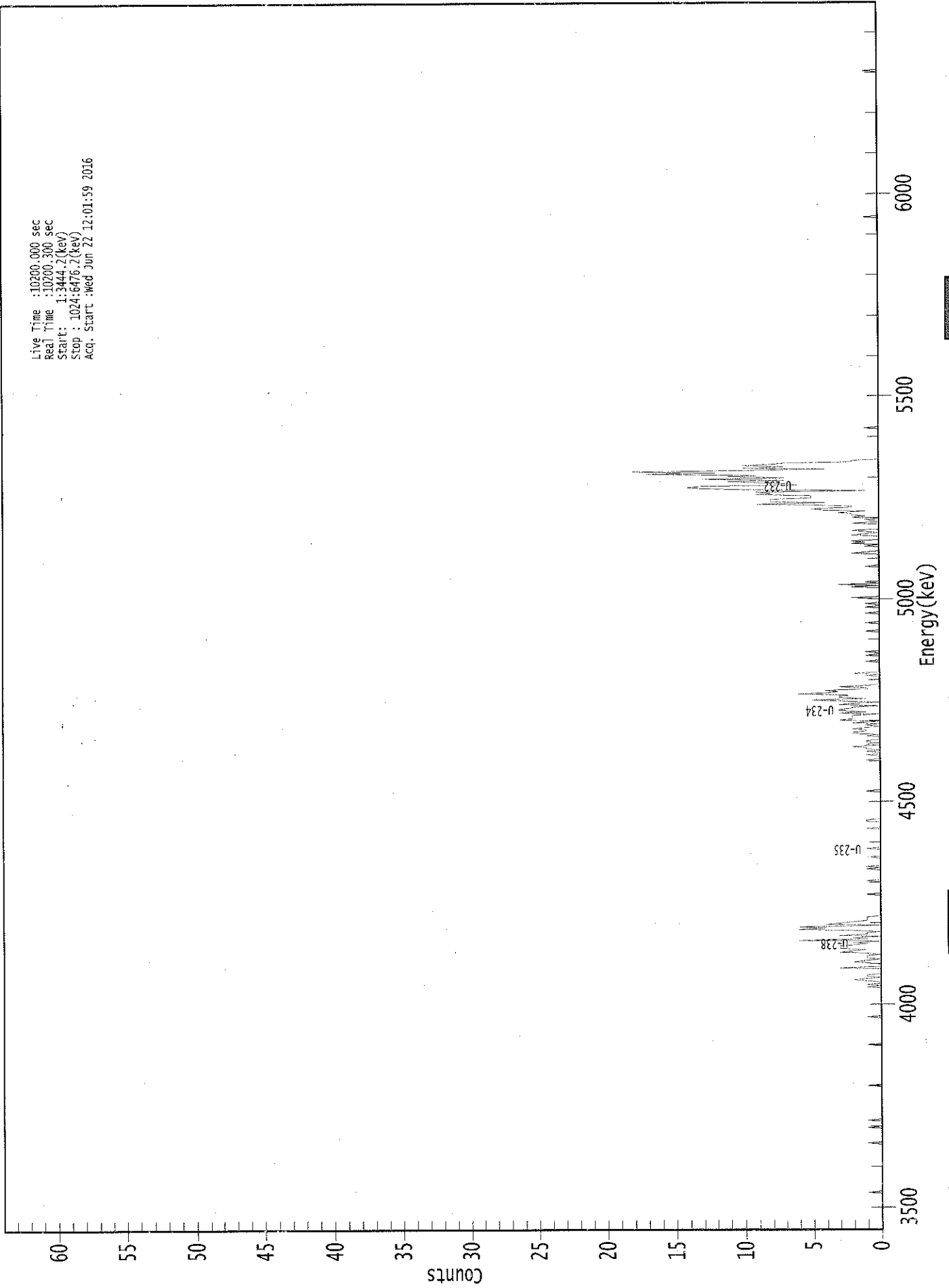
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.997	5302.50*	3.59E+000 +/- 4.09E-001	6.71E-002 +/- 7.64E-003
U-234	0.992	4761.50*	9.65E-001 +/- 2.24E-001	6.70E-002 +/- 7.63E-003
U-235	1.000	4385.50*	8.55E-002 +/- 7.11E-002	8.27E-002 +/- 9.41E-003
U-238	0.993	4184.40*	8.47E-001 +/- 2.07E-001	6.94E-002 +/- 7.91E-003

AG
6/23/16

0000155049.CNF

Live Time : 10200.000 sec
Real Time : 10200.300 sec
Start : 1:3444.7(keV)
Stop : 1024:6476.7(keV)
Acq. Start : Wed Jun 22 12:01:59 2016



ROI Type: 1

ROI Type: 3

369: 0 0 0 0 0 0 0 0 0

Sample Title: 04

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

801: 0 0 0 0 0 0 0 0

Sample Title: 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	1	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	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
6/22/16

Sample Description: CP-5023 02-05
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001550
 Batch Identification: 1606040A-UU
 Sample Identification: 05
 Sample Geometry: Shelf 2
 Procedure Description: U iso

Detector Name: Alpha_052
 Chamber Serial Number: 10006123B
 Detector Serial Number: 52
 Env. Background: System Bkgd 156912
 Reagent Blank: <not performed>

Sample Size: 1.523E+000 +/- 0.000E+000 gram
 Sample Date/Time: 6/2/2016 7:32:01 AM
 Acquisition Date/Time: 6/22/2016 12:02:11 PM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
 Tracer Quantity: 0.653 mL
 Effective Efficiency: 0.1707 +/- 0.0100
 Counting Efficiency: 0.1729 +/- 0.0030 on 12/11/2015 11:36:36 AM
 Chem. Recovery Factor: 0.9871 +/- 0.0601

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 5.274	348.66	10.50	0.34	0.00E+000	14.4
U-234	4.728	131.49	17.13	0.51	0.00E+000	4.1
U-235	4.414	8.83	66.70	0.17	0.00E+000	3.0
U-238	4.134	81.00	21.91	0.00	0.00E+000	4.0

T = Tracer Peak used for Effective Efficiency

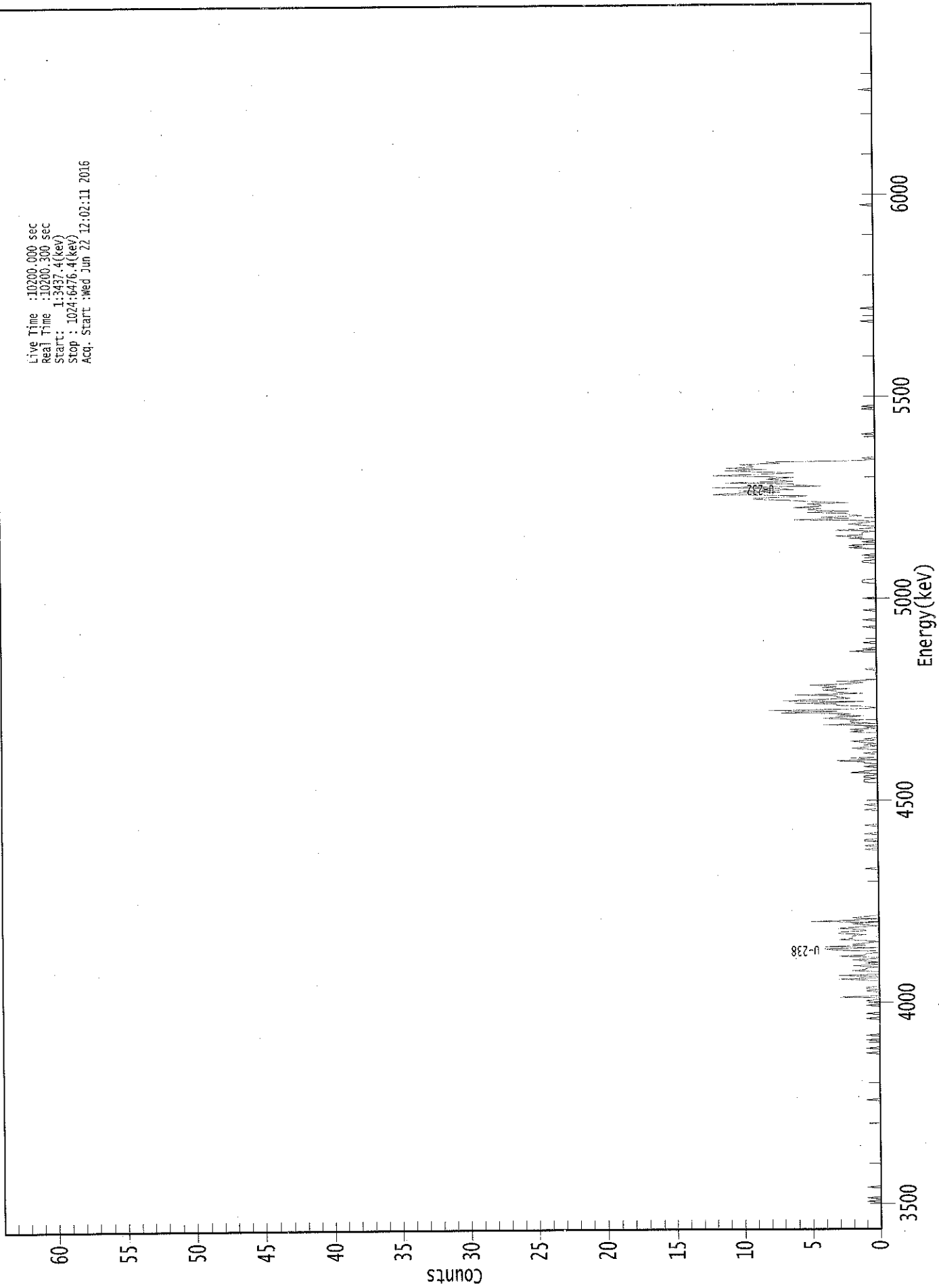
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.994	5302.50*	3.56E+000 +/- 4.07E-001	4.89E-002 +/- 5.59E-003
U-234	0.992	4761.50*	1.34E+000 +/- 2.77E-001	5.36E-002 +/- 6.13E-003
U-235	0.994	4385.50*	1.11E-001 +/- 7.53E-002	5.26E-002 +/- 6.01E-003
U-238	0.982	4184.40*	8.24E-001 +/- 2.04E-001	6.10E-002 +/- 6.97E-003

AK
6/23/16

0000155050.CNF

Live Time : 10200.000 sec
Real Time : 10200.300 sec
Start : 1:3437.4(kev)
Stop : 1024:0476.4(kev)
Acq. Start : Wed Jun 22 12:02:11 2016



ROI Type: 1

ROI Type: 3

369: 0 0 0 0 0 1 1 1

Sample Title: 05

Channel	1	2	3	4	5	6	7	8
377:	0	1	1	0	0	2	1	0
385:	0	0	1	0	0	1	1	3
393:	0	2	0	0	0	1	0	0
401:	0	2	1	0	1	0	1	2
409:	0	1	0	0	0	0	0	2
417:	1	2	0	1	0	4	0	2
425:	2	1	4	3	1	3	2	7
433:	3	8	1	0	1	3	3	6
441:	1	7	4	2	3	3	6	1
449:	3	3	4	2	4	3	5	2
457:	1	3	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	2	0	1	0	0	0
489:	0	1	0	0	0	0	0	0
497:	0	0	0	0	0	0	1	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	0	1	0
529:	0	0	0	0	0	0	0	0
537:	0	0	0	1	1	1	0	0
545:	0	0	0	0	0	0	0	0
553:	0	0	0	0	1	1	0	0
561:	0	0	1	0	0	0	0	0
569:	2	1	2	0	0	1	0	0
577:	2	1	3	1	1	1	0	3
585:	1	0	0	1	2	1	0	1
593:	6	2	4	1	2	2	5	2
601:	5	4	6	4	4	5	2	5
609:	6	9	9	6	5	12	11	7
617:	10	6	7	12	4	6	6	11
625:	6	7	8	6	8	12	8	6
633:	9	11	8	11	9	9	10	7
641:	8	1	0	1	0	0	0	0
649:	0	0	0	0	0	0	0	0
657:	0	0	0	0	0	0	0	1
665:	0	0	0	0	0	0	0	0
673:	0	0	0	0	0	0	0	0
681:	0	0	0	0	1	0	1	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:	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: 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	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:	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	1	0
953:	0	0	0	0	0	0	0	0
961:	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0



KB
6/22/16

Sample Description: CP-5023 05-10
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001550
 Batch Identification: 1606040A-UU
 Sample Identification: 06
 Sample Geometry: Shelf 2
 Procedure Description: U iso

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

Sample Size: 1.534E+000 +/- 0.000E+000 gram
 Sample Date/Time: 6/2/2016 7:32:01 AM
 Acquisition Date/Time: 6/22/2016 12:02:01 PM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
 Tracer Quantity: 0.650 mL
 Effective Efficiency: 0.1512 +/- 0.0093
 Counting Efficiency: 0.1516 +/- 0.0027 on 12/11/2015 11:36:34 AM
 Chem. Recovery Factor: 0.9971 +/- 0.0640

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	307.15	11.20	0.85	0.00E+000	6.9
U-234	4.708	89.64	20.88	1.36	0.00E+000	3.5
U-235	4.380	6.00	86.43	0.00	0.00E+000	3.0
U-238	4.125	91.66	20.52	0.34	0.00E+000	3.7

T = Tracer Peak used for Effective Efficiency

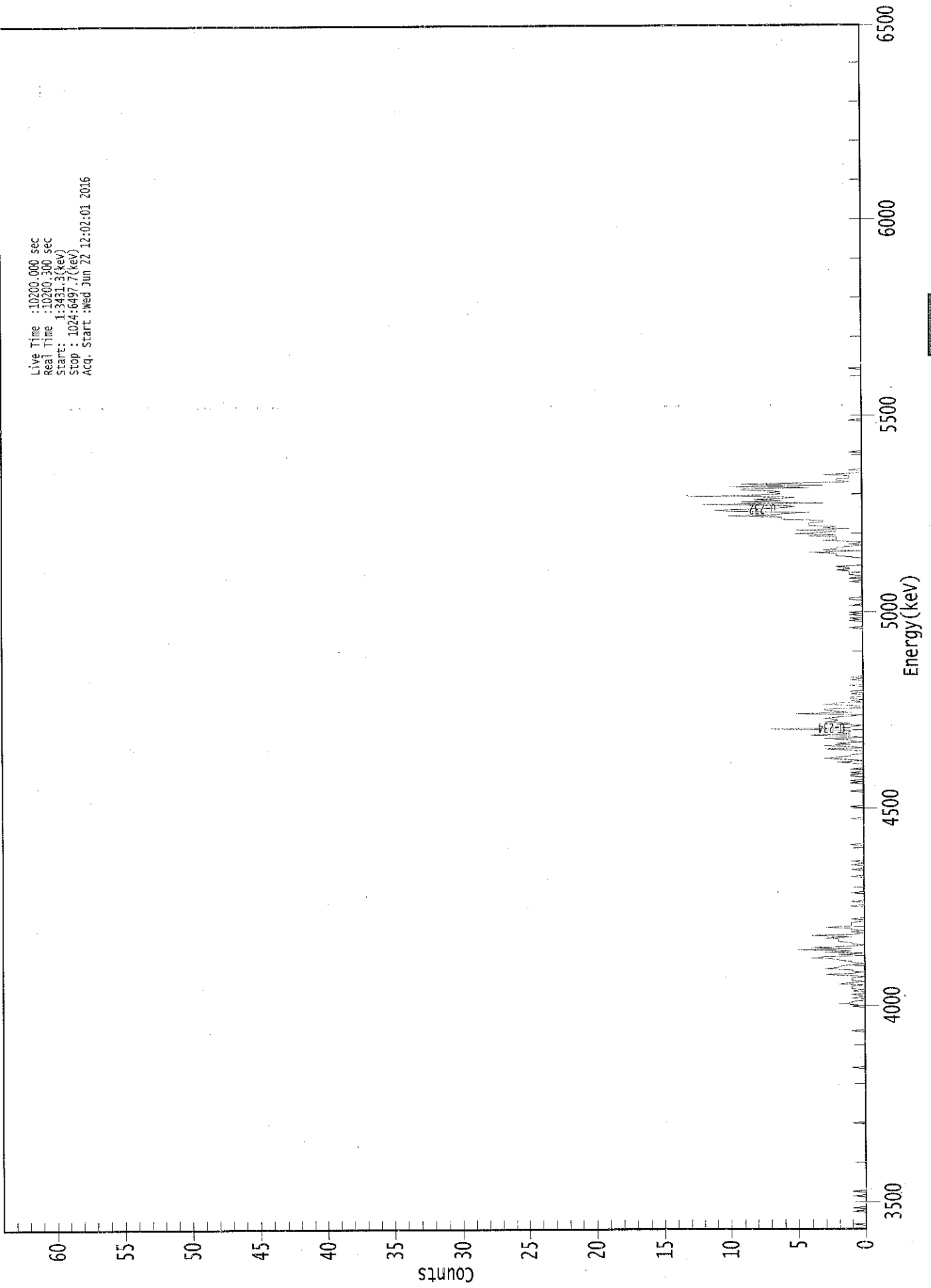
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.990	5302.50*	3.52E+000 +/- 4.25E-001	6.86E-002 +/- 8.28E-003
U-234	0.980	4761.50*	1.03E+000 +/- 2.48E-001	7.85E-002 +/- 9.48E-003
U-235	1.000	4385.50*	8.47E-002 +/- 7.39E-002	8.47E-002 +/- 1.02E-002
U-238	0.975	4184.40*	1.04E+000 +/- 2.49E-001	5.45E-002 +/- 6.58E-003

AG
6/23/16

0000155042.CNF

Live Time :10200.000 sec
Real Time :10200.300 sec
Start : 1:3431.3(kev)
Stop : 1024:6497.7(kev)
Acq. Start :Wed Jun 22 12:02:01 2016



ROI Type: 1

ROI Type: 3

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

Sample Title: 06

Elapsed Live time: 10200
 Elapsed Real Time: 10200

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1:	0	0	0	0	1	0	0	0
9:	0	0	0	0	0	0	0	1
17:	0	0	1	0	0	0	0	0
25:	0	0	0	0	1	0	0	0
33:	1	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	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	1	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	0	0	0	0
185:	0	0	0	0	0	1	0	2
193:	1	1	0	0	1	0	0	1
201:	0	0	1	0	1	1	1	0
209:	2	1	0	1	1	1	0	1
217:	3	1	0	1	1	3	2	2
225:	1	0	1	1	2	2	4	3
233:	0	2	0	3	1	5	1	4
241:	1	0	1	1	2	2	2	3
249:	1	4	1	0	1	0	1	1
257:	3	1	1	1	1	0	0	1
265:	0	0	0	0	0	0	0	0
273:	0	0	1	0	0	0	1	0
281:	0	0	0	0	0	1	0	0
289:	0	0	0	0	0	0	0	0
297:	0	0	0	1	0	0	0	0
305:	0	1	0	0	0	1	0	0
313:	1	0	0	0	0	0	0	0
321:	0	0	0	0	0	0	1	0
329:	0	0	0	0	0	0	0	0
337:	0	0	0	0	0	0	0	0
345:	0	0	0	0	1	0	0	0
353:	0	0	0	0	0	0	1	0
361:	0	0	0	0	0	0	0	0

369: 0 0 0 1 0 0 0 0

Sample Title: 06

Channel	1	2	3	4	5	6	7	8
377:	0	0	1	0	1	0	0	0
385:	1	1	0	1	0	0	1	0
393:	0	0	0	1	2	0	1	3
401:	2	1	1	0	0	0	1	3
409:	0	1	3	1	2	0	1	1
417:	3	0	1	4	1	2	1	1
425:	7	1	1	0	2	1	3	2
433:	2	3	2	1	0	5	1	2
441:	3	3	0	0	1	3	2	0
449:	1	0	1	1	0	0	1	0
457:	1	0	0	0	0	1	0	0
465:	0	0	1	0	1	0	0	0
473:	0	0	0	0	0	0	0	0
481:	0	0	0	0	0	0	0	0
489:	0	0	0	0	0	0	0	0
497:	0	0	0	0	0	0	0	0
505:	0	0	0	0	0	0	1	0
513:	0	0	0	0	1	0	1	0
521:	0	1	0	1	0	0	0	0
529:	0	1	0	0	0	0	1	1
537:	0	0	0	0	0	0	0	0
545:	0	0	0	0	0	1	0	0
553:	1	0	0	1	1	1	1	2
561:	1	1	2	0	0	0	0	0
569:	0	0	1	2	2	2	4	0
577:	3	2	2	1	0	1	0	0
585:	3	2	2	2	4	2	5	3
593:	2	5	1	3	2	4	4	4
601:	3	3	6	6	6	10	6	6
609:	4	10	11	8	6	5	6	12
617:	3	9	6	8	6	5	13	7
625:	6	7	6	9	9	4	10	3
633:	9	4	1	2	2	1	1	1
641:	3	1	0	0	1	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	1	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	1	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 0

Sample Title: 06

Channel	-----	-----	-----	-----	-----	-----	-----	-----
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	0	0
937:	0	0	0	0	0	0	0	0
945:	0	0	0	0	0	0	0	0
953:	0	0	0	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
6/22/16

Apex-Alpha™

Sample Description: CP-5023 10-15
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001550
 Batch Identification: 1606040A-UU
 Sample Identification: 07
 Sample Geometry: Shelf 2
 Procedure Description: U iso

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

Sample Size: 1.515E+000 +/- 0.000E+000 gram
 Sample Date/Time: 6/2/2016 7:32:01 AM
 Acquisition Date/Time: 6/22/2016 12:02:03 PM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
 Tracer Quantity: 0.651 mL
 Effective Efficiency: 0.2049 +/- 0.0111
 Counting Efficiency: 0.1363 +/- 0.0025 on 12/11/2015 11:36:32 AM
 Chem. Recovery Factor: 1.5034 +/- 0.0859

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 5.274	417.15	9.61	0.85	0.00E+000	12.8
U-234	4.725	95.32	20.16	0.68	0.00E+000	6.0
U-235	4.349	5.66	85.23	0.34	0.00E+000	6.0
U-238	4.154	78.32	22.26	0.68	0.00E+000	5.6

T = Tracer Peak used for Effective Efficiency

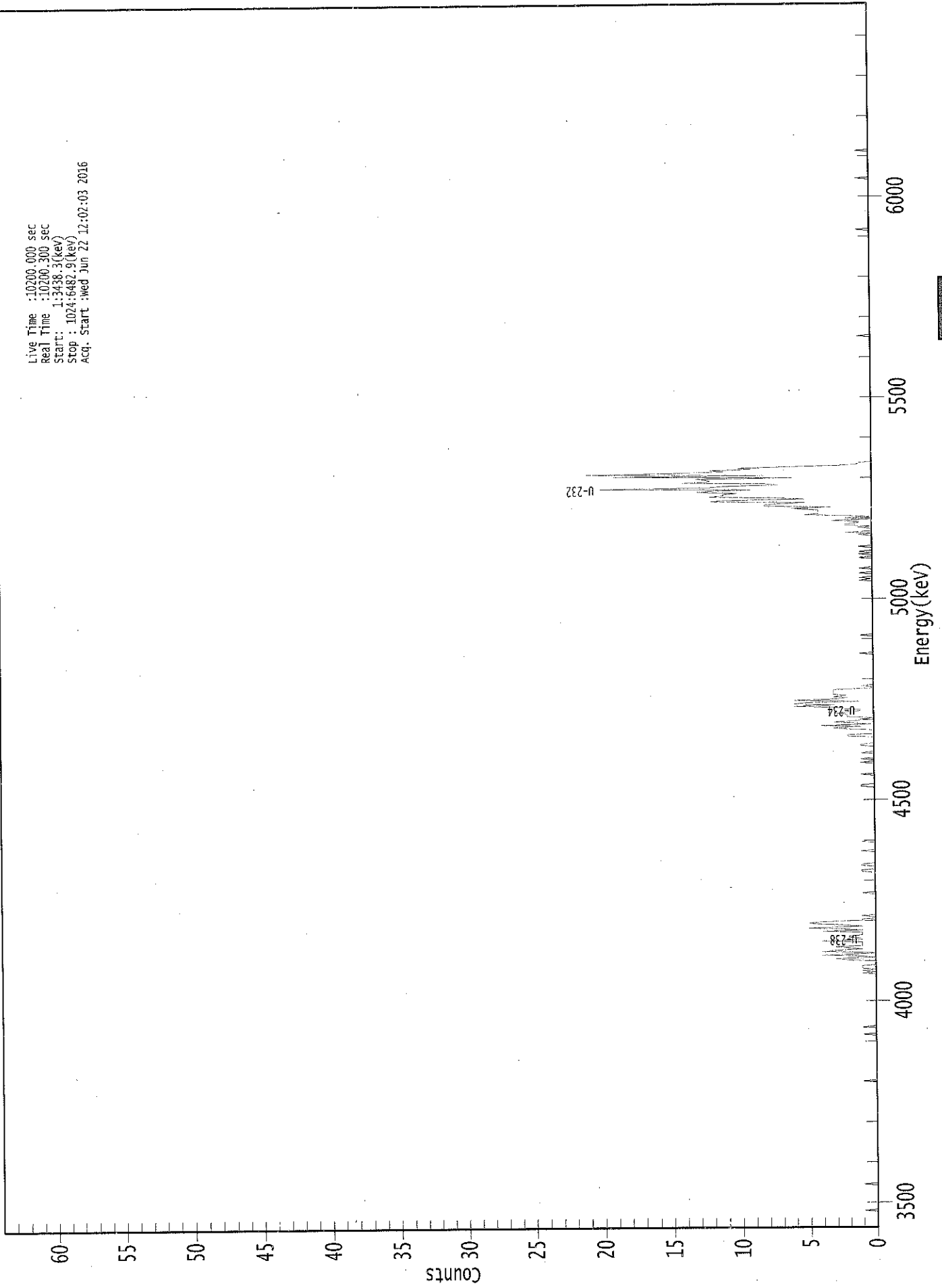
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.994	5302.50*	3.57E+000 +/- 3.79E-001	5.12E-002 +/- 5.44E-003
U-234	0.990	4761.50*	8.15E-001 +/- 1.86E-001	4.82E-002 +/- 5.12E-003
U-235	0.991	4385.50*	5.97E-002 +/- 5.13E-002	5.04E-002 +/- 5.35E-003
U-238	0.993	4184.40*	6.67E-001 +/- 1.64E-001	4.80E-002 +/- 5.10E-003

AK
6/23/16

0000155043.CNF

Live Time :10200.000 sec
Real Time :10200.300 sec
Start : 1:34:38.3(keV)
Stop : 1024:6482.9(keV)
Acq. Start :wed Jun 22 12:02:03 2016



ROI Type: 3

ROI Type: 1

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

Sample Title: 07

Elapsed Live time: 10200
 Elapsed Real Time: 10200

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

369: 1 1 0 0 0 0 0 0

Sample Title: 07

Channel	1	2	3	4	5	6	7	8
377:	0	0	1	0	0	0	0	0
385:	0	0	0	0	1	0	0	1
393:	0	0	0	0	1	0	0	0
401:	0	0	1	1	0	0	0	0
409:	0	0	2	2	0	0	0	0
417:	2	3	1	4	0	2	3	1
425:	1	0	2	2	2	3	2	1
433:	1	2	3	6	3	6	5	1
441:	6	3	2	3	2	3	3	3
449:	3	3	0	0	1	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	1
481:	0	0	0	0	0	0	0	0
489:	0	0	0	0	0	0	1	0
497:	0	0	0	0	0	0	0	0
505:	0	0	0	0	0	0	0	0
513:	0	0	0	0	0	0	0	0
521:	0	0	0	0	0	0	0	0
529:	0	0	0	0	0	0	0	0
537:	0	0	0	0	1	0	1	0
545:	0	0	1	0	0	0	1	0
553:	0	0	0	0	0	0	0	1
561:	0	0	1	0	1	0	0	0
569:	1	0	0	0	0	0	0	0
577:	0	0	1	0	2	0	0	0
585:	1	0	2	2	1	1	3	0
593:	2	0	2	5	4	4	4	4
601:	6	3	8	8	7	5	12	11
609:	5	7	12	11	11	10	13	12
617:	9	20	12	11	7	8	14	12
625:	12	13	6	19	8	21	15	11
633:	12	9	10	6	2	1	1	0
641:	0	0	0	0	0	0	0	0
649:	0	0	0	0	0	0	0	0
657:	0	0	0	0	0	0	0	0
665:	0	0	0	0	0	0	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:	1	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
817:	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0
833:	0	1	0	0	0	0	0
841:	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0
873:	0	0	0	0	1	0	0
881:	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0
897:	0	0	0	1	0	0	0
905:	0	0	0	0	0	0	0
913:	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	0
937:	0	0	0	0	0	0	0
945:	0	0	0	0	0	0	0
953:	0	0	0	0	0	0	0
961:	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0

red
6/22/16

Apex-Alpha™

Sample Description: CP-5024 00-02
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001550
 Batch Identification: 1606040A-UU
 Sample Identification: 08
 Sample Geometry: Shelf 2
 Procedure Description: U iso

Detector Name: Alpha_055
 Chamber Serial Number: 10006124A
 Detector Serial Number: 55
 Env. Background: System Bkgd 156915
 Reagent Blank: <not performed>

Sample Size: 1.564E+000 +/- 0.000E+000 gram
 Sample Date/Time: 6/2/2016 7:32:01 AM
 Acquisition Date/Time: 6/22/2016 12:02:12 PM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
 Tracer Quantity: 0.650 mL
 Effective Efficiency: 0.1722 +/- 0.0100
 Counting Efficiency: 0.1625 +/- 0.0029 on 12/11/2015 11:36:31 AM
 Chem. Recovery Factor: 1.0600 +/- 0.0646

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 5.292	349.98	10.49	1.02	0.00E+000	8.1
U-234	4.740	194.13	14.15	1.87	0.00E+000	6.6
U-235	4.409	18.66	45.85	0.34	0.00E+000	4.5
U-238	4.167	498.83	8.78	0.17	0.00E+000	11.9

T = Tracer Peak used for Effective Efficiency

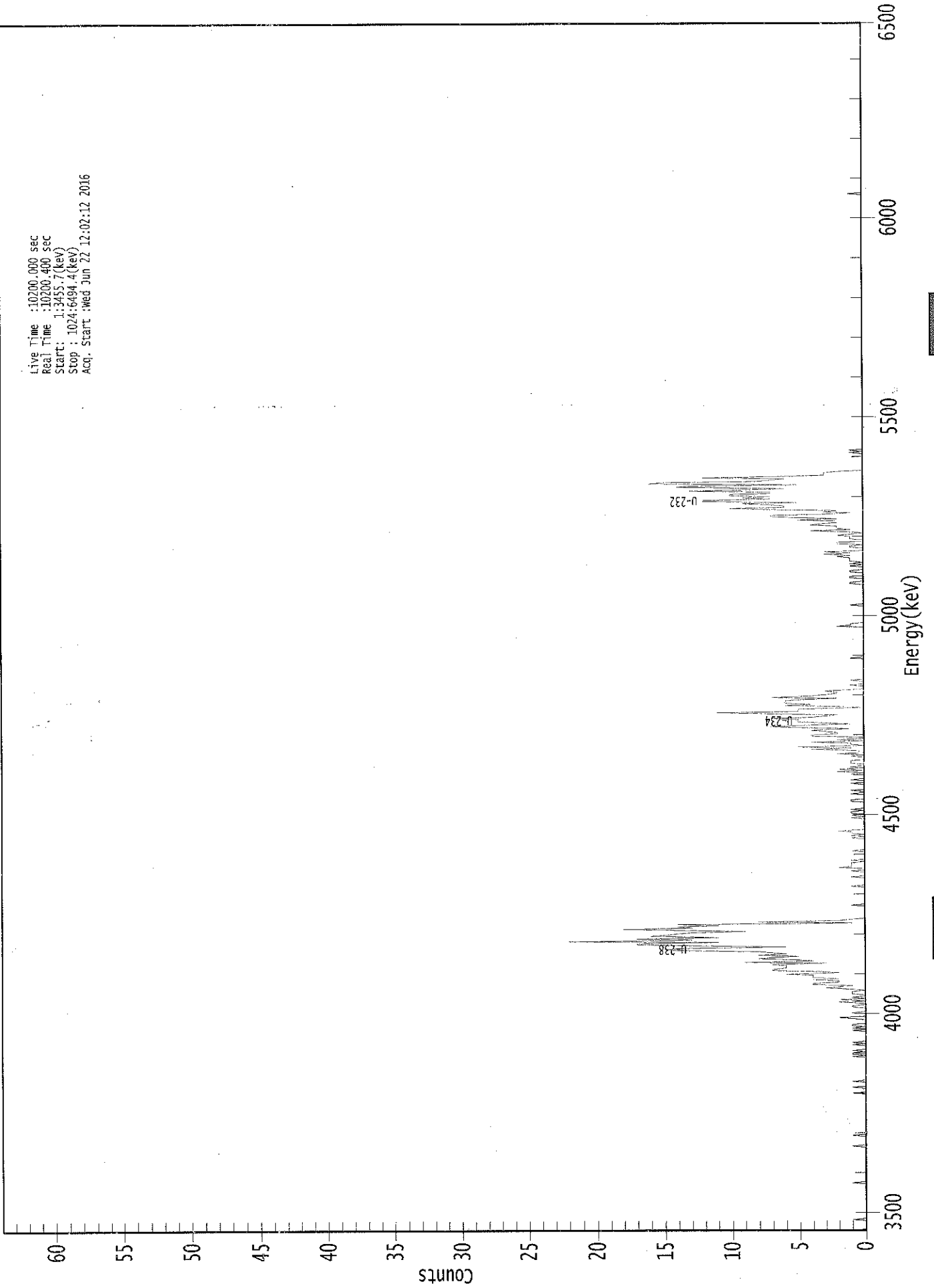
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.999	5302.50*	3.45E+000 +/- 3.94E-001	6.21E-002 +/- 7.10E-003
U-234	0.997	4761.50*	1.91E+000 +/- 3.48E-001	7.46E-002 +/- 8.53E-003
U-235	0.996	4385.50*	2.27E-001 +/- 1.07E-001	5.81E-002 +/- 6.64E-003
U-238	0.998	4184.40*	4.90E+000 +/- 7.05E-001	4.10E-002 +/- 4.68E-003

AG
6/23/16

0000155044.CNF

Live Time : 10200.000 sec
Real Time : 10200.400 sec
Start : 1:3455.7 (keV)
Stop : 1024:6494.4 (keV)
Acq. Start : Wed Jun 22 12:02:12 2016



ROI Type: 1

ROI Type: 3

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

Sample Title: 08

Elapsed Live time: 10200

Elapsed Real Time: 10200

Channel	1	2	3	4	5	6	7	8	9
1:	1	0	0	0	0	0	0	0	0
9:	0	1	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0	0
41:	1	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0	0
65:	0	0	0	0	0	0	0	0	1
73:	0	0	0	0	0	0	0	0	0
81:	1	0	0	0	0	0	0	0	0
89:	0	0	0	0	0	0	0	0	0
97:	0	0	0	0	0	0	0	0	0
105:	0	0	0	0	0	0	0	0	0
113:	0	0	0	0	1	0	0	0	0
121:	0	1	0	0	0	0	1	0	0
129:	0	0	0	0	0	0	0	0	0
137:	0	0	0	0	0	0	0	0	0
145:	0	0	0	1	0	1	1	0	0
153:	1	0	0	0	0	1	0	1	0
161:	0	0	0	0	0	0	0	0	0
169:	0	1	0	1	0	1	1	0	0
177:	0	0	0	1	2	0	0	0	0
185:	1	0	0	0	0	1	1	0	0
193:	0	2	0	2	0	1	0	0	0
201:	1	1	1	0	1	3	2	1	1
209:	4	4	2	2	4	2	4	4	4
217:	4	6	2	3	7	7	6	6	7
225:	6	7	3	9	4	5	8	7	7
233:	5	8	6	7	8	14	15	13	13
241:	6	12	17	17	11	22	13	17	17
249:	11	16	15	14	13	9	14	18	18
257:	13	14	11	14	1	8	2	1	1
265:	0	0	0	0	0	0	0	0	0
273:	0	0	0	1	0	0	0	0	0
281:	0	0	0	0	0	0	0	0	0
289:	0	0	0	1	0	0	0	0	0
297:	0	0	0	1	0	0	0	0	0
305:	1	0	0	2	1	1	1	1	1
313:	0	1	0	0	0	0	0	0	0
321:	0	1	0	0	0	0	0	0	0
329:	0	0	0	0	1	0	1	0	0
337:	1	1	2	0	0	0	0	0	0
345:	0	0	0	0	0	1	0	1	1
353:	0	1	1	0	1	0	0	0	0
361:	0	0	0	1	1	0	0	0	0

369: 0 1 0 0 1 0 0 0

Sample Title: 08

Channel	1	2	3	4	5	6	7	8
377:	0	0	1	0	0	1	0	0
385:	0	0	1	0	2	0	2	0
393:	1	0	0	1	1	1	0	0
401:	0	1	0	2	0	0	1	4
409:	1	5	0	1	1	4	0	2
417:	0	0	4	4	2	2	3	4
425:	1	4	7	5	1	3	5	5
433:	5	7	4	3	2	7	11	5
441:	5	5	0	2	6	4	6	6
449:	6	5	2	7	4	3	2	2
457:	3	1	0	0	0	1	0	0
465:	0	1	0	0	0	0	0	0
473:	0	0	0	0	0	0	0	0
481:	0	0	0	0	1	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	2
513:	1	1	0	0	0	0	0	0
521:	0	0	0	0	0	0	0	0
529:	0	1	0	0	0	0	0	0
537:	0	0	0	0	0	0	0	0
545:	0	0	0	1	1	0	0	0
553:	1	1	0	0	0	1	1	0
561:	0	0	1	0	1	0	1	1
569:	1	1	2	1	3	1	3	0
577:	0	0	1	1	0	2	2	0
585:	0	1	1	1	2	1	0	1
593:	4	1	2	2	2	4	3	2
601:	2	5	2	5	7	7	3	1
609:	3	2	7	10	6	6	7	9
617:	5	12	12	7	9	7	10	10
625:	7	7	13	8	6	14	13	5
633:	16	15	8	7	6	12	6	3
641:	3	3	2	0	0	0	0	0
649:	0	0	0	0	0	0	0	0
657:	0	0	1	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	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: 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	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	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



165
6/22/16

Sample Description: CP-5024 02-05
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001550
 Batch Identification: 1606040A-UU
 Sample Identification: 09
 Sample Geometry: Shelf 2
 Procedure Description: U iso

Detector Name: Alpha_056
 Chamber Serial Number: 10006124B
 Detector Serial Number: 56
 Env. Background: System Bkgd 156916
 Reagent Blank: <not performed>

Sample Size: 1.566E+000 +/- 0.000E+000 gram
 Sample Date/Time: 6/2/2016 7:32:01 AM
 Acquisition Date/Time: 6/22/2016 12:02:15 PM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
 Tracer Quantity: 0.657 mL
 Effective Efficiency: 0.1102 +/- 0.0078
 Counting Efficiency: 0.1647 +/- 0.0029 on 12/11/2015 11:36:29 AM
 Chem. Recovery Factor: 0.6688 +/- 0.0486

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 5.260	226.15	13.06	0.85	0.00E+000	6.9
U-234	4.706	53.64	27.16	1.36	0.00E+000	4.9
U-235	4.386	1.81	193.78	1.19	0.00E+000	5.9
U-238	4.123	80.98	21.94	1.02	0.00E+000	4.4

T = Tracer Peak used for Effective Efficiency

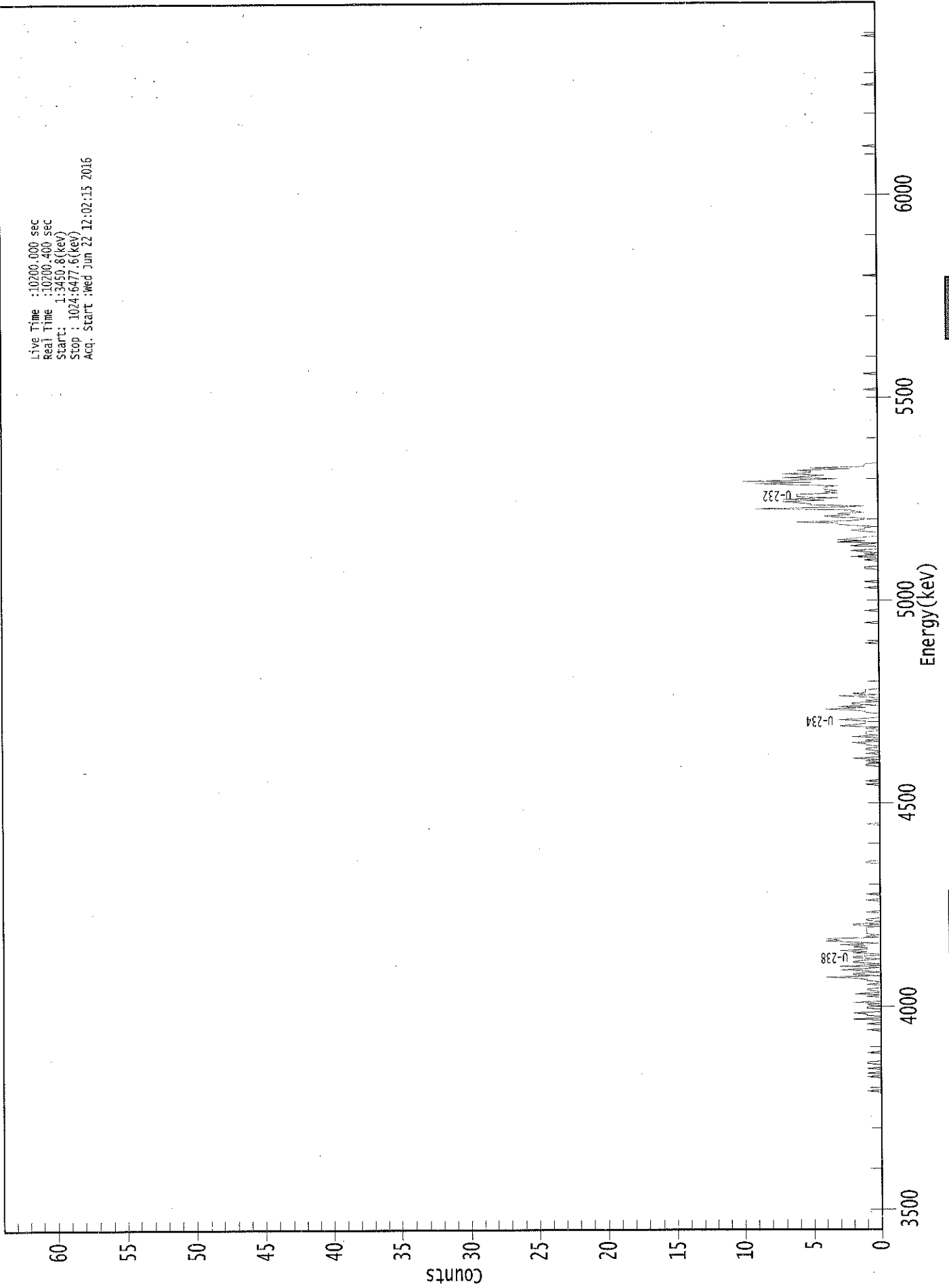
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.988	5302.50*	3.48E+000 +/- 4.81E-001	9.22E-002 +/- 1.27E-002
U-234	0.978	4761.50*	8.26E-001 +/- 2.52E-001	1.06E-001 +/- 1.46E-002
U-235	1.000	4385.50*	3.44E-002 +/- 6.68E-002	1.25E-001 +/- 1.73E-002
U-238	0.974	4184.40*	1.24E+000 +/- 3.22E-001	9.65E-002 +/- 1.33E-002

AG
6/23/16

0000155045.CNF

Live Time : 10200.000 sec
Real Time : 10200.400 sec
Start: 1:3450.6(kev)
Stop : 1024:6477.6(kev)
Acq. Start :Wed Jun 22 12:02:15 2016



ROI Type: 3

ROI Type: 1

42100

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

Sample Title: 09

Elapsed Live time: 10200
 Elapsed Real Time: 10200

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

369: 0 0 1 0 0 1 0 0

Sample Title: 09

Channel	1	2	3	4	5	6	7	8	9
377:	0	0	0	0	0	0	0	0	0
385:	0	0	1	1	0	0	1	0	0
393:	2	0	0	0	1	0	0	1	0
401:	1	0	0	1	1	2	0	1	0
409:	0	0	2	0	1	1	1	1	0
417:	0	1	0	3	2	1	1	1	1
425:	3	1	0	0	0	0	1	1	1
433:	2	4	1	3	0	2	2	0	0
441:	1	0	0	1	3	0	2	1	0
449:	1	1	0	0	0	0	0	0	0
457:	0	0	0	0	0	0	0	0	0
465:	0	0	0	0	0	0	0	0	0
473:	0	0	0	0	0	0	0	0	0
481:	0	0	0	0	0	0	0	0	0
489:	1	0	0	0	0	0	0	0	0
497:	0	0	0	0	0	0	0	0	0
505:	0	1	0	0	0	0	0	0	0
513:	0	0	0	1	0	0	0	0	0
521:	0	0	0	0	0	0	0	0	0
529:	0	0	0	0	0	0	1	0	0
537:	0	0	0	1	0	0	0	0	0
545:	0	0	0	0	0	0	1	1	0
553:	0	0	0	0	0	1	0	0	0
561:	2	0	1	0	1	2	0	0	0
569:	0	2	1	0	3	1	3	2	0
577:	1	0	0	0	0	1	2	1	0
585:	1	0	2	3	3	6	2	1	0
593:	1	3	4	2	3	1	2	2	0
601:	9	3	1	5	5	6	7	4	0
609:	7	3	6	6	6	3	4	3	0
617:	4	4	4	3	6	9	5	10	0
625:	6	3	7	5	4	7	5	5	0
633:	6	2	5	1	1	1	0	0	0
641:	0	0	0	0	0	0	0	0	0
649:	0	0	0	0	0	0	0	0	0
657:	0	0	0	0	0	0	0	0	0
665:	0	0	0	0	0	0	0	0	0
673:	0	0	0	0	0	0	0	0	0
681:	0	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	0	0	0	0
697:	0	0	0	1	0	0	0	0	0
705:	0	0	0	0	0	0	0	0	0
713:	1	0	0	0	0	0	0	0	0
721:	0	0	0	0	0	0	0	0	0
729:	0	0	0	0	0	0	0	0	0
737:	0	0	0	0	0	0	0	0	0
745:	0	0	0	0	0	0	0	0	0
753:	0	0	0	0	0	0	0	0	0
761:	0	0	0	0	0	0	0	0	0
769:	0	0	0	0	0	0	0	0	0
777:	0	0	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	0	0
793:	0	0	1	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	1	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	1	0	0	0	0	0	0
961:	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	1	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

RS
6/22/16

Apex-Alpha™

Sample Description: CP-5024 05-10
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001550
 Batch Identification: 1606040A-UU
 Sample Identification: 10
 Sample Geometry: Shelf 2
 Procedure Description: U iso

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

Sample Size: 1.543E+000 +/- 0.000E+000 gram
 Sample Date/Time: 6/2/2016 7:32:01 AM
 Acquisition Date/Time: 6/22/2016 12:01:55 PM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
 Tracer Quantity: 0.650 mL
 Effective Efficiency: 0.0825 +/- 0.0067
 Counting Efficiency: 0.1636 +/- 0.0029 on 12/11/2015 11:36:28 AM
 Chem. Recovery Factor: 0.5043 +/- 0.0416

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 5.262	167.66	15.16	0.34	0.00E+000	4.7
U-234	4.733	62.83	24.77	0.17	0.00E+000	3.0
U-235	4.466	1.00	277.19	0.00	0.00E+000	3.0
U-238	4.129	61.83	24.97	0.17	0.00E+000	3.5

T = Tracer Peak used for Effective Efficiency

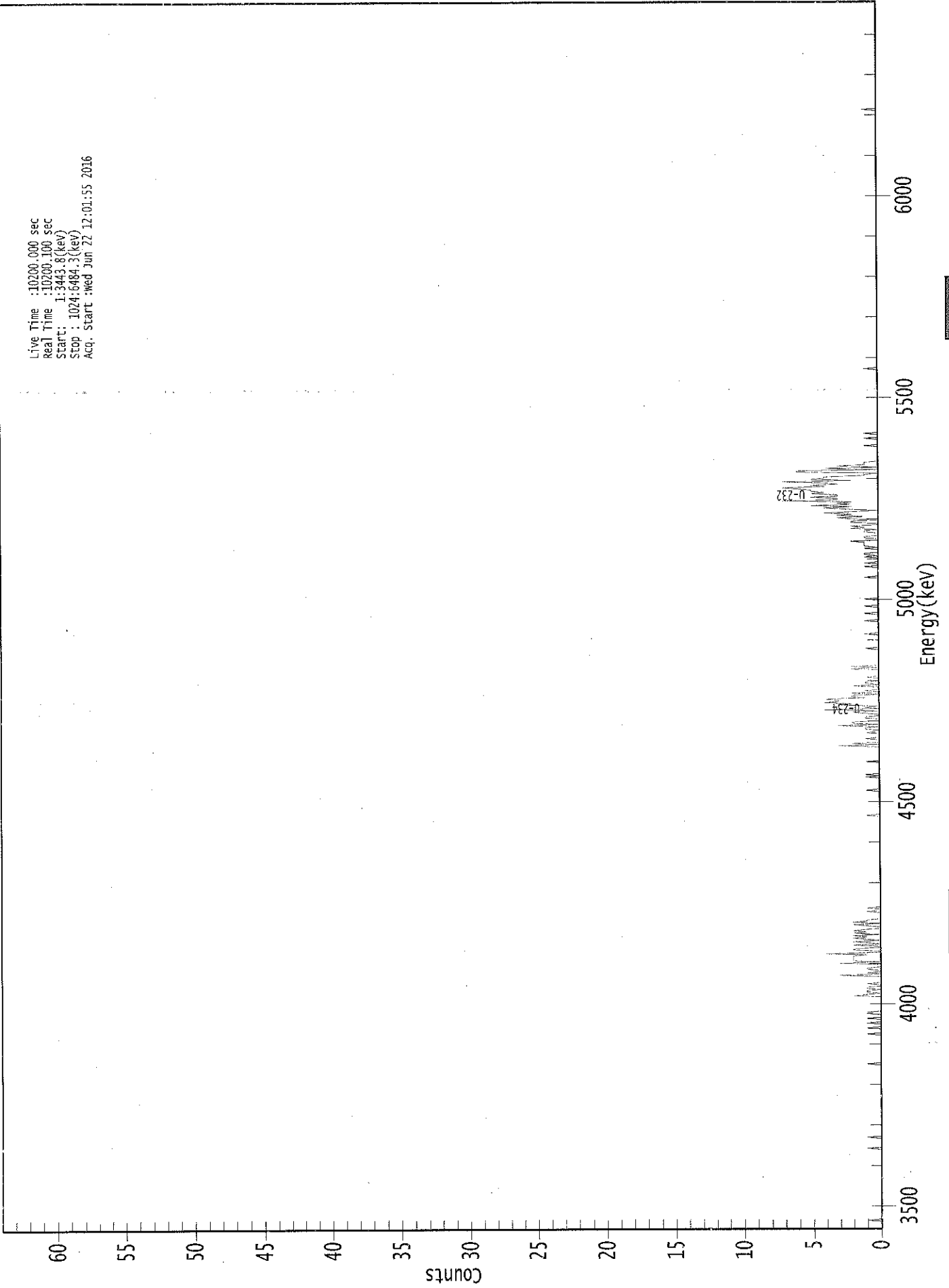
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.989	5302.50*	3.50E+000 +/- 5.53E-001	9.98E-002 +/- 1.58E-002
U-234	0.994	4761.50*	1.31E+000 +/- 3.85E-001	8.71E-002 +/- 1.38E-002
U-235	0.955	4385.50*	2.57E-002 +/- 7.15E-002	1.54E-001 +/- 2.44E-002
U-238	0.978	4184.40*	1.28E+000 +/- 3.80E-001	8.67E-002 +/- 1.37E-002

AG
6/23/16

0000155046.CNF

Live Time : 10200.000 sec
Real Time : 10200.100 sec
Start: 1:3443.8(kev)
Stop : 1024:6484.3(kev)
Acq. Start : wed Jun 22 12:01:55 2016



ROI Type: 1

ROI Type: 3

02120

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

Sample Title: 10

Elapsed Live time: 10200

Elapsed Real Time: 10200

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

369: 0 0 0 0 0 0 0 0

Sample Title: 10

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

801: 0 0 0 0 0 0 0 0

Sample Title: 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	1	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



WPS
6/22/16

Sample Description: CP-5024 10-15
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001550
 Batch Identification: 1606040A-UU
 Sample Identification: 11
 Sample Geometry: Shelf 2
 Procedure Description: U iso

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

Sample Size: 1.522E+000 +/- 0.000E+000 gram
 Sample Date/Time: 6/2/2016 7:32:01 AM
 Acquisition Date/Time: 6/22/2016 12:01:57 PM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
 Tracer Quantity: 0.650 mL
 Effective Efficiency: 0.1863 +/- 0.0105
 Counting Efficiency: 0.1680 +/- 0.0030 on 12/11/2015 11:36:26 AM
 Chem. Recovery Factor: 1.1088 +/- 0.0655

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 5.273	378.81	10.09	1.19	0.00E+000	17.7
U-234	4.721	94.66	20.19	0.34	0.00E+000	7.7
U-235	4.401	10.66	61.14	0.34	0.00E+000	3.0
U-238	4.139	103.32	19.36	0.68	0.00E+000	7.9

T = Tracer Peak used for Effective Efficiency

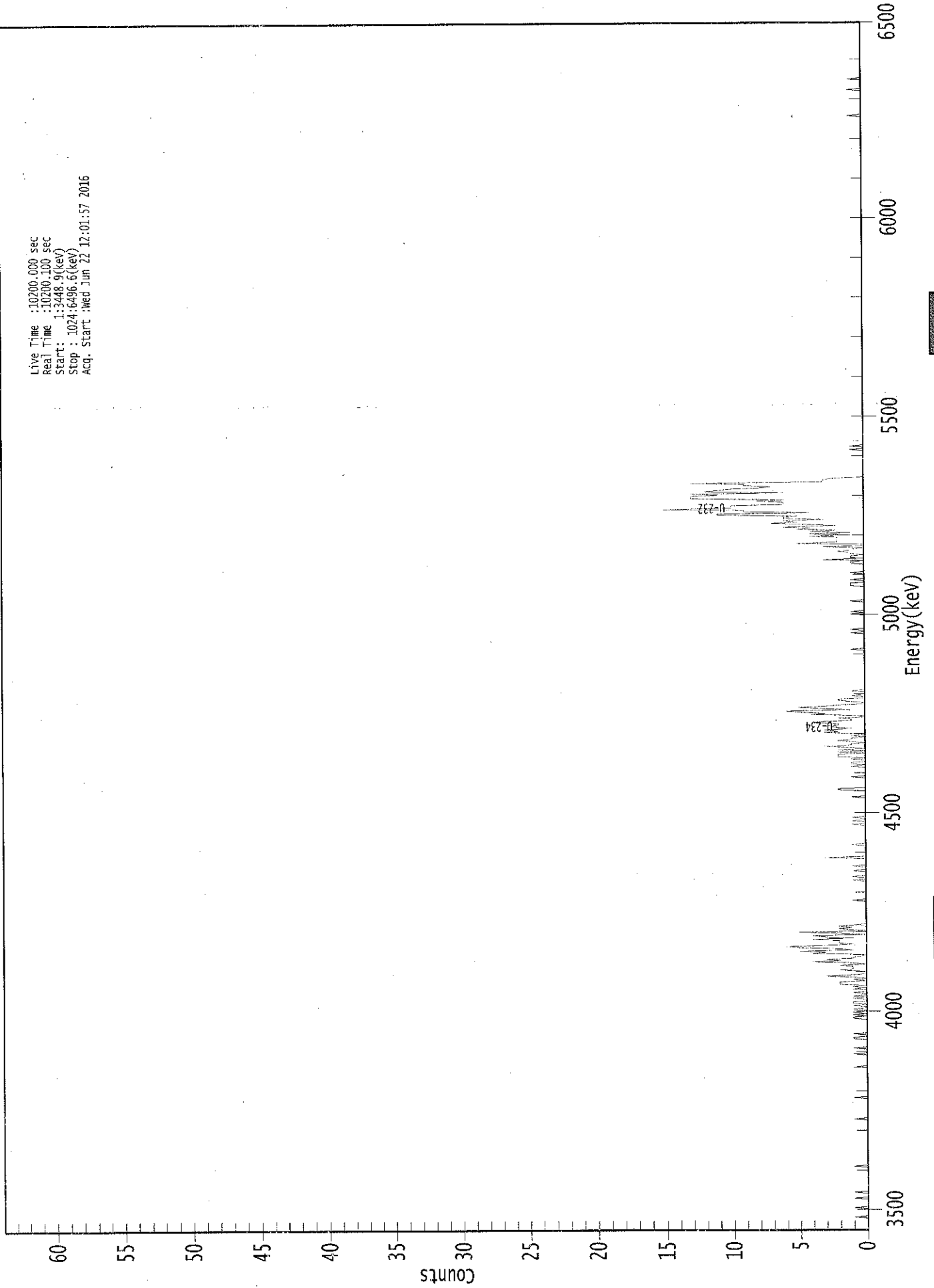
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.994	5302.50*	3.55E+000 +/- 3.92E-001	6.17E-002 +/- 6.82E-003
U-234	0.988	4761.50*	8.86E-001 +/- 2.04E-001	4.48E-002 +/- 4.95E-003
U-235	0.998	4385.50*	1.23E-001 +/- 7.65E-002	5.52E-002 +/- 6.10E-003
U-238	0.985	4184.40*	9.63E-001 +/- 2.15E-001	5.26E-002 +/- 5.81E-003

AG
6/23/16

0000155047.CNF

Live Time : 10200.000 sec
Real Time : 10260.100 sec
Start : 1:3448.9(kev)
Stop : 1024:6496.6(kev)
Acq. Start : Wed Jun 22 12:01:57 2016



ROI Type: 1

ROI Type: 3

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

Sample Title: 11

Elapsed Live time: 10200

Elapsed Real Time: 10200

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

369: 0 0 0 0 2 2 0 0

Sample Title: 11

Channel	-----	-----	-----	-----	-----	-----	-----	-----
377:	0	0	0	0	0	0	0	1
385:	0	0	0	0	0	0	0	0
393:	1	0	1	1	0	0	1	0
401:	2	2	2	0	2	0	2	0
409:	1	3	1	1	0	1	2	1
417:	1	0	1	0	1	3	2	3
425:	1	2	3	2	2	4	3	1
433:	1	2	0	0	4	3	5	6
441:	1	3	5	3	2	0	0	1
449:	2	2	0	0	1	0	0	0
457:	1	0	0	0	0	0	0	0
465:	0	0	0	0	0	0	0	0
473:	0	0	0	0	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:	0	1	0	0	1	0	0	0
513:	0	0	0	0	0	0	0	0
521:	0	1	0	1	0	0	0	0
529:	0	0	0	0	1	0	0	0
537:	0	0	0	0	0	0	0	0
545:	0	1	1	1	0	0	1	0
553:	0	0	0	0	1	0	0	0
561:	0	0	0	0	1	1	0	3
569:	0	1	1	0	1	1	2	1
577:	1	0	3	0	0	5	2	2
585:	2	2	2	4	1	4	1	4
593:	2	5	4	6	2	4	7	5
601:	6	3	6	6	5	11	11	4
609:	9	9	15	10	10	10	6	6
617:	6	8	6	13	13	13	11	13
625:	6	12	11	10	8	7	9	9
633:	13	3	3	3	2	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	1	0	0	1
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	1	2	3	4	5	6	7	8	9
809:	0	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	0	0	0
937:	0	0	0	0	0	0	0	0	1
945:	0	0	0	0	0	0	0	0	0
953:	0	0	0	0	0	0	0	0	0
961:	0	0	0	0	0	0	1	0	0
969:	0	0	0	0	0	0	0	1	0
977:	0	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0	0

KS
6/23/16

Apex-Alpha™

Sample Description: CP-5025 00-02
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001550
 Batch Identification: 1606040A-UU
 Sample Identification: 12
 Sample Geometry: Shelf 2
 Procedure Description: U iso

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

Sample Size: 1.518E+000 +/- 0.000E+000 gram
 Sample Date/Time: 6/2/2016 7:32:01 AM
 Acquisition Date/Time: 6/22/2016 12:02:07 PM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
 Tracer Quantity: 0.665 mL
 Effective Efficiency: 0.0622 +/- 0.0057
 Counting Efficiency: 0.1720 +/- 0.0030 on 12/11/2015 11:36:25 AM
 Chem. Recovery Factor: 0.3619 +/- 0.0336

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	129.49	17.26	0.51	0.00E+000	4.4
U-234	4.735	56.83	26.05	0.17	0.00E+000	3.5
U-235	4.396	3.83	102.72	0.17	0.00E+000	3.0
U-238	4.159	75.00	22.78	0.00	0.00E+000	4.0

T = Tracer Peak used for Effective Efficiency

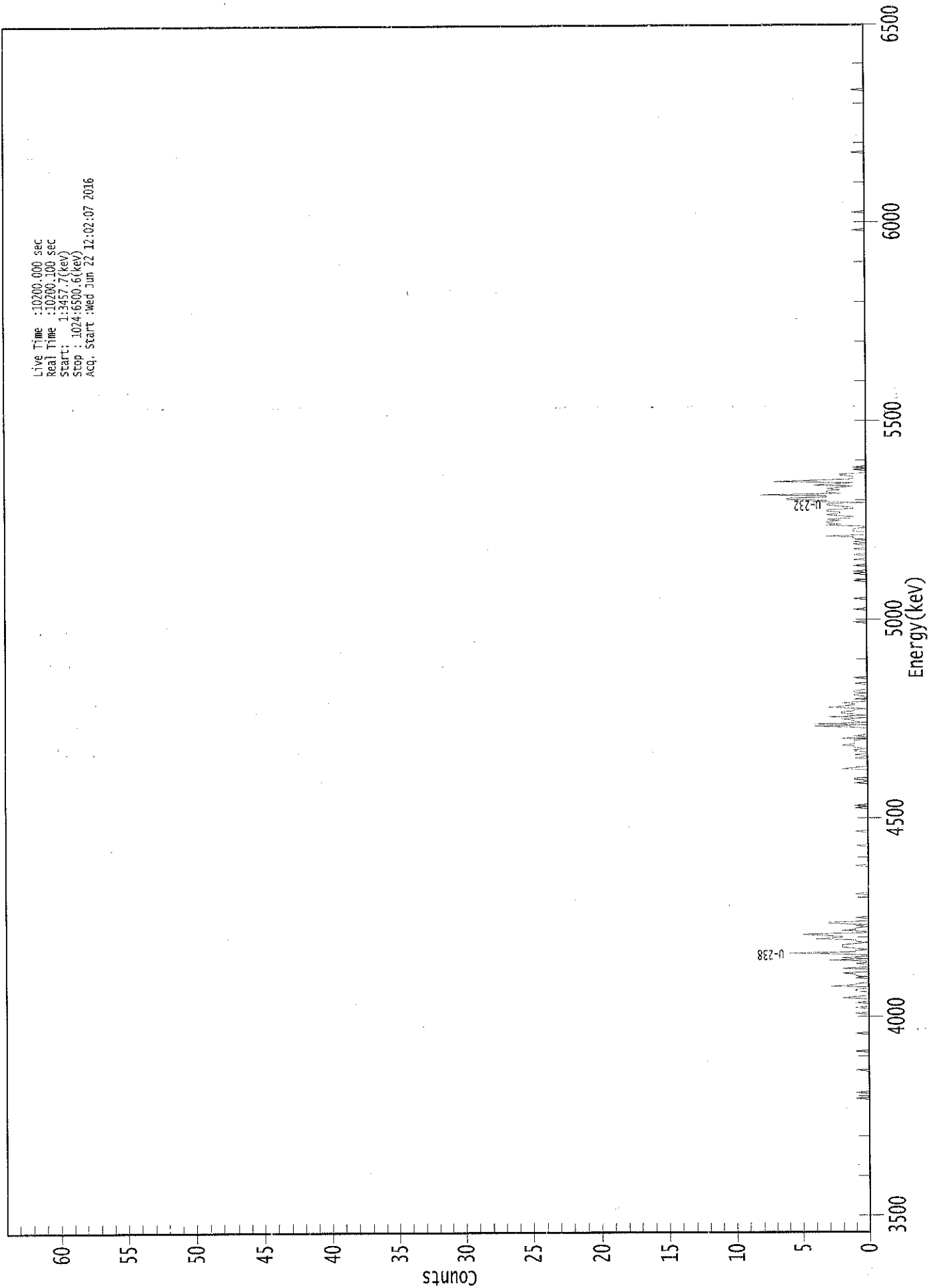
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.999	5302.50*	3.64E+000 +/- 6.50E-001	1.48E-001 +/- 2.63E-002
U-234	0.995	4761.50*	1.60E+000 +/- 5.04E-001	1.17E-001 +/- 2.09E-002
U-235	0.999	4385.50*	1.33E-001 +/- 1.38E-001	1.45E-001 +/- 2.58E-002
U-238	0.996	4184.40*	2.10E+000 +/- 6.07E-001	1.68E-001 +/- 2.99E-002

AG
6/23/16

0000155051.CNF

Live Time : 10200.000 sec
Real Time : 10260.100 sec
Start : 1:34:57.7(kev)
Stop : 1024:6500.6(kev)
Acq. Start : Wed Jun 22 12:02:07 2016



ROI Type: 1

ROI Type: 3

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

Sample Title: 12

Elapsed Live time: 10200
 Elapsed Real Time: 10200

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

369: 0 0 0 0 0 0 0 0 0

Sample Title: 12

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

801: 0 0 0 0 0 0 0 0

Sample Title: 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:	1	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	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	1	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	1
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0



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6/22/16

Sample Description: CP-5025 02-05
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001550
 Batch Identification: 1606040A-UU
 Sample Identification: 13
 Sample Geometry: Shelf 2
 Procedure Description: U iso

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

Sample Size: 1.509E+000 +/- 0.000E+000 gram
 Sample Date/Time: 6/2/2016 7:32:01 AM
 Acquisition Date/Time: 6/22/2016 12:02:09 PM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
 Tracer Quantity: 0.650 mL
 Effective Efficiency: 0.1651 +/- 0.0098
 Counting Efficiency: 0.1522 +/- 0.0027 on 12/11/2015 11:36:23 AM
 Chem. Recovery Factor: 1.0843 +/- 0.0671

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	335.66	10.70	0.34	0.00E+000	4.0
U-234	4.723	86.49	21.15	0.51	0.00E+000	10.8
U-235	4.444	10.83	60.10	0.17	0.00E+000	3.0
U-238	4.149	88.66	20.86	0.34	0.00E+000	10.4

T = Tracer Peak used for Effective Efficiency

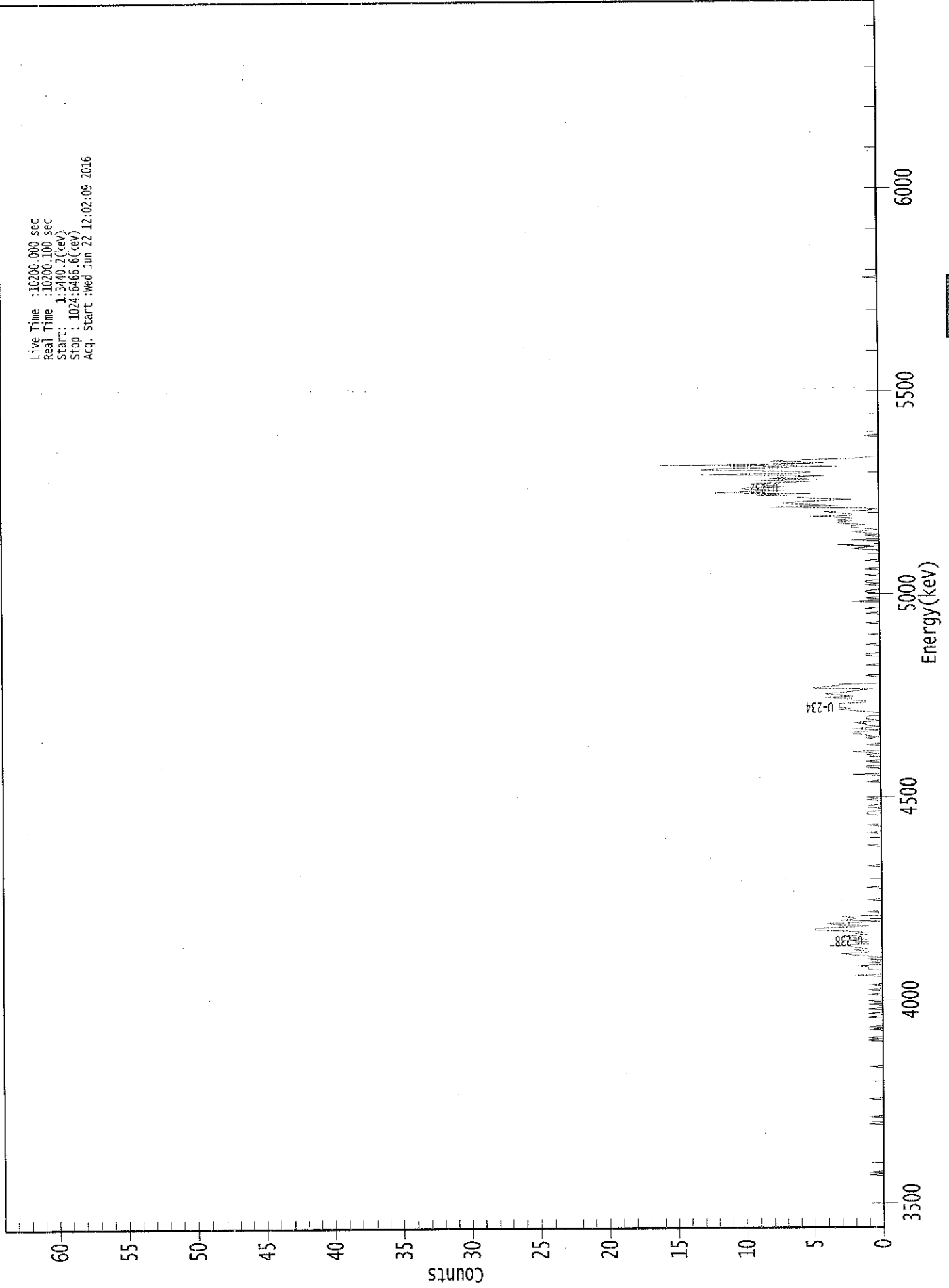
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.990	5302.50*	3.58E+000 +/- 4.16E-001	5.10E-002 +/- 5.92E-003
U-234	0.990	4761.50*	9.22E-001 +/- 2.22E-001	5.59E-002 +/- 6.50E-003
U-235	0.976	4385.50*	1.42E-001 +/- 8.72E-002	5.49E-002 +/- 6.37E-003
U-238	0.991	4184.40*	9.41E-001 +/- 2.25E-001	5.07E-002 +/- 5.89E-003

AG
6/23/16

0000155052.CNF

Live Time :10200.000 sec
Real Time :10260.100 sec
Start: 1:3440.2(rev)
Stop : 1024:6466.6(rev)
Acq. Start :Wed Jun 22 12:02:09 2016



ROI Type: 3

ROI Type: 1

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

Sample Title: 13

Elapsed Live time: 10200
 Elapsed Real Time: 10200

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

369: 0 0 0 1 0 0 0 0

Sample Title: 13

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

801: 0 0 0 0 0 0 0 0

Sample Title: 13

Channel								
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	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

100
6/22/16

Apex-Alpha™

Sample Description: CP-5025 05-10
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001550
 Batch Identification: 1606040A-UU
 Sample Identification: 14
 Sample Geometry: Shelf 2
 Procedure Description: U iso

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

Sample Size: 1.605E+000 +/- 0.000E+000 gram
 Sample Date/Time: 6/2/2016 7:32:01 AM
 Acquisition Date/Time: 6/22/2016 3:01:13 PM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
 Tracer Quantity: 0.663 mL
 Effective Efficiency: 0.1874 +/- 0.0104
 Counting Efficiency: 0.1762 +/- 0.0031 on 12/11/2015 8:20:59 AM
 Chem. Recovery Factor: 1.0635 +/- 0.0622

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	388.32	9.96	0.68	0.00E+000	13.3
U-234	4.731	140.49	16.57	0.51	0.00E+000	3.8
U-235	4.430	6.00	86.43	0.00	0.00E+000	3.0
U-238	4.157	107.83	18.89	0.17	0.00E+000	4.3

T = Tracer Peak used for Effective Efficiency

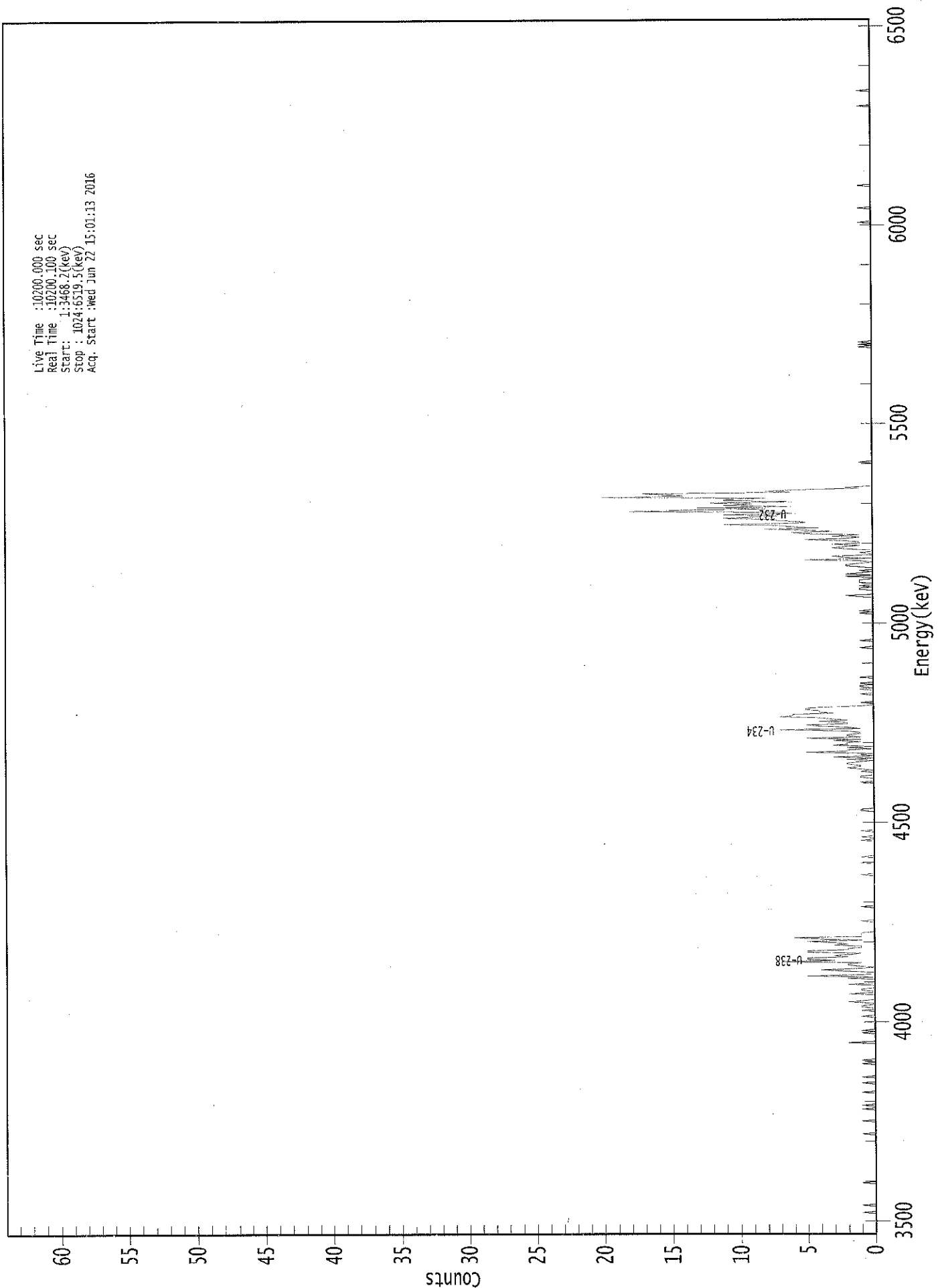
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.995	5302.50*	3.43E+000 +/- 3.75E-001	4.98E-002 +/- 5.45E-003
U-234	0.994	4761.50*	1.24E+000 +/- 2.46E-001	4.63E-002 +/- 5.06E-003
U-235	0.986	4385.50*	6.54E-002 +/- 5.69E-002	6.53E-002 +/- 7.14E-003
U-238	0.995	4184.40*	9.48E-001 +/- 2.07E-001	3.67E-002 +/- 4.01E-003

AG
6/23/16

0000155053.CNF

Live Time : 10200.000 sec
Real Time : 10200.100 sec
Start : 1:3468.2(kev)
Stop : 1024:6519.5(kev)
Acq. Start : Wed Jun 22 15:01:13 2016



ROI Type: 3

ROI Type: 1

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

Sample Title: 14

Elapsed Live time: 10200

Elapsed Real Time: 10200

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

369: 0 0 0 0 0 0 0 0 0

Sample Title: 14

Channel	-----	-----	-----	-----	-----	-----	-----	-----
377:	0	0	0	0	1	0	0	0
385:	1	1	0	0	0	1	0	1
393:	2	1	1	2	2	1	0	2
401:	0	3	0	1	0	5	2	2
409:	0	2	0	3	2	2	1	3
417:	1	5	1	2	2	1	1	2
425:	7	1	2	4	5	2	2	4
433:	2	3	4	7	6	6	3	4
441:	4	5	5	4	1	0	0	1
449:	0	0	0	0	0	0	1	0
457:	0	0	1	0	1	1	0	1
465:	0	0	0	0	1	0	0	0
473:	0	0	0	0	0	0	0	0
481:	0	0	0	0	0	0	0	0
489:	0	0	0	0	0	1	0	0
497:	0	0	0	1	0	0	0	0
505:	0	0	0	0	0	0	0	0
513:	0	0	0	0	0	0	0	0
521:	0	0	1	0	1	0	0	0
529:	0	0	0	0	0	0	0	0
537:	1	2	0	0	0	0	1	1
545:	0	1	0	0	1	1	1	0
553:	0	2	0	2	1	0	1	0
561:	0	1	2	2	1	0	1	5
569:	0	2	3	0	0	1	0	0
577:	2	3	2	1	3	1	1	2
585:	5	2	1	3	1	5	6	3
593:	5	8	4	6	7	11	5	5
601:	7	8	11	9	7	11	6	7
609:	18	14	8	13	6	11	9	12
617:	6	11	11	8	20	14	15	17
625:	6	8	6	1	2	0	0	0
633:	0	0	0	0	0	0	0	0
641:	0	0	0	0	0	0	0	0
649:	0	1	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	1	0	1	0	1	0
753:	0	0	0	0	0	0	0	0
761:	0	0	0	0	0	0	0	0
769:	0	0	0	0	0	0	0	0
777:	0	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0

801: 0 0 0 0 0 0 0 0 0

Sample Title: 14

Channel	-----	-----	-----	-----	-----	-----	-----	-----
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	1	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	1	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	0	0
937:	0	0	0	0	0	0	0	0
945:	0	0	0	0	0	1	0	0
953:	0	0	0	0	0	0	0	0
961:	0	0	1	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
6/22/14

Apex-Alpha™

Sample Description: CP-5025 10-15
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001550
 Batch Identification: 1606040A-UU
 Sample Identification: 15
 Sample Geometry: Shelf 2
 Procedure Description: U iso

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

Sample Size: 1.550E+000 +/- 0.000E+000 gram
 Sample Date/Time: 6/2/2016 7:32:01 AM
 Acquisition Date/Time: 6/22/2016 3:01:15 PM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
 Tracer Quantity: 0.656 mL
 Effective Efficiency: 0.2094 +/- 0.0112
 Counting Efficiency: 0.1772 +/- 0.0031 on 12/11/2015 8:20:57 AM
 Chem. Recovery Factor: 1.1817 +/- 0.0665

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	5.278	429.66	9.46	0.34	0.00E+000	22.7
U-234	4.733	111.32	18.64	0.68	0.00E+000	14.8
U-235	4.393	9.00	68.87	0.00	0.00E+000	3.0
U-238	4.163	117.83	18.07	0.17	0.00E+000	6.5

T = Tracer Peak used for Effective Efficiency

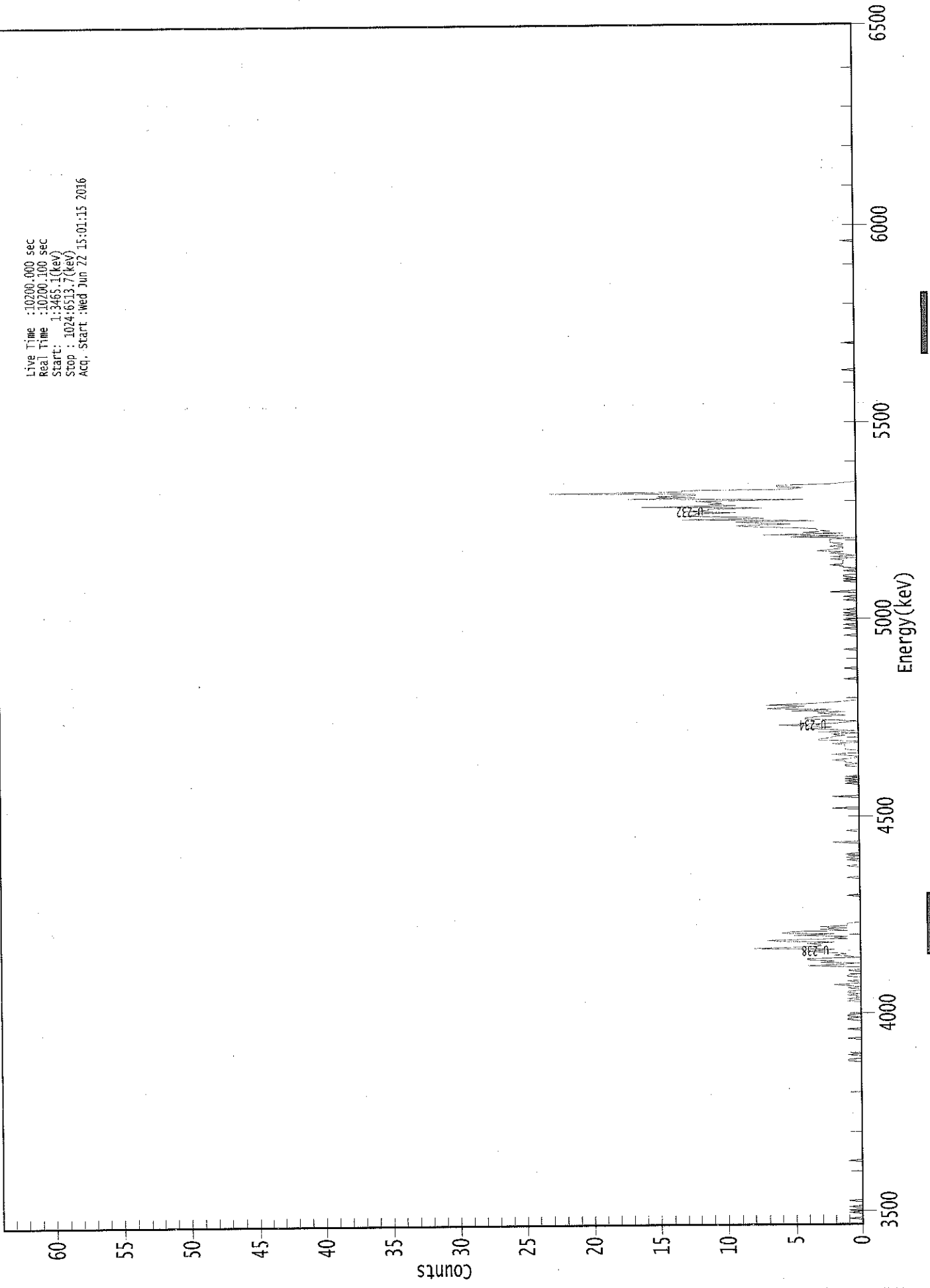
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.996	5302.50*	3.52E+000 +/- 3.69E-001	3.91E-002 +/- 4.10E-003
U-234	0.994	4761.50*	9.11E-001 +/- 1.95E-001	4.62E-002 +/- 4.84E-003
U-235	1.000	4385.50*	9.08E-002 +/- 6.33E-002	6.05E-002 +/- 6.34E-003
U-238	0.997	4184.40*	9.60E-001 +/- 2.01E-001	3.40E-002 +/- 3.56E-003

AG
6/23/16

0000155054.CNF

Live Time : 10200.000 sec
Real Time : 10700.100 sec
Start : 1:3463.1 (keV)
Stop : 1024:6513.7 (keV)
Acq. Start : Wed Jun 22 15:01:15 2016



ROI Type: 1

ROI Type: 3

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

Sample Title: 15

Elapsed Live time: 10200
 Elapsed Real Time: 10200

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

369: 0 0 0 0 0 0 0 0 1

Sample Title: 15

Channel	1	2	3	4	5	6	7	8	9
377:	0	1	0	1	0	1	0	0	
385:	0	0	0	0	0	0	1	1	
393:	0	1	1	2	1	0	0	1	
401:	2	0	0	0	1	1	1	1	
409:	1	2	0	0	3	3	2	2	
417:	1	2	0	3	0	2	4	2	
425:	4	6	2	1	0	2	4	4	
433:	3	1	2	3	1	5	2	7	
441:	5	4	7	4	2	1	0	0	
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:	0	1	0	0	0	0	0	0	
481:	0	0	0	0	0	0	0	0	
489:	0	1	0	0	0	0	0	0	
497:	0	0	0	0	0	1	0	0	
505:	0	0	0	1	0	0	1	0	
513:	0	0	1	0	0	0	1	0	
521:	1	0	0	1	0	0	0	0	
529:	0	0	0	1	0	0	1	0	
537:	0	0	2	0	0	0	0	0	
545:	0	0	0	1	0	1	0	1	
553:	1	0	0	0	1	0	0	1	
561:	1	2	1	1	1	1	2	0	
569:	2	0	1	2	1	3	2	1	
577:	1	2	1	1	2	2	2	2	
585:	0	5	1	7	1	4	2	3	
593:	3	5	8	9	5	7	9	3	
601:	13	7	8	13	12	12	9	13	
609:	11	11	7	16	9	11	10	11	
617:	12	4	17	12	15	12	12	23	
625:	13	13	5	4	6	6	2	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	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	1	
729:	0	0	0	0	0	0	0	0	
737:	0	0	0	0	0	0	0	0	
745:	0	0	0	0	0	0	1	0	
753:	0	0	0	0	0	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 0

Sample Title: 15

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



QA SUMMARY REPORT

Review Of QA Results - Pulser Check

Date : 6/22/2016
Time : 6:40:03 AM

CHAMBER	DEVICE	PARAMETER	FLAG	DATE
Alpha 001	21f	ALL	Not Done	
Alpha 002	21f	ALL	Not Done	
Alpha 003	21f	ALL	Passed	6/22/2016 6:21:15 AM
Alpha 004	21f	ALL	Passed	6/22/2016 6:21:16 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	6/22/2016 6:21:17 AM
Alpha 011	21f	ALL	Passed	6/22/2016 6:21:18 AM
Alpha 012	21f	ALL	Passed	6/22/2016 6:21:19 AM
Alpha 013	21f	ALL	Not Done	
Alpha 014	21f	ALL	Passed	6/22/2016 6:21:19 AM
Alpha 015	21f	Peak Energy	Action	6/22/2016 6:21:20 AM
Alpha 016	21f	ALL	Not Done	
Alpha 033	Alpha Analyst100DC	ALL	Passed	6/22/2016 6:21:21 AM
Alpha 034	Alpha Analyst100DC	ALL	Passed	6/22/2016 6:21:23 AM
Alpha 035	Alpha Analyst100DC	ALL	Passed	6/22/2016 6:21:25 AM
Alpha 036	Alpha Analyst100DC	ALL	Passed	6/22/2016 6:21:26 AM
Alpha 037	Alpha Analyst100DC	ALL	Passed	6/22/2016 6:21:28 AM
Alpha 038	Alpha Analyst100DC	ALL	Passed	6/22/2016 6:21:30 AM
Alpha 039	Alpha Analyst100DC	ALL	Passed	6/22/2016 6:21:33 AM
Alpha 040	Alpha Analyst100DC	ALL	Passed	6/22/2016 6:21:35 AM
Alpha 041	Alpha Analyst100DC	ALL	Passed	6/22/2016 6:21:37 AM
Alpha 042	Alpha Analyst100DC	ALL	Passed	6/22/2016 6:21:39 AM
Alpha 043	Alpha Analyst100DC	ALL	Passed	6/22/2016 6:21:42 AM
Alpha 044	Alpha Analyst100DC	ALL	Passed	6/22/2016 6:21:45 AM
Alpha 045	Alpha Analyst100DC	ALL	Passed	6/22/2016 6:21:47 AM
Alpha 046	Alpha Analyst100DC	ALL	Passed	6/22/2016 6:21:50 AM
Alpha 047	Alpha Analyst100DC	ALL	Passed	6/22/2016 6:21:52 AM
Alpha 048	Alpha Analyst100DC	ALL	Passed	6/22/2016 6:21:55 AM
Alpha 049	Alpha Analyst100DC	ALL	Passed	6/22/2016 6:21:57 AM
Alpha 050	Alpha Analyst100DC	ALL	Passed	6/22/2016 6:22:00 AM
Alpha 051	Alpha Analyst100DC	ALL	Not Done	
Alpha 052	Alpha Analyst100DC	ALL	Passed	6/22/2016 6:22:03 AM
Alpha 053	Alpha Analyst100DC	Peak FWHM	Action	6/22/2016 6:22:05 AM
Alpha 054	Alpha Analyst100DC	ALL	Passed	6/22/2016 6:22:08 AM
Alpha 055	Alpha Analyst100DC	ALL	Passed	6/22/2016 6:22:11 AM
Alpha 056	Alpha Analyst100DC	ALL	Passed	6/22/2016 6:22:14 AM
Alpha 057	Alpha Analyst100DC	ALL	Passed	6/22/2016 6:22:17 AM
Alpha 058	Alpha Analyst100DC	ALL	Passed	6/22/2016 6:22:20 AM

CHAMBER	DEVICE	PARAMETER	FLAG	DATE
Alpha 059	Alpha Analyst100DC	ALL	Passed	6/22/2016 6:22:23 AM
Alpha 060	Alpha Analyst100DC	ALL	Passed	6/22/2016 6:22:26 AM

APPROVED BY: AG

APPROVAL DATE: 6/22/16

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

Nuclide Library Title: Uranium

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

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

* = key line

TOTALS: 4 Nuclides 4 Energy Lines


SECTION IX
ANALYTICAL DATA (ISOTOPIC THORIUM)

Work Order	16-06040
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-5023 00-02	46	06/02/16 00:00	1.6126E+00
04	DO	CP-5023 00-02	46	06/02/16 00:00	1.5141E+00
05	TRG	CP-5023 02-05	36	06/02/16 00:00	1.5041E+00
06	TRG	CP-5023 05-10	46	06/02/16 00:00	1.5145E+00
07	TRG	CP-5023 10-15	49	06/02/16 00:00	1.5066E+00
08	TRG	CP-5024 00-02	50	06/02/16 00:00	1.5904E+00
09	TRG	CP-5024 02-05	45	06/02/16 00:00	1.5022E+00
10	TRG	CP-5024 05-10	39	06/02/16 00:00	1.6174E+00
11	TRG	CP-5024 10-15	53	06/02/16 00:00	1.5137E+00
12	TRG	CP-5025 00-02	48	06/02/16 00:00	1.5252E+00
13	TRG	CP-5025 02-05	44	06/02/16 00:00	1.5086E+00
14	TRG	CP-5025 05-10	43	06/02/16 00:00	1.5191E+00
15	TRG	CP-5025 10-15	39	06/02/16 00:00	1.5044E+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.


Lab Fraction	Nuclide	Sample Desc	Counting Date/Time	Half-life (days)	Detect	Carrier	Count Time	Counts	Bkg CPM	Eff
01	TH-228	LCS	06/22/16 08:45		A_Spec	Alpha_003	170.02	4.42 E+02	1.20 E-02	16.1
02	TH-228	MBL	06/22/16 08:45		A_Spec	Alpha_004	170.02	4.32 E+00	4.00 E-03	18.8
03	TH-228	DUP	06/22/16 08:45		A_Spec	Alpha_010	170	1.74 E+02	2.30 E-02	19
04	TH-228	DO	06/22/16 08:45		A_Spec	Alpha_011	170	1.39 E+02	1.80 E-02	19.9
05	TH-228	TRG	06/22/16 08:45		A_Spec	Alpha_012	170.02	1.58 E+02	1.30 E-02	19.2
06	TH-228	TRG	06/22/16 08:45		A_Spec	Alpha_014	170.02	1.31 E+02	2.10 E-02	18.2
07	TH-228	TRG	06/22/16 08:46		A_Spec	Alpha_015	170.02	1.91 E+02	4.00 E-03	22.9
08	TH-228	TRG	06/22/16 11:58		A_Spec	Alpha_003	170.02	9.90 E+01	1.20 E-02	16.1
09	TH-228	TRG	06/22/16 11:58		A_Spec	Alpha_004	170.02	1.33 E+02	4.00 E-03	18.8
10	TH-228	TRG	06/22/16 11:58		A_Spec	Alpha_010	170	1.57 E+02	2.30 E-02	19
11	TH-228	TRG	06/22/16 11:58		A_Spec	Alpha_011	170	1.51 E+02	1.80 E-02	19.9
12	TH-228	TRG	06/22/16 11:58		A_Spec	Alpha_012	170.02	1.11 E+02	1.30 E-02	19.2
13	TH-228	TRG	06/22/16 11:58		A_Spec	Alpha_014	170.02	1.37 E+02	2.10 E-02	18.2
14	TH-228	TRG	06/22/16 15:29		A_Spec	Alpha_039	170	5.73 E+01	1.60 E-02	18.6
15	TH-228	TRG	06/22/16 11:59		A_Spec	Alpha_033	170	1.33 E+02	6.00 E-03	17.6


	Run	1
	Analysis Code	THISO
Eberline Analytical Work Order	16-06040	
Client	Auxier & Associates, Inc.	

Preliminary Data Report & Analytical Calculations
Work Order: 16-06040-THISO-1

Eberline Analytical
Oak Ridge Laboratory

Lab Fraction	Nuclide	Sample Desc	Counting Date/Time	Half-life (days)	Detect	Carrier	Count Time	Counts	Bkg CPM	Eff
01	TH-230	LCS	06/22/16 08:45		A_Spec	Alpha_003	170.02	4.79 E+02	1.00 E-03	16.1
02	TH-230	MBL	06/22/16 08:45		A_Spec	Alpha_004	170.02	4.47 E+00	9.00 E-03	18.8
03	TH-230	DUP	06/22/16 08:45		A_Spec	Alpha_010	170	1.75 E+02	6.00 E-03	19
04	TH-230	DO	06/22/16 08:45		A_Spec	Alpha_011	170	1.58 E+02	1.40 E-02	19.9
05	TH-230	TRG	06/22/16 08:45		A_Spec	Alpha_012	170.02	1.67 E+02	6.00 E-03	19.2
06	TH-230	TRG	06/22/16 08:45		A_Spec	Alpha_014	170.02	1.33 E+02	1.40 E-02	18.2
07	TH-230	TRG	06/22/16 08:46		A_Spec	Alpha_015	170.02	1.89 E+02	3.00 E-03	22.9
08	TH-230	TRG	06/22/16 11:58		A_Spec	Alpha_003	170.02	1.25 E+02	4.00 E-03	16.1
09	TH-230	TRG	06/22/16 11:58		A_Spec	Alpha_004	170.02	1.33 E+02	9.00 E-03	18.8
10	TH-230	TRG	06/22/16 11:58		A_Spec	Alpha_010	170	1.87 E+02	6.00 E-03	19
11	TH-230	TRG	06/22/16 11:58		A_Spec	Alpha_011	170	1.49 E+02	1.40 E-02	19.9
12	TH-230	TRG	06/22/16 11:58		A_Spec	Alpha_012	170.02	1.32 E+02	6.00 E-03	19.2
13	TH-230	TRG	06/22/16 11:58		A_Spec	Alpha_014	170.02	1.34 E+02	1.40 E-02	18.2
14	TH-230	TRG	06/22/16 15:29		A_Spec	Alpha_039	170	5.31 E+01	1.10 E-02	18.6
15	TH-230	TRG	06/22/16 11:59		A_Spec	Alpha_033	170	1.46 E+02	3.00 E-03	17.6

	Run	1
	Analysis Code	THISO
Eberline Analytical Work Order	16-06040	
Client	Auxier & Associates, Inc.	

	Run	1	THISO Analysis Code	16-06040 Eberline Analytical Work Order	Auxier & Associates, Inc. Client
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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	5.52E+00	8.41E-01	5.33E-02	4.74E+00	116.43	OK		OK	
02	TH-232	MBL	BLANK	pCi/g	1.42E-03	1.98E-02	5.66E-02					OK	OK
03	TH-232	DUP	CP-5023 00-02	pCi/g	9.24E-01	2.07E-01	4.25E-02				INV	OK	
04	TH-232	DO	CP-5023 00-02	pCi/g	1.20E+00	2.71E-01	5.13E-02					OK	
05	TH-232	TRG	CP-5023 02-05	pCi/g	1.17E+00	2.71E-01	3.55E-02					OK	
06	TH-232	TRG	CP-5023 05-10	pCi/g	1.26E+00	2.87E-01	5.96E-02					OK	
07	TH-232	TRG	CP-5023 10-15	pCi/g	9.39E-01	1.96E-01	2.86E-02					OK	
08	TH-232	TRG	CP-5024 00-02	pCi/g	8.23E-01	2.07E-01	3.34E-02					OK	
09	TH-232	TRG	CP-5024 02-05	pCi/g	1.14E+00	2.75E-01	5.48E-02					OK	
10	TH-232	TRG	CP-5024 05-10	pCi/g	1.43E+00	3.07E-01	4.89E-02					OK	
11	TH-232	TRG	CP-5024 10-15	pCi/g	1.08E+00	2.45E-01	4.88E-02					OK	
12	TH-232	TRG	CP-5025 00-02	pCi/g	1.15E+00	2.78E-01	3.84E-02					OK	
13	TH-232	TRG	CP-5025 02-05	pCi/g	1.07E+00	2.44E-01	5.44E-02					OK	
14	TH-232	TRG	CP-5025 05-10	pCi/g	1.30E+00	4.72E-01	1.70E-01					OK	
15	TH-232	TRG	CP-5025 10-15	pCi/g	1.26E+00	2.92E-01	3.73E-02					OK	

Lab Fraction	Nuclide	Sample Desc	Counting Date/Time	Half-life (days)	Detect	Carrier	Count Time	Counts	Bkg CPM	Eff
01	TH-232	LCS	06/22/16 08:45		A_Spec	Alpha_003	170.02	4.33 E+02	1.00 E-03	16.1
02	TH-232	MBL	06/22/16 08:45		A_Spec	Alpha_004	170.02	1.50 E-01	5.00 E-03	18.8
03	TH-232	DUP	06/22/16 08:45		A_Spec	Alpha_010	170	1.37 E+02	6.00 E-03	19
04	TH-232	DO	06/22/16 08:45		A_Spec	Alpha_011	170	1.47 E+02	6.00 E-03	19.9
05	TH-232	TRG	06/22/16 08:45		A_Spec	Alpha_012	170.02	1.38 E+02	1.00 E-03	19.2
06	TH-232	TRG	06/22/16 08:45		A_Spec	Alpha_014	170.02	1.50 E+02	9.00 E-03	18.2
07	TH-232	TRG	06/22/16 08:46		A_Spec	Alpha_015	170.02	1.57 E+02	2.00 E-03	22.9
08	TH-232	TRG	06/22/16 11:58		A_Spec	Alpha_003	170.02	1.03 E+02	1.00 E-03	16.1
09	TH-232	TRG	06/22/16 11:58		A_Spec	Alpha_004	170.02	1.24 E+02	5.00 E-03	18.8
10	TH-232	TRG	06/22/16 11:58		A_Spec	Alpha_010	170	1.84 E+02	6.00 E-03	19
11	TH-232	TRG	06/22/16 11:58		A_Spec	Alpha_011	170	1.40 E+02	6.00 E-03	19.9
12	TH-232	TRG	06/22/16 11:58		A_Spec	Alpha_012	170.02	1.25 E+02	1.00 E-03	19.2
13	TH-232	TRG	06/22/16 11:58		A_Spec	Alpha_014	170.02	1.40 E+02	9.00 E-03	18.2
14	TH-232	TRG	06/22/16 15:29		A_Spec	Alpha_039	170	5.81 E+01	1.10 E-02	18.6
15	TH-232	TRG	06/22/16 11:59		A_Spec	Alpha_033	170	1.41 E+02	1.00 E-03	17.6

	1 Run	THISO Analysis Code	16-06040 Eberline Analytical Work Order	Auxier & Associates, Inc. Client
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Internal Work Order		Run		Analysis Code		Date		Technician		Technician Initials		Witness Initials	
16-06040		1		THISO		6/16/2016 9:01		JPACHELLA		<i>[Signature]</i>			
LCS & Matrix Spikes													
Isotope	Sol #	Activity dpm/g	Solution Date	Approx Addition	LCS Volume Used (g)	MS Volume Used (g)	LCSD Volume Used (g)	MSD Volume Used (g)	LCS Known pCi	MS Error Estimate	Added pCi	LCSD Known pCi	MSD Error Estimate
Th-228	Th-8b	103.560	6/16/2016	0.100	0.1017				4.74	0.171	0.00	0.00	0.000
Th-230	Th-1b	23.520	6/16/2016	0.500	0.5044				5.34	0.144	0.00	0.00	0.000
Th-232	Th-8b	103.560	6/16/2016	0.100	0.1017				4.74	0.171	0.00	0.00	0.000
16-99 MS		C-2a		22043.636		7/5/2014		0.1					

Balance Printer Tapes														
Tracers														
fraction	Isotope	Sol #	Activity dpm/g	Solution Date	Volume Used (g)	Approx Addition	Tracer							LCS
01	Th-229	Th-18a	22.460	6/16/2016	0.4585	0.2200								
02	Th-229	Th-18a	22.460	6/16/2016	0.2230	0.2200								
03	Th-229	Th-18a	22.460	6/16/2016	0.2288	0.2200								
04	Th-229	Th-18a	22.460	6/16/2016	0.2221	0.2200								
05	Th-229	Th-18a	22.460	6/16/2016	0.2210	0.2200								
06	Th-229	Th-18a	22.460	6/16/2016	0.2224	0.2200								
07	Th-229	Th-18a	22.460	6/16/2016	0.2220	0.2200								
08	Th-229	Th-18a	22.460	6/16/2016	0.2220	0.2200								
09	Th-229	Th-18a	22.460	6/16/2016	0.2228	0.2200								
10	Th-229	Th-18a	22.460	6/16/2016	0.2232	0.2200								
11	Th-229	Th-18a	22.460	6/16/2016	0.2296	0.2200								
12	Th-229	Th-18a	22.460	6/16/2016	0.2231	0.2200								
13	Th-229	Th-18a	22.460	6/16/2016	0.2236	0.2200								
14	Th-229	Th-18a	22.460	6/16/2016	0.2236	0.2200								
15	Th-229	Th-18a	22.460	6/16/2016	0.2237	0.2200								
Matrix Spike														

Aliquot Worksheet

Work Order		Run		Analysis Code		Rpt Units		Lab Deadline		Technician	
16-06040		1		THISO		grams		6/29/2016		JPACHELLA	

Lab Fraction	Auxier & Associates, Inc.		Sample		Muffle Data		Dilution Data			Aliquot Data		MS Aliquot Data		H-3 Solids Only	
	Client ID	LCS	Type		Ratio Post/Pre		No of Dils	Dil Factor	Ratio	Aliquot	Net Equiv	Aliquot	Net Equiv	Water Added (ml)	H3 Dist Aliq
01	LCS		LCS							1.0000E+00	1.0000E+00				
02	BLANK		MBL							1.5000E+00	1.5000E+00				
03	CP-5023 00-02		DUP							1.6126E+00	1.6126E+00				
04	CP-5023 00-02		DO							1.5141E+00	1.5141E+00				
05	CP-5023 02-05		TRG							1.5041E+00	1.5041E+00				
06	CP-5023 05-10		TRG							1.5145E+00	1.5145E+00				
07	CP-5023 10-15		TRG							1.5066E+00	1.5066E+00				
08	CP-5024 00-02		TRG							1.5904E+00	1.5904E+00				
09	CP-5024 02-05		TRG							1.5022E+00	1.5022E+00				
10	CP-5024 05-10		TRG							1.6174E+00	1.6174E+00				
11	CP-5024 10-15		TRG							1.5137E+00	1.5137E+00				
12	CP-5025 00-02		TRG							1.5252E+00	1.5252E+00				
13	CP-5025 02-05		TRG							1.5086E+00	1.5086E+00				
14	CP-5025 05-10		TRG							1.5191E+00	1.5191E+00				
15	CP-5025 10-15		TRG							1.5044E+00	1.5044E+00				

Comments

Technician: JPachella Date: 6/16/16

Rough Sample Preparation
Log Book

Work Order		Lab Deadline	Date Received in Prep		Date Sealed		Date Returned		Technician		
16-06040		6/29/2016	6/14/2016		6/15/2016		6/16/2016		KSALLINGS		
Bico Pulverizer SN: 000302											
Eberline Fraction	Auxier & Associates, Inc. Client ID	Tare (g) Pan Wt	Gross (g)		Net (g)		Percent		Gamma		Special Info
			Wet Wt.	Dry Wt.	Wet Wt.	Dry Wt.	Liquid	Solid	Dry Wt.	LEPS Wt.	
04	CP-5023 00-02	14.6100	581.6600	491.7800	567.0500	477.1700	15.85%	84.15%	0.0000	0.0000	
05	CP-5023 02-05	14.6000	653.5100	541.0500	638.9100	526.4500	17.60%	82.40%	0.0000	0.0000	
06	CP-5023 05-10	14.5500	560.3300	457.6900	545.7800	443.1400	18.81%	81.19%	0.0000	0.0000	
07	CP-5023 10-15	14.5700	530.6800	415.7200	516.1100	401.1500	22.27%	77.73%	0.0000	0.0000	
08	CP-5024 00-02	14.6100	540.2500	461.7000	525.6400	447.0900	14.94%	85.06%	0.0000	0.0000	
09	CP-5024 02-05	14.5700	563.9600	469.5400	549.3900	454.9700	17.19%	82.81%	0.0000	0.0000	
10	CP-5024 05-10	14.5600	506.9900	412.4400	492.4300	397.8800	19.20%	80.80%	0.0000	0.0000	
11	CP-5024 10-15	14.5600	436.9300	339.2500	422.3700	324.6900	23.13%	76.87%	0.0000	0.0000	
12	CP-5025 00-02	14.5500	844.7800	720.3600	830.2300	705.8100	14.99%	85.01%	0.0000	0.0000	
13	CP-5025 02-05	14.6300	700.9000	582.5100	686.2700	567.8800	17.25%	82.75%	0.0000	0.0000	
14	CP-5025 05-10	14.6000	556.1100	454.1200	541.5100	439.5200	18.83%	81.17%	0.0000	0.0000	
15	CP-5025 10-15	14.6000	479.2300	374.1000	464.6300	359.5000	22.63%	77.37%	0.0000	0.0000	
Comments											
Special Codes											
H: Hot, O: Organic Hazard, P: PCB Hazard, R: Rush, T: Other (see comments)											

Technician: *Kenny Scaggs*

Date Analysis: Rough Prep Logbook

Analysis: THISO Page No. 9692



Sample Description: SPIKE
 Spectrum File: \\OR-ALPHA\Canberra\ApexAlpha\Root\Data\00001551
 Batch Identification: 1606040A-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: 6/22/2016 7:51:30 AM
 Acquisition Date/Time: 6/22/2016 8:45:54 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
 Tracer Quantity: 0.458 mL
 Effective Efficiency: 0.2076 +/- 0.0127
 Counting Efficiency: 0.1612 +/- 0.0029 on 12/11/2015 2:46:09 PM
 Chem. Recovery Factor: 1.2877 +/- 0.0819

Control Certificate Name: NatTh_Th-8
 Chem. Recov. of Control: TH-232 0.234758 +/- 0.019553
 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	5.818	5.47	96.55	1.53	0.00E+000	6.0
TH-228	5.361	441.96	9.35	2.04	0.00E+000	23.0
TH-229 T	4.877	363.47	10.31	1.53	0.00E+000	22.7
TH-230	4.639	478.83	8.96	0.17	0.00E+000	22.6
TH-232	3.947	432.83	9.42	0.17	0.00E+000	25.5

T = Tracer Peak used for Effective Efficiency

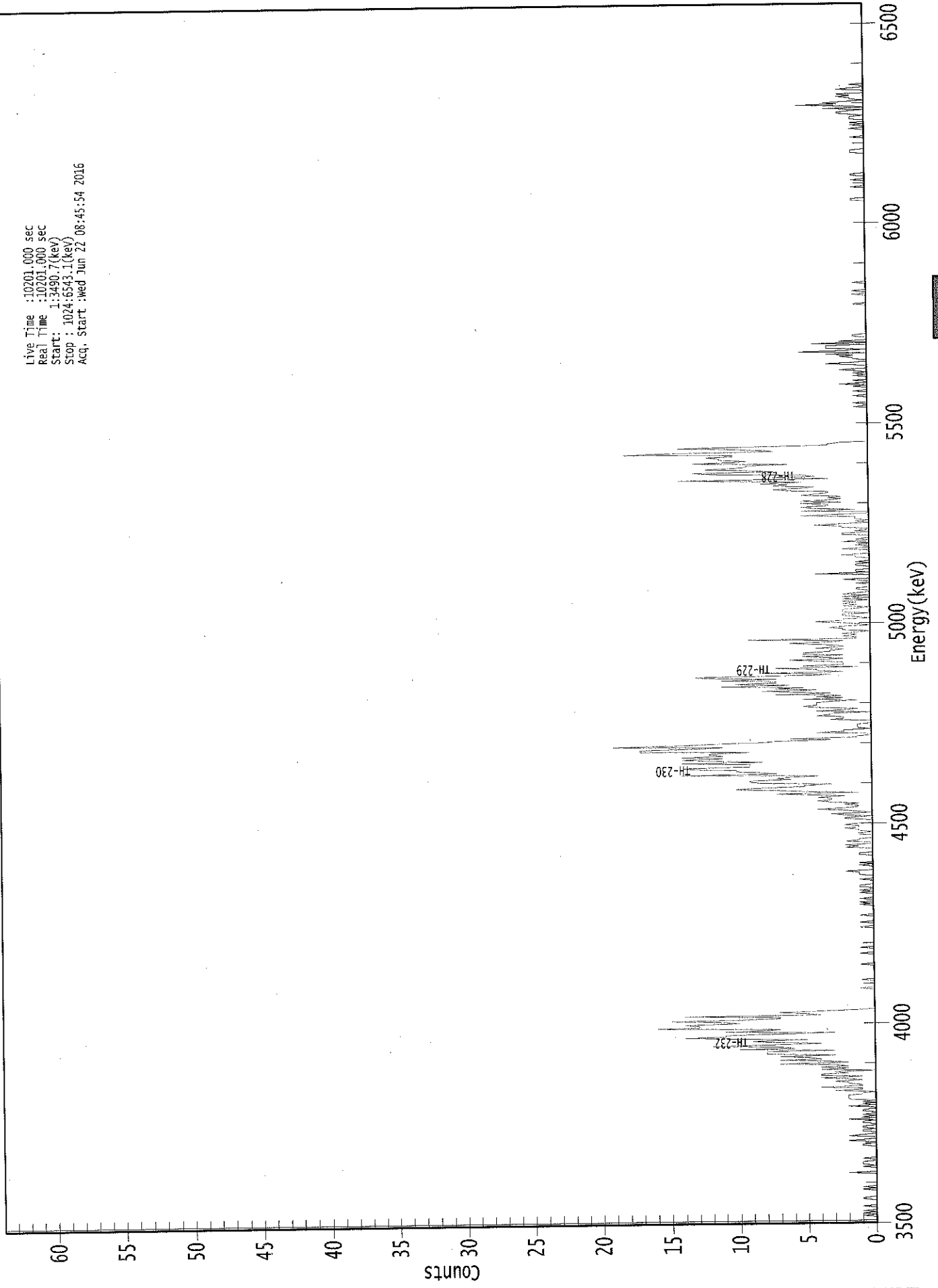
 ----- NUCLIDE ANALYSIS RESULTS -----

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.995	5850.00*	7.16E-002 +/- 6.97E-002	9.30E-002 +/- 1.11E-002
TH-228	0.992	5400.00*	5.64E+000 +/- 8.57E-001	9.95E-002 +/- 1.19E-002
TH-229	1.000	4872.00*	4.66E+000 +/- 5.58E-001	9.12E-002 +/- 1.09E-002
TH-230	0.994	4672.00*	6.12E+000 +/- 9.15E-001	5.34E-002 +/- 6.38E-003
TH-232	0.987	3997.00*	5.52E+000 +/- 8.41E-001	5.33E-002 +/- 6.37E-003

AG
6/23/16

0000154980.CNF

Live Time :10201.000 sec
Real Time :10201.000 sec
Start: 1:3490.7(kev)
Stop : 1024:6543.1(kev)
Acq. Start :Wed Jun 22 08:45:54 2016



ROI Type: 3

ROI Type: 1

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

Sample Title: 01

Elapsed Live time: 10201
 Elapsed Real Time: 10201

Channel	10201	10201	0	0	0	0	1	0
1:	10201	10201	0	0	0	0	1	0
9:	1	0	1	0	0	0	1	0
17:	0	0	0	0	1	1	0	0
25:	0	0	0	0	1	0	1	0
33:	0	0	0	0	0	0	0	0
41:	0	0	2	0	0	0	0	1
49:	0	1	1	1	0	0	1	0
57:	0	0	0	0	0	0	0	0
65:	0	1	1	0	0	2	1	0
73:	0	2	1	0	0	1	1	0
81:	1	1	0	0	1	1	0	2
89:	0	1	0	1	0	0	1	1
97:	0	0	2	0	1	0	1	0
105:	2	2	2	2	1	1	0	3
113:	1	1	4	1	1	2	2	3
121:	1	2	4	1	4	4	2	3
129:	0	4	2	4	2	3	7	2
137:	3	7	4	5	7	3	8	8
145:	8	3	10	6	7	12	7	4
153:	8	9	5	10	14	11	11	8
161:	3	11	8	7	16	13	13	14
169:	10	11	15	10	7	7	14	4
177:	5	7	4	1	0	0	0	0
185:	0	0	0	0	0	0	0	0
193:	0	0	0	0	0	1	0	0
201:	0	0	0	0	1	0	0	0
209:	0	0	0	0	0	0	0	0
217:	0	1	0	0	0	0	0	0
225:	0	0	1	0	0	0	0	1
233:	0	0	0	0	0	0	0	0
241:	0	0	0	0	0	0	0	0
249:	1	0	0	0	1	0	0	0
257:	0	0	1	0	0	0	0	0
265:	0	0	0	1	0	1	0	0
273:	1	0	0	0	0	1	0	1
281:	0	0	1	1	0	0	0	0
289:	1	0	0	0	1	1	1	2
297:	0	0	0	0	1	0	1	0
305:	0	0	0	0	0	1	1	0
313:	0	0	0	2	1	2	0	0
321:	2	1	1	0	0	0	1	1
329:	0	1	1	2	1	1	2	1
337:	0	0	0	2	2	0	2	3
345:	0	1	2	4	2	1	1	2
353:	1	3	4	3	3	4	2	4
361:	7	1	5	7	10	9	5	5

369: 3 8 9 9 6 7 6 4

Sample Title: 01

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

Sample Title: 01

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

VB
6/22/16

Apex-Alpha™

Sample Description: BLANK
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001549
 Batch Identification: 1606040A-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: 6/22/2016 7:51:30 AM
 Acquisition Date/Time: 6/22/2016 8:45:55 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
 Tracer Quantity: 0.223 mL
 Effective Efficiency: 0.1867 +/- 0.0159
 Counting Efficiency: 0.1879 +/- 0.0033 on 12/11/2015 2:46:10 PM
 Chem. Recovery Factor: 0.9938 +/- 0.0866

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	5.704	0.32	647.05	0.68	0.00E+000	2.9
TH-228	5.275	4.32	102.62	0.68	0.00E+000	2.9
TH-229 T	4.900	158.98	15.60	1.02	0.00E+000	5.1
TH-230	4.662	4.47	109.71	1.53	0.00E+000	2.9
TH-232	3.951	0.15	1398.5	0.85	0.00E+000	2.9

T = Tracer Peak used for Effective Efficiency

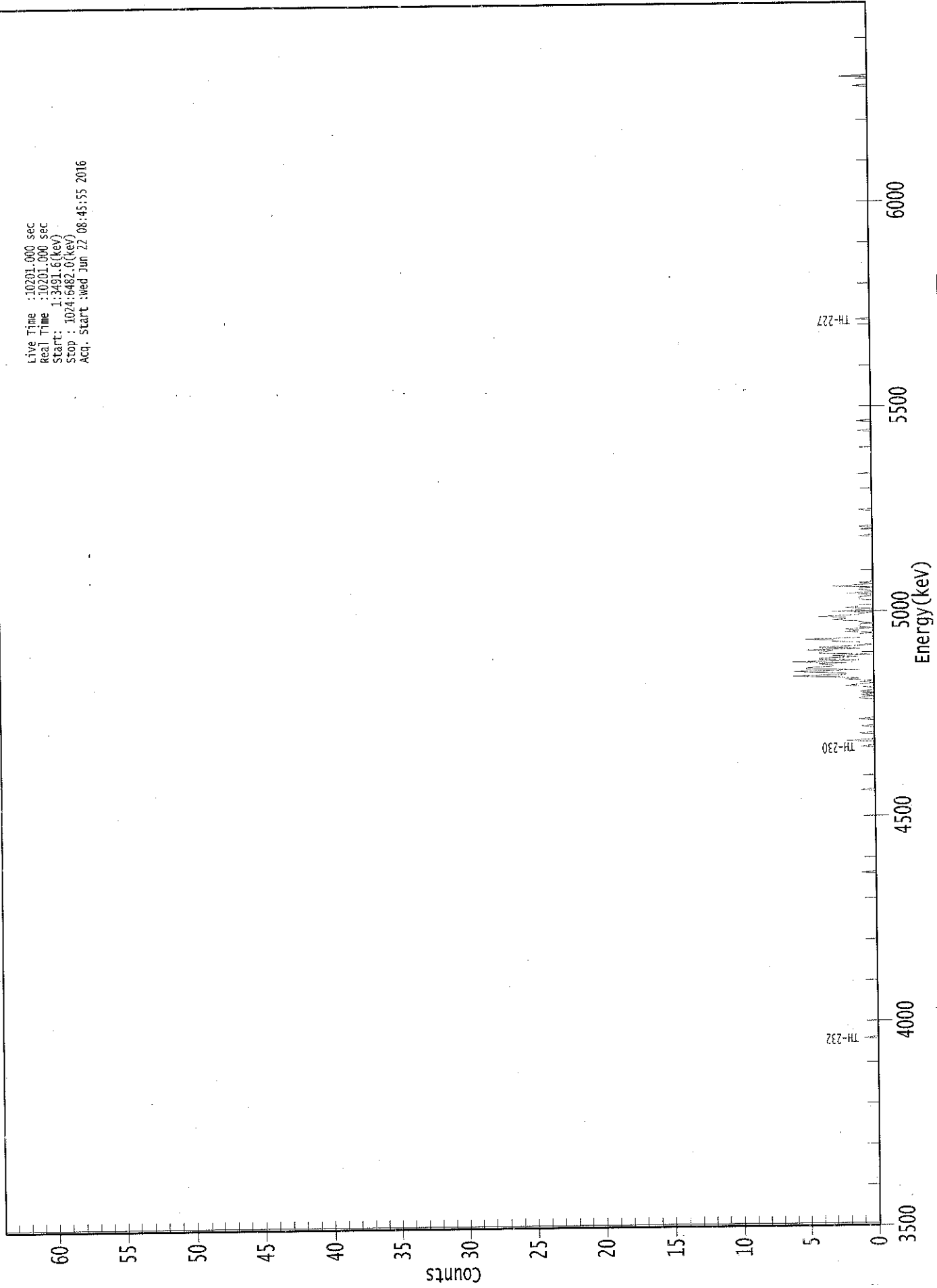
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.895	5850.00*	3.10E-003 +/- 2.01E-002	5.47E-002 +/- 9.16E-003
TH-228	0.921	5400.00*	4.09E-002 +/- 4.25E-002	5.34E-002 +/- 8.94E-003
TH-229	0.996	4872.00*	1.51E+000 +/- 2.53E-001	5.99E-002 +/- 1.00E-002
TH-230	0.999	4672.00*	4.24E-002 +/- 4.70E-002	6.74E-002 +/- 1.13E-002
TH-232	0.989	3997.00*	1.42E-003 +/- 1.98E-002	5.66E-002 +/- 9.48E-003

AG
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0000154981.CNF

Live Time :10201.000 sec
Real Time :10201.000 sec
Start: 1:3491.6(kev)
Stop : 1024:6482.0(kev)
Acq. Start :Wed Jun 22 08:45:55 2016



ROI Type: 1

ROI Type: 3

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

Sample Title: 02

Elapsed Live time: 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	0	0	0	0
153:	0	0	0	0	0	1	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	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	0	0	0
281:	0	0	0	0	0	0	0	0
289:	0	0	0	0	0	0	0	1
297:	0	0	0	0	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	0	0	0	0
345:	0	0	0	0	0	0	0	0
353:	0	0	0	0	0	0	0	0
361:	0	0	0	0	1	0	0	0

369: 0 0 0 0 0 0 0 0 0

Sample Title: 02

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

801: 0 0 0 0 0 0 0 0

Sample Title: 02

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

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Apex-Alpha™

Sample Description: CP-5023 00-02 DUP
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001549
 Batch Identification: 1606040A-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: 1.613E+000 +/- 0.000E+000 gram
 Sample Date/Time: 6/2/2016 7:51:30 AM
 Acquisition Date/Time: 6/22/2016 8:45:56 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: 0.2436 +/- 0.0184
 Counting Efficiency: 0.1895 +/- 0.0033 on 12/11/2015 2:46:10 PM
 Chem. Recovery Factor: 1.2852 +/- 0.0995

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	5.891	12.47	59.35	1.53	0.00E+000	2.9
TH-228	5.376	174.09	15.05	3.91	0.00E+000	23.4
TH-229 T	4.881	212.81	13.48	1.19	0.00E+000	6.8
TH-230	4.637	174.98	14.87	1.02	0.00E+000	14.6
TH-232	3.968	136.98	16.82	1.02	0.00E+000	7.1

T = Tracer Peak used for Effective Efficiency

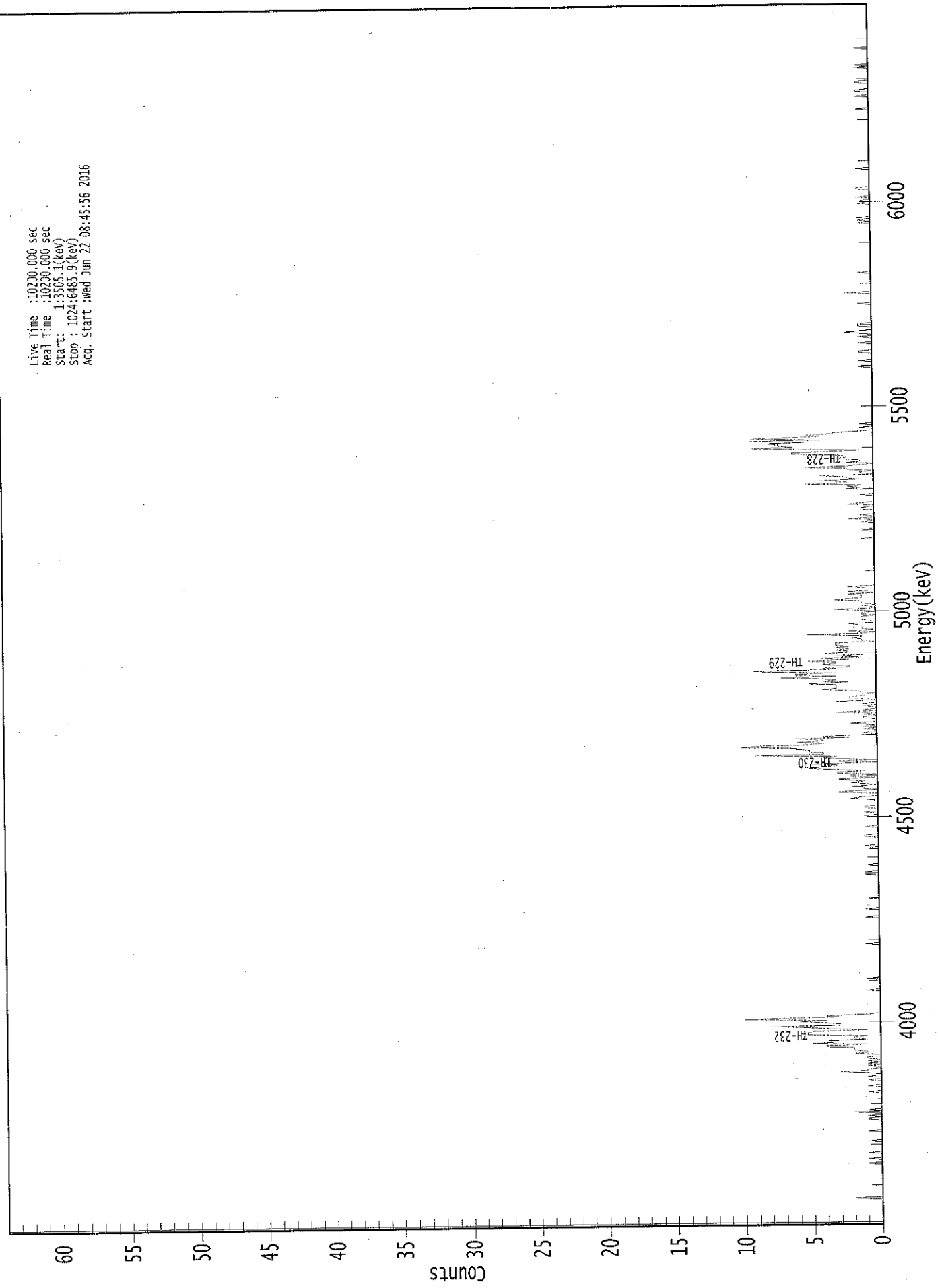
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.991	5850.00*	8.64E-002 +/- 5.29E-002	4.93E-002 +/- 7.28E-003
TH-228	0.997	5400.00*	1.20E+000 +/- 2.53E-001	6.71E-002 +/- 9.92E-003
TH-229	1.000	4872.00*	1.44E+000 +/- 2.13E-001	4.47E-002 +/- 6.60E-003
TH-230	0.994	4672.00*	1.18E+000 +/- 2.48E-001	4.26E-002 +/- 6.29E-003
TH-232	0.996	3997.00*	9.24E-001 +/- 2.07E-001	4.25E-002 +/- 6.28E-003

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0000154982.CNF

Live Time :10200.000 sec
Real Time :10200.000 sec
Start: 1:3305.1(kev)
Stop : 1024:6485.9(kev)
Acq. Start :Wed Jun 22 08:45:56 2016



ROI Type: 3

ROI Type: 1

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

Sample Title: 03

Elapsed Live time: 10200
 Elapsed Real Time: 10200

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

369: 0 1 2 1 2 3 0 2

Sample Title: 03

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

801: 0 0 0 0 0 0 0 0 0

Sample Title: 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	1	0	1	0	0	0	0
849:	0	0	0	0	0	0	0	1
857:	0	1	0	0	1	0	0	0
865:	0	0	0	1	1	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	1	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	1	0
937:	0	0	0	0	0	0	0	0
945:	0	1	0	0	0	1	1	0
953:	0	0	0	0	1	1	0	0
961:	0	0	0	0	0	0	0	0
969:	0	1	0	1	0	0	0	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™

LCB
6/22/16

Sample Description: CP-5023 00-02
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001549
 Batch Identification: 1606040A-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: 1.514E+000 +/- 0.000E+000 gram
 Sample Date/Time: 6/2/2016 7:51:30 AM
 Acquisition Date/Time: 6/22/2016 8:45:57 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
 Tracer Quantity: 0.222 mL
 Effective Efficiency: 0.2148 +/- 0.0173
 Counting Efficiency: 0.1989 +/- 0.0034 on 12/11/2015 2:46:14 PM
 Chem. Recovery Factor: 1.0800 +/- 0.0892

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	5.864	12.11	63.70	2.89	0.00E+000	2.6
TH-228	5.369	138.94	16.84	3.06	0.00E+000	3.3
TH-229 T	4.877	182.13	14.61	1.87	0.00E+000	4.6
TH-230	4.620	157.62	15.75	2.38	0.00E+000	6.1
TH-232	3.959	146.98	16.23	1.02	0.00E+000	3.9

T = Tracer Peak used for Effective Efficiency

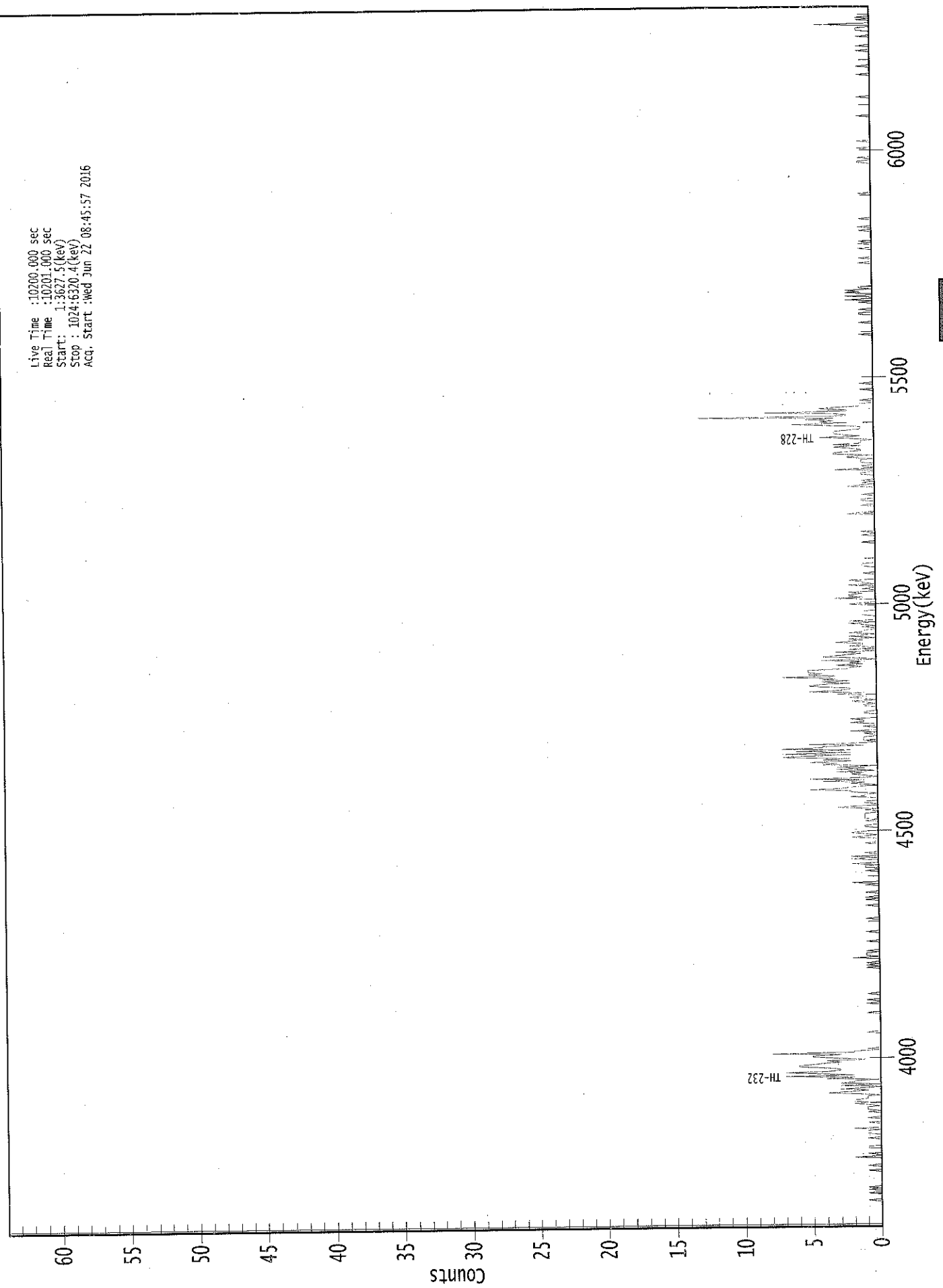
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.999	5850.00*	1.01E-001 +/- 6.65E-002	7.33E-002 +/- 1.16E-002
TH-228	0.995	5400.00*	1.16E+000 +/- 2.67E-001	7.43E-002 +/- 1.18E-002
TH-229	1.000	4872.00*	1.49E+000 +/- 2.36E-001	6.20E-002 +/- 9.81E-003
TH-230	0.986	4672.00*	1.29E+000 +/- 2.87E-001	6.69E-002 +/- 1.06E-002
TH-232	0.992	3997.00*	1.20E+000 +/- 2.71E-001	5.13E-002 +/- 8.12E-003

AC
6/23/16

0000154983.CNF

Live Time :10200.000 sec
Real Time :10201.000 sec
Start : 1:3827.5(keV)
Stop : 1024:6320.4(keV)
Acq. Start :Wed Jun 22 08:45:57 2016



ROI Type: 1

ROI Type: 3

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

Sample Title: 04

Elapsed Live time: 10200

Elapsed Real Time: 10201

Channel	10201	10200	0	0	0	0	0	0	0
1:	10201	10200	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	1	0
25:	0	0	0	0	1	0	0	0	1
33:	0	1	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0	1
49:	0	0	0	1	0	0	0	0	0
57:	0	0	2	0	0	1	0	0	0
65:	0	0	1	1	0	0	0	0	0
73:	0	0	1	0	0	0	0	1	1
81:	1	0	2	0	0	0	0	0	1
89:	0	0	0	1	0	0	0	0	0
97:	1	0	1	1	1	0	1	1	2
105:	1	2	2	1	1	1	0	0	2
113:	4	2	1	3	1	0	3	3	0
121:	3	2	2	0	4	2	7	7	2
129:	4	7	4	3	3	4	6	6	6
137:	5	4	3	4	1	3	5	5	5
145:	3	8	2	2	0	1	0	0	0
153:	0	0	0	0	0	0	0	0	0
161:	0	0	0	1	0	0	0	0	0
169:	0	0	0	0	0	0	0	0	0
177:	0	0	0	1	0	0	0	0	0
185:	0	0	0	1	0	0	1	0	0
193:	0	0	0	1	0	0	0	0	0
201:	0	0	0	0	0	0	0	0	0
209:	0	0	0	0	0	0	0	0	0
217:	0	1	0	1	0	1	0	0	0
225:	0	2	0	1	1	1	0	0	1
233:	0	0	0	0	0	0	0	0	1
241:	0	0	0	0	0	0	0	0	1
249:	0	0	0	0	0	0	0	0	0
257:	0	0	1	0	0	0	0	0	0
265:	0	0	0	0	0	1	0	0	0
273:	0	0	1	0	1	0	0	0	0
281:	1	0	0	0	0	0	1	0	0
289:	2	0	0	0	0	0	0	0	0
297:	0	0	1	0	0	1	1	0	0
305:	2	0	0	0	2	0	2	0	0
313:	0	1	0	0	0	0	0	0	0
321:	0	1	0	0	0	0	2	1	1
329:	0	1	2	1	0	0	0	1	1
337:	1	0	0	0	1	0	1	1	1
345:	1	1	1	0	0	1	0	0	3
353:	2	0	0	1	1	0	0	0	0
361:	2	1	1	0	2	2	5	3	3

369: 2 1 0 2 1 4 1 5

Sample Title: 04

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

801: 0 0 0 0 0 0 0 0 1

Sample Title: 04

Channel								
809:	0	0	0	1	0	0	0	0
817:	0	0	0	1	0	0	0	1
825:	0	1	0	0	0	0	0	0
833:	0	0	1	0	0	1	0	0
841:	0	0	0	0	1	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	1	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	1	0	0	1
897:	0	0	0	0	0	0	0	1
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	1	0	0	0	0	0
937:	0	0	0	0	0	0	0	0
945:	0	0	1	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	1	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	1	0	0	0	1	0	0
993:	0	0	0	0	0	1	0	0
1001:	0	0	1	1	1	0	0	4
1009:	0	0	0	1	0	1	0	0
1017:	0	0	0	0	0	0	0	3

KS
6/22/16

Apex-Alpha™

Sample Description: CP-5023 02-05
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001549
 Batch Identification: 1606040A-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: 1.504E+000 +/- 0.000E+000 gram
 Sample Date/Time: 6/2/2016 7:51:30 AM
 Acquisition Date/Time: 6/22/2016 8:45:58 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
 Tracer Quantity: 0.221 mL
 Effective Efficiency: 0.2074 +/- 0.0170
 Counting Efficiency: 0.1919 +/- 0.0033 on 12/11/2015 2:46:15 PM
 Chem. Recovery Factor: 1.0802 +/- 0.0905

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	5.895	5.13	103.36	1.87	0.00E+000	3.0
TH-228	5.381	157.79	15.73	2.21	0.00E+000	11.2
TH-229 T	4.883	174.98	14.87	1.02	0.00E+000	3.4
TH-230	4.644	166.98	15.22	1.02	0.00E+000	9.0
TH-232	3.975	137.83	16.71	0.17	0.00E+000	7.7

T = Tracer Peak used for Effective Efficiency

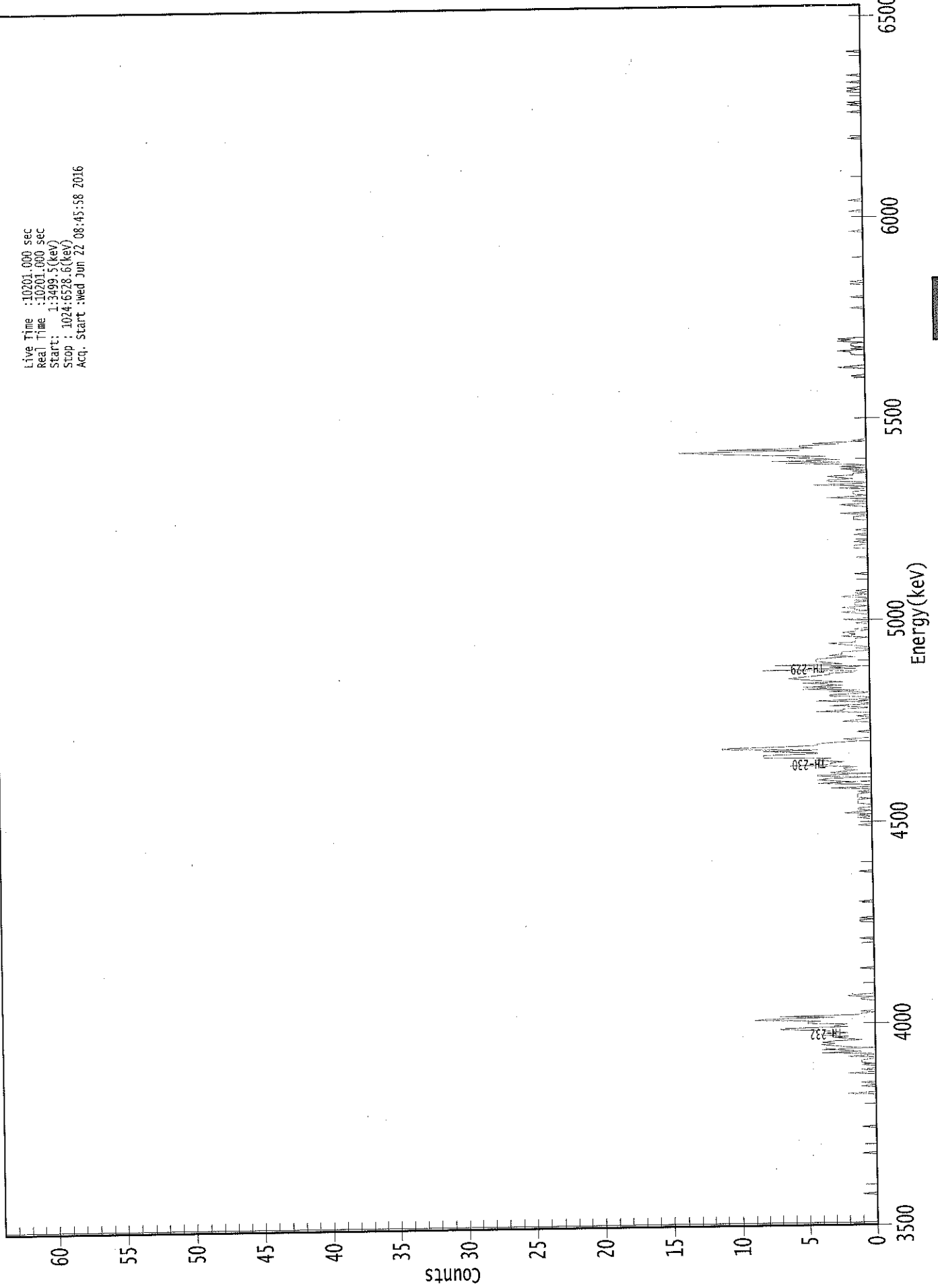
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.990	5850.00*	4.48E-002 +/- 4.68E-002	6.61E-002 +/- 1.06E-002
TH-228	0.998	5400.00*	1.37E+000 +/- 3.08E-001	6.93E-002 +/- 1.11E-002
TH-229	0.999	4872.00*	1.49E+000 +/- 2.40E-001	5.38E-002 +/- 8.64E-003
TH-230	0.996	4672.00*	1.42E+000 +/- 3.14E-001	5.36E-002 +/- 8.61E-003
TH-232	0.997	3997.00*	1.17E+000 +/- 2.71E-001	3.55E-002 +/- 5.69E-003

AG
6/23/16

0000154984.CNF

Live Time : 10201.000 sec
Real Time : 10201.000 sec
Start : 1:34:09.5(keV)
Stop : 1024:6528.6(keV)
Acq. Start : Wed Jun 22 08:45:58 2016



ROI Type: 3

ROI Type: 1

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

Sample Title: 05

Elapsed Live time: 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	1	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	1	0	0	0
65:	0	0	0	0	0	0	0	0
73:	0	0	0	0	0	0	0	0
81:	0	0	1	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	2	0
113:	0	0	0	0	1	0	0	1
121:	0	0	0	0	0	0	0	2
129:	0	0	1	0	0	0	1	0
137:	1	1	1	0	0	2	0	0
145:	4	1	2	4	0	2	3	4
153:	3	4	3	1	2	3	2	4
161:	4	2	3	4	7	7	2	3
169:	2	5	5	4	9	8	3	7
177:	1	1	0	1	0	0	0	0
185:	0	0	0	0	0	1	1	0
193:	2	1	0	0	0	0	0	0
201:	0	0	0	0	0	0	0	0
209:	0	0	0	0	0	0	0	1
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:	1	0	0	0	0	0	0	0
249:	0	0	0	0	0	0	1	1
257:	0	1	0	0	0	0	0	0
265:	0	0	0	0	0	0	0	1
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	1
337:	0	0	0	0	0	1	0	1
345:	0	2	1	0	1	1	0	0
353:	0	1	1	1	1	0	1	1
361:	1	1	0	1	0	0	3	0

369: 0 1 4 1 3 4 3 0

Sample Title: 05

Channel	1	2	3	4	5	6	7	8
377:	4	4	0	3	2	1	2	2
385:	1	6	3	3	2	4	4	3
393:	8	8	8	4	4	8	4	11
401:	11	6	4	4	3	1	1	2
409:	0	0	0	0	0	1	0	0
417:	0	0	0	0	0	0	2	1
425:	0	0	1	0	0	0	4	2
433:	2	0	1	3	0	0	1	4
441:	1	0	0	3	3	1	0	3
449:	1	5	2	5	2	3	5	2
457:	4	5	6	5	4	3	3	1
465:	1	8	1	3	0	7	2	3
473:	4	4	4	3	1	3	2	2
481:	2	0	0	1	0	1	2	3
489:	1	1	1	1	0	2	1	1
497:	2	1	0	1	0	0	0	0
505:	1	0	0	2	0	0	0	0
513:	1	2	0	1	1	2	0	1
521:	1	1	0	1	0	0	2	1
529:	0	1	0	1	0	0	0	0
537:	0	0	0	0	0	0	0	0
545:	0	1	0	0	0	0	0	0
553:	0	0	0	0	0	0	0	1
561:	0	0	0	0	0	0	0	1
569:	1	1	0	0	1	0	0	0
577:	0	0	1	0	0	0	1	0
585:	0	0	0	0	0	0	0	1
593:	1	1	0	0	2	0	0	0
601:	0	0	1	2	0	0	1	0
609:	0	3	1	0	1	1	1	0
617:	0	2	0	1	4	0	0	3
625:	3	1	2	3	1	1	0	1
633:	0	2	0	2	0	1	6	2
641:	7	2	4	6	3	7	10	12
649:	14	5	11	4	5	5	2	4
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	1
713:	0	0	0	0	0	0	2	1
721:	0	0	0	0	0	0	0	0
729:	0	1	1	1	2	0	1	0
737:	1	1	1	0	2	1	2	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	1	0	0	0	0	0	0
785:	0	0	0	0	1	0	1	0
793:	0	0	0	0	0	0	0	0

801: 0 0 0 0 0 0 0 0 0

Sample Title: 05

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

MS
6/22/16

Apex-Alpha™

Sample Description: CP-5023 05-10
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001549
 Batch Identification: 1606040A-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: 1.515E+000 +/- 0.000E+000 gram
 Sample Date/Time: 6/2/2016 7:51:30 AM
 Acquisition Date/Time: 6/22/2016 8:45:59 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
 Tracer Quantity: 0.222 mL
 Effective Efficiency: 0.2085 +/- 0.0171
 Counting Efficiency: 0.1824 +/- 0.0032 on 12/11/2015 2:46:16 PM
 Chem. Recovery Factor: 1.1433 +/- 0.0961

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	9.47	69.45	1.53	0.00E+000	4.4
TH-228	5.387	131.43	17.37	3.57	0.00E+000	4.7
TH-229 T	4.886	177.09	14.92	3.91	0.00E+000	7.0
TH-230	4.650	132.62	17.20	2.38	0.00E+000	14.0
TH-232	3.977	150.47	16.07	1.53	0.00E+000	10.8

T = Tracer Peak used for Effective Efficiency

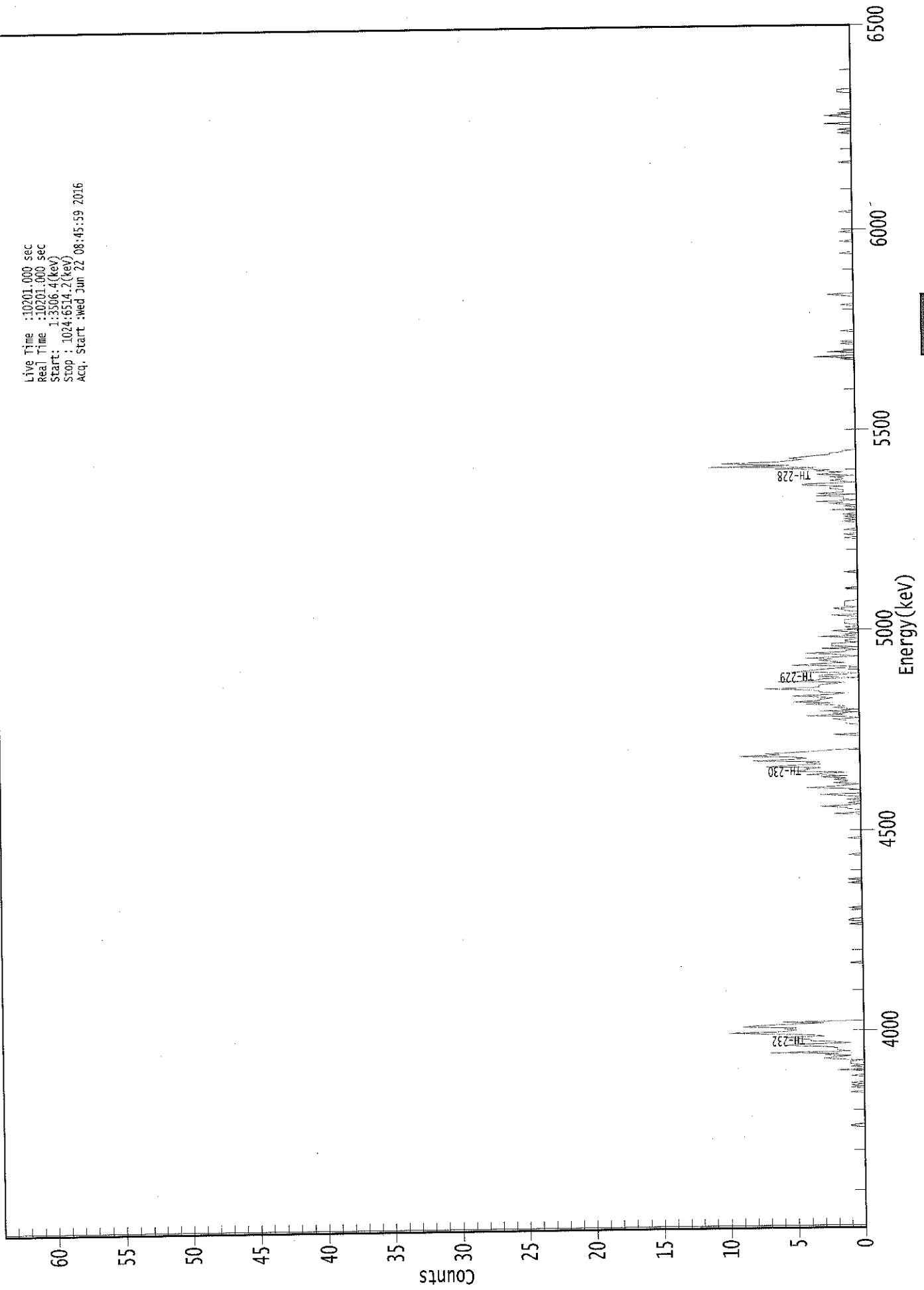
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	1.000	5850.00*	8.16E-002 +/- 5.82E-002	6.13E-002 +/- 9.87E-003
TH-228	0.999	5400.00*	1.13E+000 +/- 2.67E-001	8.07E-002 +/- 1.30E-002
TH-229	0.999	4872.00*	1.49E+000 +/- 2.40E-001	8.21E-002 +/- 1.32E-002
TH-230	0.997	4672.00*	1.11E+000 +/- 2.63E-001	6.89E-002 +/- 1.11E-002
TH-232	0.998	3997.00*	1.26E+000 +/- 2.87E-001	5.96E-002 +/- 9.61E-003

AG
6/23/16

0000154985.CNF

Live Time :10201.000 sec
Real Time :10201.000 sec
Start : 1:3306.4(kev)
Stop : 1024:6514.2(kev)
Acq. Start :Wed Jun 22 08:45:59 2016



ROI Type: 1

ROI Type: 3

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

Sample Title: 06

Elapsed Live time: 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	1	1
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	1	0	0	0	1
121:	0	1	0	1	0	0	0	0
129:	0	1	0	0	0	0	2	0
137:	0	1	0	1	1	1	0	2
145:	3	2	1	3	2	7	1	2
153:	2	2	3	6	5	1	2	4
161:	4	5	6	3	4	7	10	6
169:	5	6	5	9	8	6	3	6
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	1	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	1	0	0	1	1	0
265:	0	0	0	0	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	1	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	1	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	0	0	0	0
345:	0	0	0	0	0	0	0	0
353:	2	0	0	0	1	1	3	1
361:	0	1	0	0	1	0	0	1

369: 3 0 0 0 0 1 4 2

Sample Title: 06

Channel	1	2	3	4	5	6	7	8
377:	1	0	2	1	1	2	1	3
385:	1	4	3	1	5	4	4	3
393:	7	5	3	4	3	8	5	4
401:	5	9	6	7	5	3	2	0
409:	0	0	0	0	0	0	0	0
417:	0	0	0	2	0	0	0	0
425:	0	0	0	0	1	1	1	1
433:	2	0	1	4	1	2	0	3
441:	0	1	2	1	2	4	2	5
449:	3	3	2	3	5	2	1	3
457:	3	4	7	3	3	3	2	1
465:	6	3	3	0	3	3	1	0
473:	5	4	3	2	0	1	5	3
481:	1	2	3	2	4	0	1	2
489:	4	1	1	0	3	0	2	2
497:	2	0	1	1	0	0	3	0
505:	1	0	1	2	0	0	1	0
513:	0	1	1	1	1	0	0	0
521:	2	0	0	0	1	1	2	0
529:	1	1	1	1	1	0	0	0
537:	0	0	0	0	0	0	0	1
545:	0	0	0	0	0	0	0	0
553:	0	0	0	0	0	1	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	1	0	0	1	0	0
593:	0	1	0	0	0	0	0	0
601:	1	0	1	0	1	0	1	0
609:	0	0	2	0	0	1	0	2
617:	1	3	0	1	1	1	3	0
625:	3	1	1	1	2	2	1	4
633:	4	0	1	2	1	1	2	0
641:	3	2	1	3	2	6	3	11
649:	5	8	10	6	5	4	5	4
657:	3	2	2	1	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	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	1	0	3	0	0	0
745:	2	0	0	0	0	0	0	1
753:	0	1	0	0	0	0	0	0
761:	0	0	1	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	0	0	0	0
793:	1	2	0	0	0	0	0	0

801: 0 0 0 0 0 0 0 0 0

Sample Title: 06

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



CB
6/22/16

Sample Description: CP-5023 10-15
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001549
 Batch Identification: 1606040A-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: 1.507E+000 +/- 0.000E+000 gram
 Sample Date/Time: 6/2/2016 7:51:30 AM
 Acquisition Date/Time: 6/22/2016 8:46:00 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
 Tracer Quantity: 0.222 mL
 Effective Efficiency: 0.2935 +/- 0.0207
 Counting Efficiency: 0.2292 +/- 0.0039 on 12/11/2015 2:46:18 PM
 Chem. Recovery Factor: 1.2805 +/- 0.0930

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	5.890	9.64	68.14	1.36	0.00E+000	4.5
TH-228	5.376	191.32	14.20	0.68	0.00E+000	4.2
TH-229 T	4.883	248.83	12.43	0.17	0.00E+000	3.7
TH-230	4.626	189.49	14.26	0.51	0.00E+000	20.6
TH-232	3.964	156.66	15.68	0.34	0.00E+000	5.2

T = Tracer Peak used for Effective Efficiency

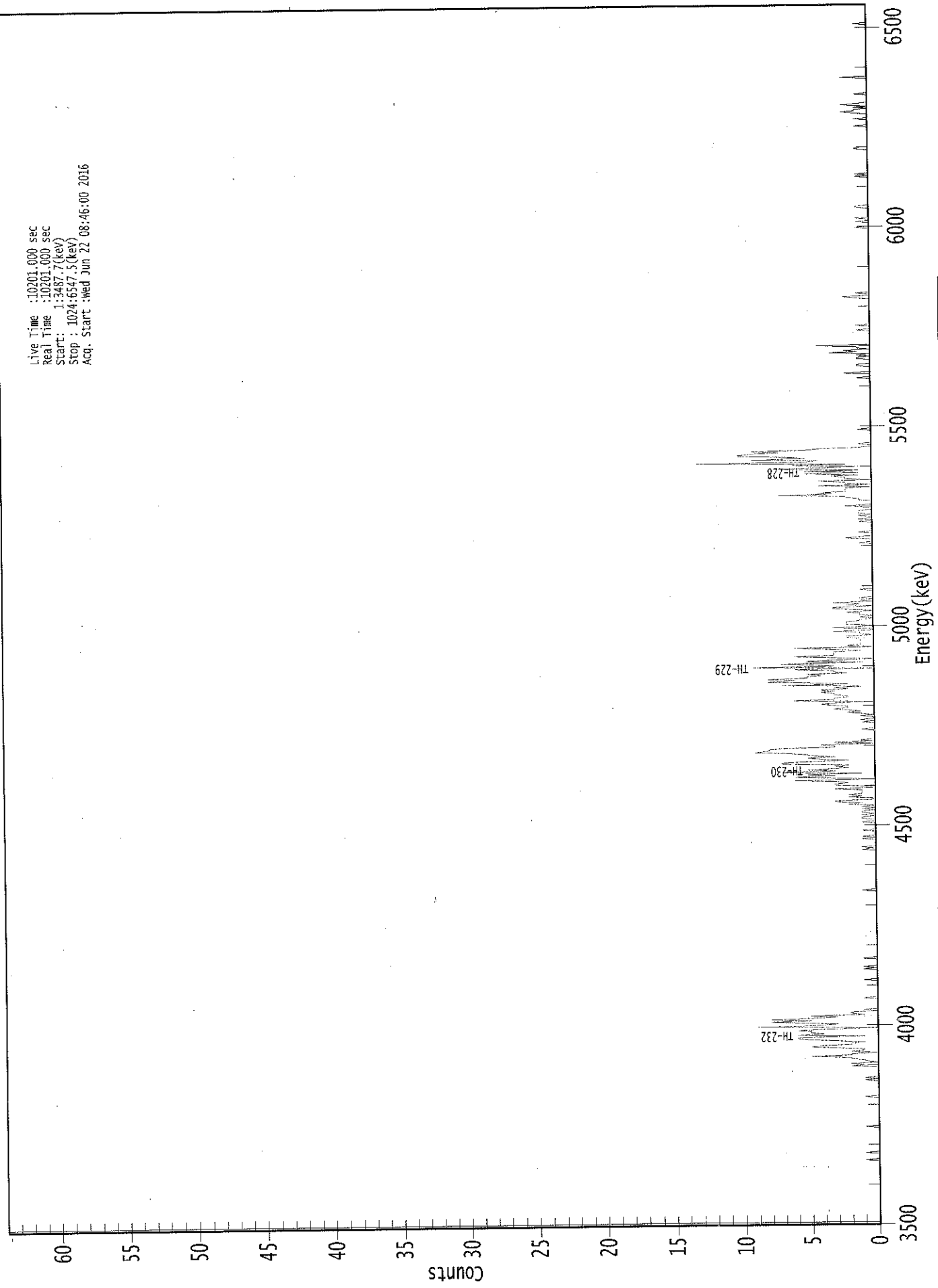
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.992	5850.00*	5.93E-002 +/- 4.13E-002	4.22E-002 +/- 5.84E-003
TH-228	0.997	5400.00*	1.17E+000 +/- 2.32E-001	3.45E-002 +/- 4.77E-003
TH-229	0.999	4872.00*	1.50E+000 +/- 2.07E-001	2.51E-002 +/- 3.48E-003
TH-230	0.989	4672.00*	1.14E+000 +/- 2.26E-001	3.15E-002 +/- 4.36E-003
TH-232	0.994	3997.00*	9.39E-001 +/- 1.96E-001	2.86E-002 +/- 3.96E-003

AG
6/23/16

0000154986.CNF

Live Time :10201.000 sec
Real Time :10201.000 sec
Start : 1:3487.7(kev)
Stop : 1024:6547.5(kev)
Acq. Start :Wed Jun 22 08:46:00 2016



ROI Type: 3

ROI Type: 1

002000

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

369: 3 3 2 3 6 0 3 6

Sample Title: 07

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

801: 0 0 0 0 0 0 0 0 0

Sample Title: 07

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

KB
6/22/16

Apex-Alpha™

Sample Description: CP-5024 00-02
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001550
 Batch Identification: 1606040A-TH
 Sample Identification: 08
 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: 1.590E+000 +/- 0.000E+000 gram
 Sample Date/Time: 6/2/2016 7:51:30 AM
 Acquisition Date/Time: 6/22/2016 11:58:42 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
 Tracer Quantity: 0.222 mL
 Effective Efficiency: 0.2082 +/- 0.0170
 Counting Efficiency: 0.1612 +/- 0.0029 on 12/11/2015 2:46:09 PM
 Chem. Recovery Factor: 1.2912 +/- 0.1080

Peak Match Tolerance: 0.175 MeV

 PEAK AREA REPORT

Nuclide	Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
TH-227	5.854	1.47	240.77	1.53	0.00E+000	3.0
TH-228	5.392	98.96	19.94	2.04	0.00E+000	17.3
TH-229	T 4.883	176.47	14.83	1.53	0.00E+000	3.9
TH-230	4.655	125.32	17.56	0.68	0.00E+000	9.0
TH-232	3.979	102.83	19.35	0.17	0.00E+000	4.8

T = Tracer Peak used for Effective Efficiency

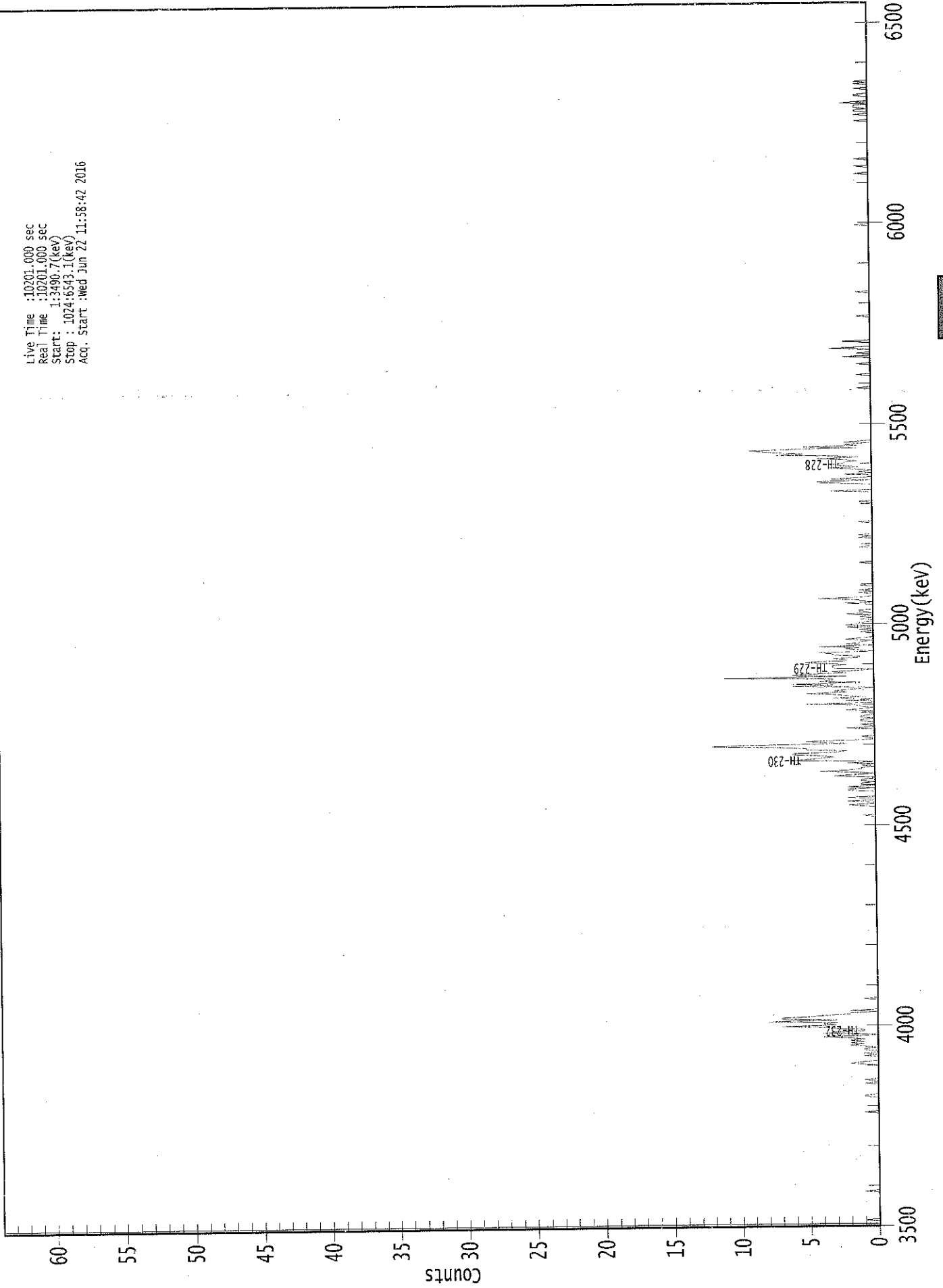
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	1.000	5850.00*	1.21E-002 +/- 2.92E-002	5.84E-002 +/- 9.37E-003
TH-228	1.000	5400.00*	8.08E-001 +/- 2.07E-001	6.36E-002 +/- 1.02E-002
TH-229	0.999	4872.00*	1.42E+000 +/- 2.27E-001	5.72E-002 +/- 9.16E-003
TH-230	0.998	4672.00*	1.00E+000 +/- 2.39E-001	4.52E-002 +/- 7.25E-003
TH-232	0.998	3997.00*	8.23E-001 +/- 2.07E-001	3.34E-002 +/- 5.35E-003

AG
6/23/16

0000155020.CNF

Live Time :10201.000 sec
Real Time :10201.000 sec
Start: 1:3490.7(kev)
Stop : 1024:6943.1(kev)
Acq. Start :Wed Jun 22 11:58:42 2016



ROI Type: 1

ROI Type: 3

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

Sample Title: 08

Elapsed Live time: 10201
 Elapsed Real Time: 10201

Channel	10201	10201	0	0	0	1	0	0
1:	10201	10201	0	0	0	1	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	1	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	1
97:	0	0	0	0	0	0	0	0
105:	0	0	0	0	1	1	0	0
113:	0	0	0	0	0	0	0	1
121:	0	0	1	0	0	0	0	0
129:	0	0	0	0	0	0	0	1
137:	2	1	0	0	0	0	1	0
145:	1	0	0	1	1	0	1	2
153:	1	2	1	2	1	2	4	1
161:	0	4	3	1	1	3	4	7
169:	3	4	3	8	3	7	7	5
177:	4	2	2	0	2	0	0	0
185:	0	0	0	0	0	0	1	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	0	0	0
281:	0	0	0	0	0	0	0	0
289:	0	0	0	0	0	0	0	0
297:	0	0	0	0	0	0	0	0
305:	0	0	0	0	0	0	0	0
313:	0	0	0	0	0	0	0	0
321:	0	0	0	0	0	0	0	0
329:	0	0	0	0	0	0	0	0
337:	0	0	0	0	0	0	0	1
345:	0	0	0	0	0	0	0	1
353:	2	0	0	2	0	0	2	0
361:	0	0	0	0	2	2	0	2

369: 0 1 1 0 1 1 0 0

Sample Title: 08

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

801: 0 0 0 0 0 0 0 0 0

Sample Title: 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	1	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	1
881:	0	0	0	0	0	1	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	0	0
921:	0	0	0	1	0	0	0	0
929:	1	0	0	1	1	0	1	1
937:	1	0	2	1	0	0	0	0
945:	1	1	0	0	0	0	1	0
953:	0	0	1	0	1	0	0	0
961:	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

reb
6/22/16

Apex-Alpha™

Sample Description: CP-5024 02-05
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001550
 Batch Identification: 1606040A-TH
 Sample Identification: 09
 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: 1.502E+000 +/- 0.000E+000 gram
 Sample Date/Time: 6/2/2016 7:51:30 AM
 Acquisition Date/Time: 6/22/2016 11:58:43 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
 Tracer Quantity: 0.223 mL
 Effective Efficiency: 0.1927 +/- 0.0162
 Counting Efficiency: 0.1879 +/- 0.0033 on 12/11/2015 2:46:10 PM
 Chem. Recovery Factor: 1.0259 +/- 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	5.845	11.32	60.27	0.68	0.00E+000	2.9
TH-228	5.368	133.32	17.03	0.68	0.00E+000	5.3
TH-229 T	4.872	163.98	15.36	1.02	0.00E+000	7.2
TH-230	4.627	133.47	17.08	1.53	0.00E+000	4.3
TH-232	3.957	124.15	17.66	0.85	0.00E+000	5.4

T = Tracer Peak used for Effective Efficiency

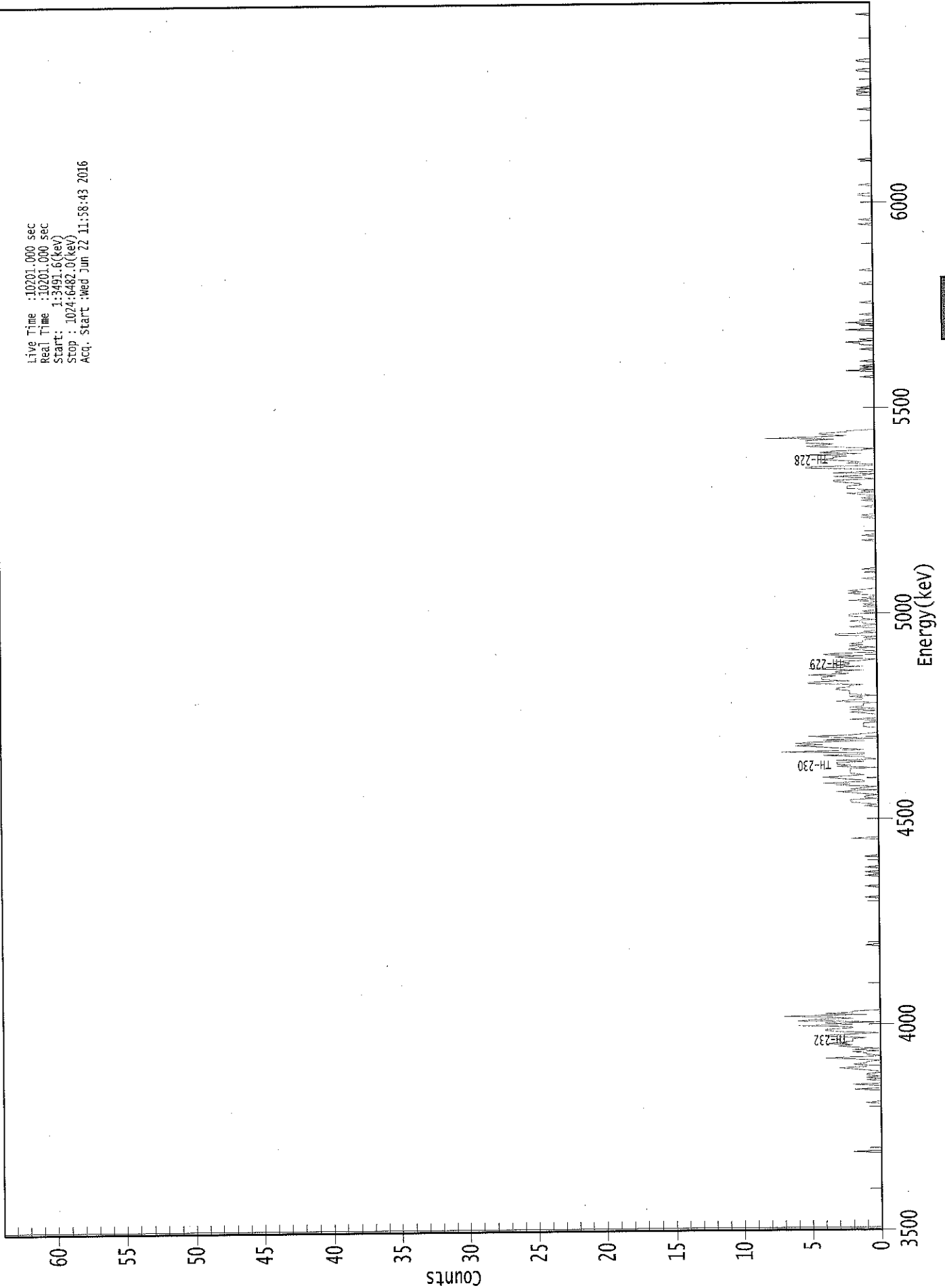
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	1.000	5850.00*	1.06E-001 +/- 6.65E-002	5.30E-002 +/- 8.76E-003
TH-228	0.995	5400.00*	1.25E+000 +/- 2.95E-001	5.27E-002 +/- 8.70E-003
TH-229	1.000	4872.00*	1.51E+000 +/- 2.49E-001	5.79E-002 +/- 9.57E-003
TH-230	0.989	4672.00*	1.22E+000 +/- 2.91E-001	6.52E-002 +/- 1.08E-002
TH-232	0.992	3997.00*	1.14E+000 +/- 2.75E-001	5.48E-002 +/- 9.05E-003

AG
6/23/16

0000155021.CNF

Live Time : 10201.000 sec
Real Time : 10201.000 sec
Start : 1:3491.6(kev)
Stop : 1024:6482.0(kev)
Acq. Start : Wed Jun 22 11:58:43 2016



ROI Type: 1

ROI Type: 3

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

Sample Title: 09

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	2	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	1	0	0	0	0	0
113:	0	0	0	0	0	2	0	0
121:	0	2	0	0	0	1	0	1
129:	0	1	1	0	0	1	2	3
137:	1	1	2	1	1	0	2	4
145:	1	0	1	1	2	0	2	0
153:	2	3	2	4	3	2	2	2
161:	1	4	4	2	0	3	4	4
169:	2	2	6	2	4	0	6	5
177:	2	4	7	1	4	2	2	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	1	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	1	0
289:	0	0	0	0	0	0	0	1
297:	0	0	1	0	0	0	1	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	2	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	1	0	1	2	2	2	0
361:	1	1	0	1	2	3	0	2

369: 1 0 3 2 4 1 1 2

Sample Title: 09

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

801: 0 0 0 0 0 0 0 0 0

Sample Title: 09

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



KB
6/22/16

Sample Description: CP-5024 05-10
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001550
 Batch Identification: 1606040A-TH
 Sample Identification: 10
 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: 1.617E+000 +/- 0.000E+000 gram
 Sample Date/Time: 6/2/2016 7:51:30 AM
 Acquisition Date/Time: 6/22/2016 11:58:44 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
 Tracer Quantity: 0.223 mL
 Effective Efficiency: 0.2110 +/- 0.0171
 Counting Efficiency: 0.1895 +/- 0.0033 on 12/11/2015 2:46:10 PM
 Chem. Recovery Factor: 1.1132 +/- 0.0922

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	5.890	12.47	59.35	1.53	0.00E+000	2.9
TH-228	5.373	157.09	15.86	3.91	0.00E+000	13.0
TH-229 T	4.864	179.81	14.67	1.19	0.00E+000	4.8
TH-230	4.632	186.98	14.38	1.02	0.00E+000	20.4
TH-232	3.954	183.98	14.50	1.02	0.00E+000	7.3

T = Tracer Peak used for Effective Efficiency

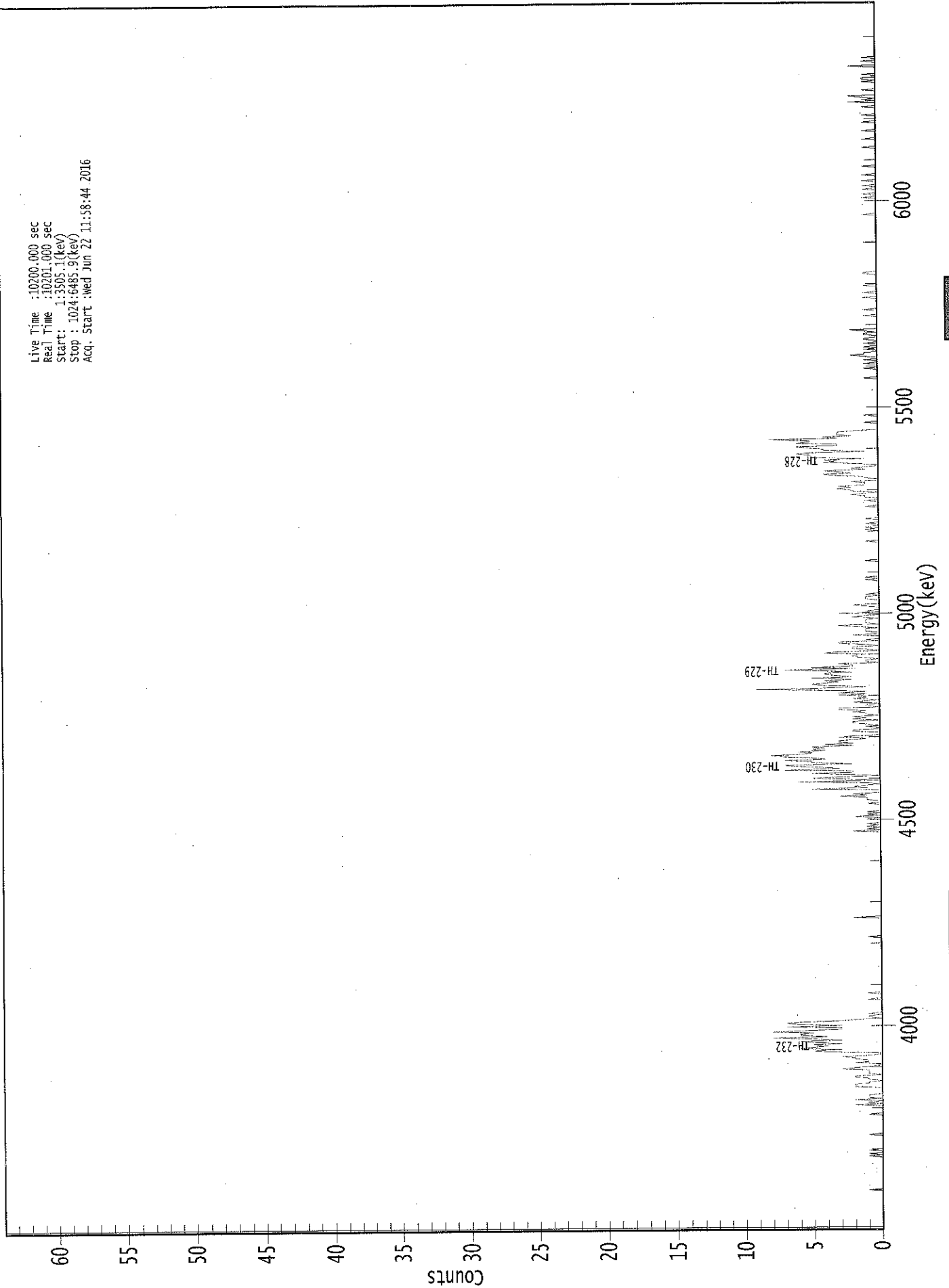
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.992	5850.00*	9.95E-002 +/- 6.11E-002	5.67E-002 +/- 9.01E-003
TH-228	0.996	5400.00*	1.25E+000 +/- 2.79E-001	7.72E-002 +/- 1.23E-002
TH-229	1.000	4872.00*	1.40E+000 +/- 2.23E-001	5.14E-002 +/- 8.16E-003
TH-230	0.992	4672.00*	1.45E+000 +/- 3.12E-001	4.90E-002 +/- 7.78E-003
TH-232	0.991	3997.00*	1.43E+000 +/- 3.07E-001	4.89E-002 +/- 7.77E-003

AG
6/23/16

0000155022.CNF

Live Time : 10200.000 sec
Real Time : 10201.000 sec
Start : 1:3505.1(kev)
Stop : 1024:5485.9(kev)
Acq. Start : wed Jun 22 11:58:44 2016



ROI Type: 1

ROI Type: 3

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

Sample Title: 10

Elapsed Live time: 10200

Elapsed Real Time: 10201

Channel	-----	-----	-----	-----	-----	-----	-----	-----	-----
1:	10201	10200	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0	0
33:	0	1	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	1	0	0	1
65:	0	0	1	0	0	0	0	0	0
73:	0	0	0	0	0	0	0	0	1
81:	0	0	0	0	0	0	0	0	0
89:	0	0	0	0	0	0	0	0	0
97:	1	0	0	0	0	0	0	0	0
105:	2	0	1	0	2	0	1	1	1
113:	1	0	0	0	0	0	0	0	2
121:	2	2	1	1	0	1	1	2	2
129:	2	0	1	1	1	1	3	2	2
137:	1	0	0	2	1	1	2	2	2
145:	3	1	0	0	4	5	3	6	5
153:	5	4	5	3	5	6	3	5	3
161:	8	4	6	6	5	8	5	3	2
169:	3	7	3	6	7	6	3	2	2
177:	0	1	1	0	1	0	0	0	0
185:	0	0	0	0	0	0	0	0	0
193:	1	0	0	0	0	1	0	0	0
201:	0	0	0	0	0	0	0	0	0
209:	0	0	0	0	0	0	0	0	0
217:	0	0	0	0	0	0	0	0	0
225:	0	0	0	0	0	0	0	0	0
233:	0	0	0	0	0	0	0	0	0
241:	0	0	0	0	1	0	0	0	0
249:	0	0	0	0	0	0	0	0	0
257:	0	0	0	0	2	0	0	0	0
265:	0	0	0	0	0	0	0	0	0
273:	0	0	0	0	0	0	0	0	0
281:	0	0	0	0	0	0	0	0	0
289:	0	0	0	0	0	0	0	0	0
297:	0	0	0	0	0	0	0	0	0
305:	0	0	0	0	0	0	0	0	0
313:	0	0	0	0	0	0	0	0	0
321:	0	0	0	0	0	0	0	0	0
329:	0	0	0	0	2	0	1	0	0
337:	1	0	1	0	0	0	1	0	0
345:	2	0	1	0	1	0	0	0	0
353:	0	0	0	1	0	0	1	1	1
361:	1	3	1	2	0	0	0	5	5

369: 1 2 1 0 1 6 0 2

Sample Title: 10

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

801: 0 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	1	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	1	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	1	0	0	1	0
865:	0	0	1	0	0	1	0	0
873:	0	1	0	0	0	0	1	0
881:	0	0	0	0	0	1	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	1	0	0	0
913:	0	0	0	1	0	0	0	0
921:	0	0	1	0	0	0	0	0
929:	1	0	0	0	0	0	0	1
937:	0	0	0	2	0	1	0	1
945:	2	0	0	0	0	1	0	0
953:	0	0	0	0	1	0	1	1
961:	0	0	1	0	0	0	0	0
969:	0	2	0	0	0	1	0	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



110
6/22/16

Sample Description: CP-5024 10-15
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001550
 Batch Identification: 1606040A-TH
 Sample Identification: 11
 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: 1.514E+000 +/- 0.000E+000 gram
 Sample Date/Time: 6/2/2016 7:51:30 AM
 Acquisition Date/Time: 6/22/2016 11:58:45 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
 Tracer Quantity: 0.230 mL
 Effective Efficiency: 0.2260 +/- 0.0176
 Counting Efficiency: 0.1989 +/- 0.0034 on 12/11/2015 2:46:14 PM
 Chem. Recovery Factor: 1.1366 +/- 0.0907

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	5.840	10.11	71.21	2.89	0.00E+000	2.6
TH-228	5.378	150.94	16.14	3.06	0.00E+000	10.2
TH-229 T	4.877	198.13	14.00	1.87	0.00E+000	5.6
TH-230	4.624	148.62	16.23	2.38	0.00E+000	3.9
TH-232	3.956	139.98	16.64	1.02	0.00E+000	3.5

T = Tracer Peak used for Effective Efficiency

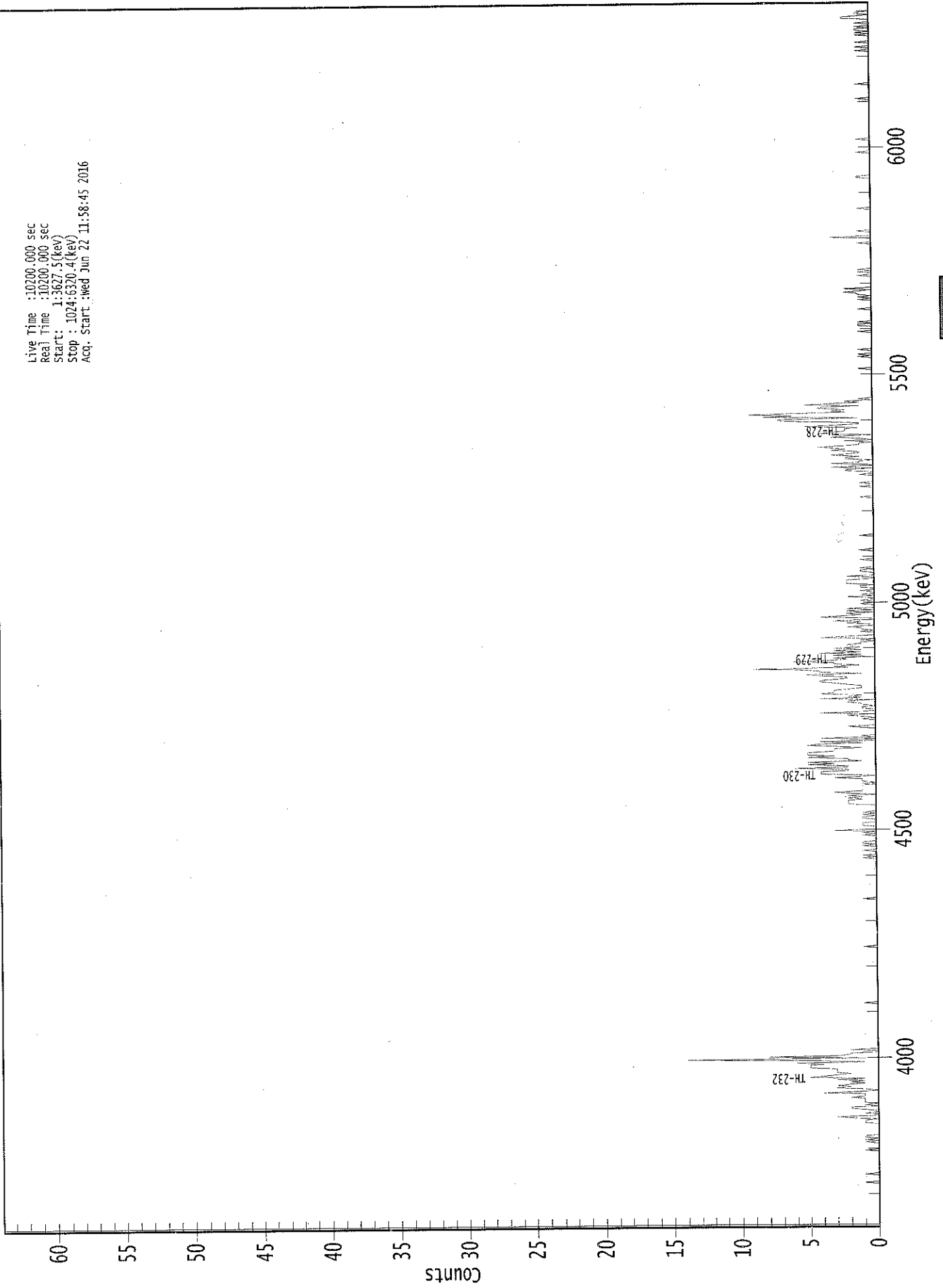
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	1.000	5850.00*	8.05E-002 +/- 5.86E-002	6.97E-002 +/- 1.06E-002
TH-228	0.997	5400.00*	1.19E+000 +/- 2.65E-001	7.06E-002 +/- 1.08E-002
TH-229	1.000	4872.00*	1.54E+000 +/- 2.35E-001	5.89E-002 +/- 8.99E-003
TH-230	0.988	4672.00*	1.15E+000 +/- 2.57E-001	6.36E-002 +/- 9.71E-003
TH-232	0.991	3997.00*	1.08E+000 +/- 2.45E-001	4.88E-002 +/- 7.45E-003

AG
6/23/16

0000155023.CNF

Live Time :10200.000 sec
Real Time :10200.000 sec
Start : 1:3827.5(kev)
Stop : 1024:6320.4(kev)
Acq. Start :Wed Jun 22 11:58:45 2016



ROI Type: 1

ROI Type: 3

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

Sample Title: 11

Elapsed Live time: 10200
 Elapsed Real Time: 10200

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

369: 1 1 1 0 1 1 1 3

Sample Title: 11

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

801: 0 0 0 0 0 0 0 0 0

Sample Title: 11

Channel	-----	-----	-----	-----	-----	-----	-----	-----
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	1	0	0
825:	0	0	3	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	1	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	1	1	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	1	0	0	0	0	0	0
905:	0	0	0	0	1	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	0
945:	0	0	0	0	0	0	0	0
953:	0	0	1	0	0	0	0	0
961:	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	1	0
985:	0	1	0	0	0	1	0	0
993:	0	0	0	1	0	1	0	1
1001:	1	0	1	0	0	1	0	0
1009:	0	2	2	1	0	1	1	0
1017:	0	0	0	0	0	0	0	0

KJB
6/22/16

Apex-Alpha™

Sample Description: CP-5025 00-02
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001550
 Batch Identification: 1606040A-TH
 Sample Identification: 12
 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: 1.525E+000 +/- 0.000E+000 gram
 Sample Date/Time: 6/2/2016 7:51:30 AM
 Acquisition Date/Time: 6/22/2016 11:58:46 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
 Tracer Quantity: 0.223 mL
 Effective Efficiency: 0.1890 +/- 0.0161
 Counting Efficiency: 0.1919 +/- 0.0033 on 12/11/2015 2:46:15 PM
 Chem. Recovery Factor: 0.9845 +/- 0.0854

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	5.920	11.13	64.27	1.87	0.00E+000	3.0
TH-228	5.369	110.79	18.84	2.21	0.00E+000	4.1
TH-229 T	4.883	160.98	15.51	1.02	0.00E+000	3.9
TH-230	4.638	131.98	17.14	1.02	0.00E+000	6.8
TH-232	3.964	124.83	17.56	0.17	0.00E+000	4.5

T = Tracer Peak used for Effective Efficiency

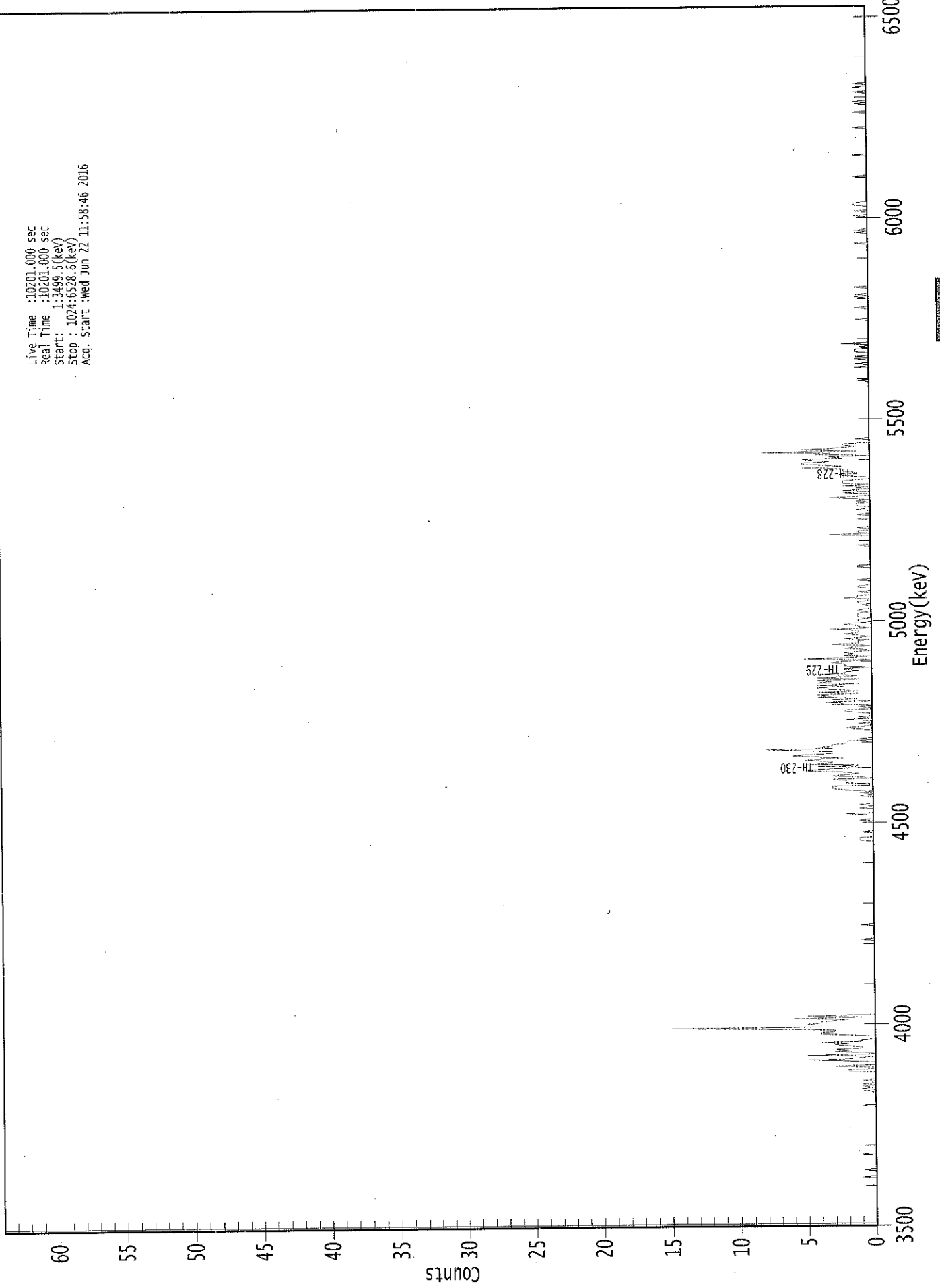
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.975	5850.00*	1.05E-001 +/- 6.98E-002	7.15E-002 +/- 1.19E-002
TH-228	0.995	5400.00*	1.04E+000 +/- 2.61E-001	7.50E-002 +/- 1.25E-002
TH-229	0.999	4872.00*	1.49E+000 +/- 2.48E-001	5.82E-002 +/- 9.69E-003
TH-230	0.994	4672.00*	1.22E+000 +/- 2.90E-001	5.80E-002 +/- 9.66E-003
TH-232	0.994	3997.00*	1.15E+000 +/- 2.78E-001	3.84E-002 +/- 6.39E-003

AG
6/23/16

0000155024.CNF

Live Time :10201.000 sec
Real Time :10201.000 sec
Start : 1:3459.5(kev)
Stop : 1024:6528.6(kev)
Acq. Start :wed Jun 22 11:58:46 2016



ROI Type: 1

ROI Type: 3

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

Sample Title: 12

Elapsed Live time: 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	1	0	0	0	0	0	1
49:	0	0	0	0	0	0	0	0
57:	0	0	0	0	1	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	1	0	0
105:	0	0	0	0	0	0	0	0
113:	0	1	0	1	0	1	0	1
121:	0	0	1	0	0	0	0	0
129:	0	0	2	2	0	0	3	0
137:	0	0	1	5	2	1	0	5
145:	0	0	3	2	3	1	1	2
153:	3	2	4	1	1	0	0	0
161:	2	4	4	3	3	6	15	4
169:	4	5	4	4	3	2	6	1
177:	5	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:	1	0	0	0	0	0	0	0
249:	0	0	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	0	0	0
297:	0	0	0	0	0	0	0	0
305:	0	0	0	0	0	0	0	0
313:	0	0	0	0	0	0	0	0
321:	0	0	0	1	1	1	0	0
329:	0	0	1	0	0	0	0	0
337:	0	0	0	0	1	0	0	0
345:	0	2	0	0	0	0	1	0
353:	0	1	0	0	0	0	0	0
361:	1	0	0	1	0	2	3	3

369: 3 0 0 2 2 2 3 0

Sample Title: 12

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

Sample Title: 12

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

Apex-Alpha™

KB
6/22/16

Sample Description: CP-5025 02-05
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001550
 Batch Identification: 1606040A-TH
 Sample Identification: 13
 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: 1.509E+000 +/- 0.000E+000 gram
 Sample Date/Time: 6/2/2016 7:51:30 AM
 Acquisition Date/Time: 6/22/2016 11:58:47 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: 0.2297 +/- 0.0181
 Counting Efficiency: 0.1824 +/- 0.0032 on 12/11/2015 2:46:16 PM
 Chem. Recovery Factor: 1.2591 +/- 0.1014

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	5.867	13.47	56.84	1.53	0.00E+000	2.9
TH-228	5.398	137.43	16.97	3.57	0.00E+000	14.3
TH-229 T	4.899	196.09	14.16	3.91	0.00E+000	5.4
TH-230	4.656	133.62	17.13	2.38	0.00E+000	7.1
TH-232	3.979	140.47	16.64	1.53	0.00E+000	10.4

T = Tracer Peak used for Effective Efficiency

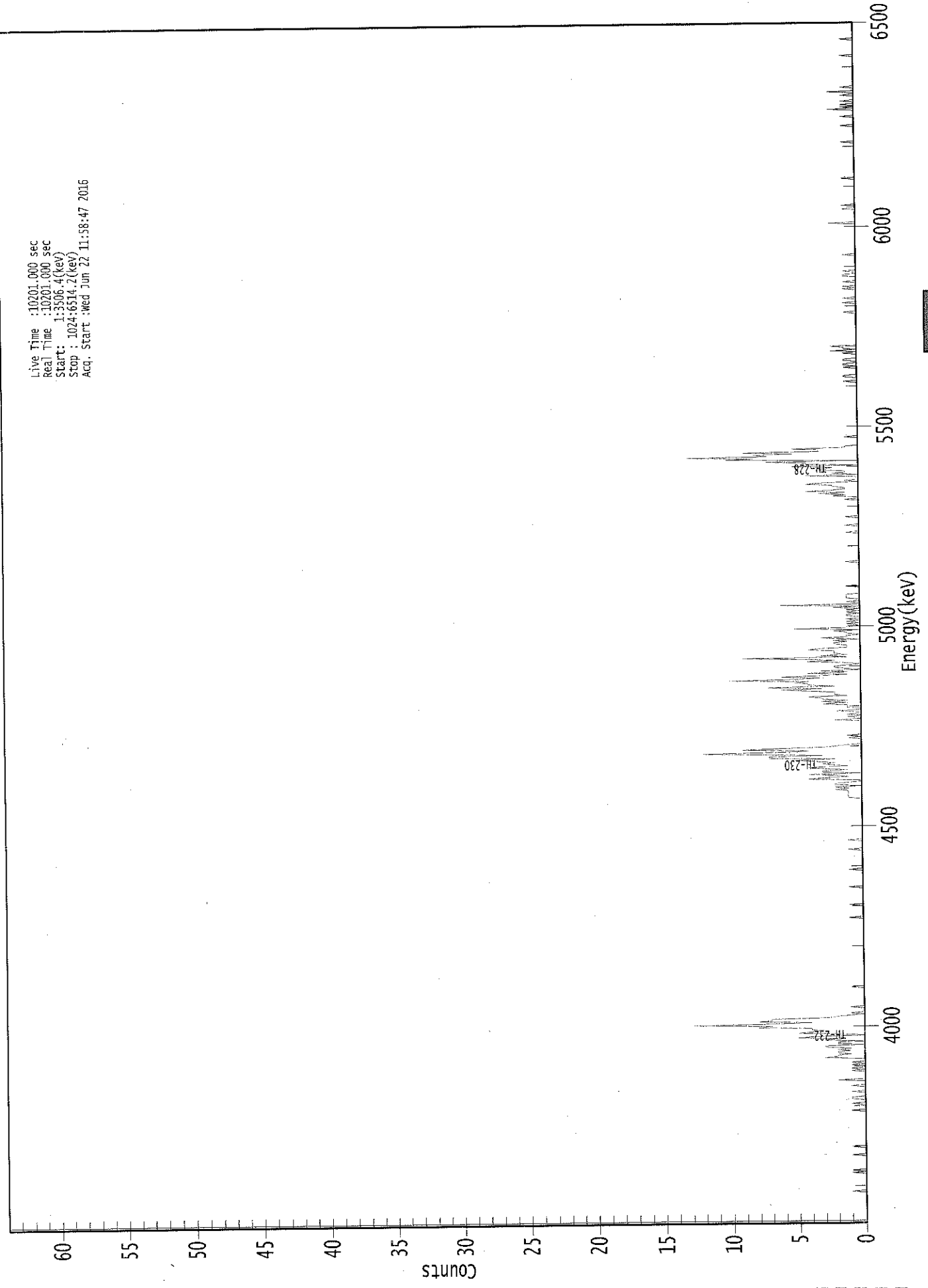
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.999	5850.00*	1.06E-001 +/- 6.23E-002	5.58E-002 +/- 8.60E-003
TH-228	1.000	5400.00*	1.07E+000 +/- 2.46E-001	7.36E-002 +/- 1.13E-002
TH-229	0.996	4872.00*	1.51E+000 +/- 2.32E-001	7.49E-002 +/- 1.15E-002
TH-230	0.999	4672.00*	1.02E+000 +/- 2.36E-001	6.28E-002 +/- 9.67E-003
TH-232	0.998	3997.00*	1.07E+000 +/- 2.44E-001	5.44E-002 +/- 8.37E-003

AG
6/23/16

0000155025.CNF

Live Time :10201.000 sec
Real Time :10201.000 sec
Start : 1:3506.4(keV)
Stop : 1024:6514.2(keV)
Acq. Start :Wed Jun 22 11:58:47 2016



ROI Type: 1

ROI Type: 3

002000

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

Sample Title: 13

Elapsed Live time: 10201
 Elapsed Real Time: 10201

Channel	10201	10201	0	0	0	0	0	0	0
1:	10201	10201	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0	0
25:	0	0	0	1	0	0	0	0	0
33:	0	0	0	0	0	0	0	0	0
41:	0	0	0	1	0	1	0	0	0
49:	0	0	0	0	0	0	0	0	0
57:	0	0	1	0	0	0	0	0	0
65:	0	1	0	0	0	0	0	0	0
73:	0	0	0	0	0	0	0	0	0
81:	0	0	0	0	0	0	0	0	0
89:	0	0	0	0	0	0	0	0	0
97:	1	0	0	0	0	0	1	0	0
105:	0	0	1	1	0	0	0	0	0
113:	1	0	0	0	0	1	0	0	0
121:	0	0	2	0	0	0	0	0	0
129:	0	0	1	0	1	0	0	0	1
137:	0	1	0	0	0	3	2	2	2
145:	1	2	2	1	2	1	3	3	3
153:	0	2	2	0	3	2	5	4	4
161:	0	1	5	4	3	4	4	8	8
169:	7	13	7	4	8	7	7	3	3
177:	2	1	0	1	0	0	0	0	0
185:	1	0	0	0	0	0	0	0	0
193:	0	0	0	0	0	0	0	0	0
201:	0	1	0	0	0	0	0	0	0
209:	0	0	0	0	0	0	0	0	0
217:	0	0	0	0	0	0	0	0	0
225:	0	0	0	0	0	0	0	0	0
233:	0	0	0	0	0	0	0	0	0
241:	0	0	0	0	0	0	0	0	0
249:	0	0	0	0	0	0	0	0	0
257:	0	0	0	0	1	0	0	0	0
265:	0	0	0	0	0	0	0	0	1
273:	0	0	0	0	0	0	0	0	0
281:	0	0	0	0	0	0	1	0	0
289:	0	0	0	0	0	0	0	0	0
297:	0	0	0	0	0	1	0	0	0
305:	0	0	0	0	0	0	0	0	0
313:	0	0	0	0	0	0	1	0	0
321:	0	0	0	0	0	0	1	0	0
329:	0	0	0	0	0	0	0	0	0
337:	0	0	0	0	0	0	0	0	0
345:	0	0	0	0	0	0	0	0	0
353:	0	0	0	0	0	0	0	0	0
361:	0	0	1	1	1	1	1	1	1

369: 1 2 1 2 0 2 2 1

Sample Title: 13

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

801: 0 1 0 0 0 0 1 1

Sample Title: 13

Channel								
809:	0	0	1	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	1	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	2	0	0	0	0
857:	0	0	0	0	0	0	0	1
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	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	0	0	0	0	0
921:	1	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	1	0
937:	0	0	0	0	0	0	1	0
945:	0	0	0	0	2	0	1	0
953:	1	0	0	1	0	0	0	0
961:	1	0	0	2	0	0	0	1
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	0
1009:	1	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

KB
6/22/16

Apex-Alpha™

Sample Description: CP-5025 05-10
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001550
 Batch Identification: 1606040A-TH
 Sample Identification: 14
 Sample Geometry: Shelf 2
 Procedure Description: Th iso

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

Sample Size: 1.519E+000 +/- 0.000E+000 gram
 Sample Date/Time: 6/2/2016 3:19:13 PM
 Acquisition Date/Time: 6/22/2016 3:29:11 PM
 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: 0.0779 +/- 0.0100
 Counting Efficiency: 0.1862 +/- 0.0032 on 12/11/2015 8:20:49 AM
 Chem. Recovery Factor: 0.4182 +/- 0.0541

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	5.795	4.96	107.11	2.04	0.00E+000	6.0
TH-228	5.390	57.28	26.61	2.72	0.00E+000	5.0
TH-229 T	4.895	66.47	24.36	1.53	0.00E+000	3.0
TH-230	4.646	53.13	27.44	1.87	0.00E+000	7.4
TH-232	3.976	58.13	26.19	1.87	0.00E+000	5.0

T = Tracer Peak used for Effective Efficiency

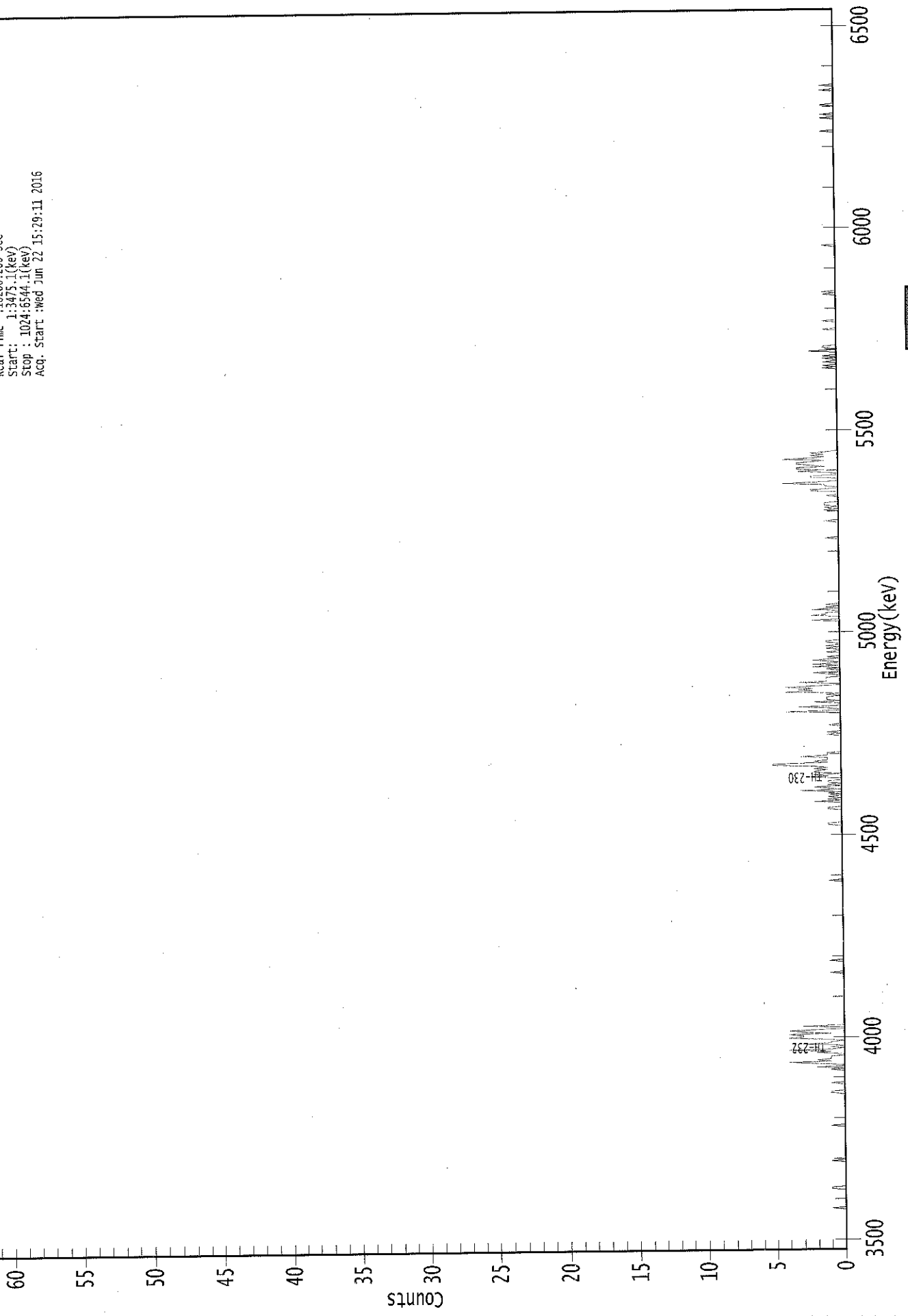
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.984	5850.00*	1.14E-001 +/- 1.26E-001	1.79E-001 +/- 4.50E-002
TH-228	0.999	5400.00*	1.31E+000 +/- 4.79E-001	1.96E-001 +/- 4.92E-002
TH-229	0.997	4872.00*	1.50E+000 +/- 3.76E-001	1.60E-001 +/- 4.02E-002
TH-230	0.997	4672.00*	1.19E+000 +/- 4.43E-001	1.70E-001 +/- 4.27E-002
TH-232	0.998	3997.00*	1.30E+000 +/- 4.72E-001	1.70E-001 +/- 4.26E-002

AG
6/23/16

0000155059.CNF

Live Time :10200.000 sec
Real Time :10200.200 sec
Start: 1:3475.1(keV)
Stop : 1024:6544.1(keV)
Acq. Start :Wed Jun 22 15:29:11 2016



ROI Type: 1

ROI Type: 3

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

Sample Title: 14

Elapsed Live time: 10200
 Elapsed Real Time: 10200

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

369: 0 2 0 1 0 1 0 0

Sample Title: 14

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

801: 0 0 0 0 0 0 0 0 0

Sample Title: 14

Channel	-----	-----	-----	-----	-----	-----	-----	-----
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	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	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	1	0	0	0	0	0	0
929:	0	0	0	0	1	0	0	1
937:	0	0	0	0	0	0	0	1
945:	0	0	0	0	0	0	0	0
953:	0	0	0	1	0	0	0	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

7/15
6/22/16

Apex-Alpha™

Sample Description: CP-5025 10-15
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001550
 Batch Identification: 1606040A-TH
 Sample Identification: 15
 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: 1.504E+000 +/- 0.000E+000 gram
 Sample Date/Time: 6/2/2016 7:51:30 AM
 Acquisition Date/Time: 6/22/2016 11:59:18 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: 0.1971 +/- 0.0164
 Counting Efficiency: 0.1762 +/- 0.0031 on 12/11/2015 8:20:59 AM
 Chem. Recovery Factor: 1.1187 +/- 0.0952

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	5.806	16.15	50.25	0.85	0.00E+000	3.0
TH-228	5.388	132.98	17.07	1.02	0.00E+000	10.6
TH-229 T	4.891	168.32	15.14	0.68	0.00E+000	6.0
TH-230	4.654	146.49	16.23	0.51	0.00E+000	15.4
TH-232	3.978	140.83	16.53	0.17	0.00E+000	12.7

T = Tracer Peak used for Effective Efficiency

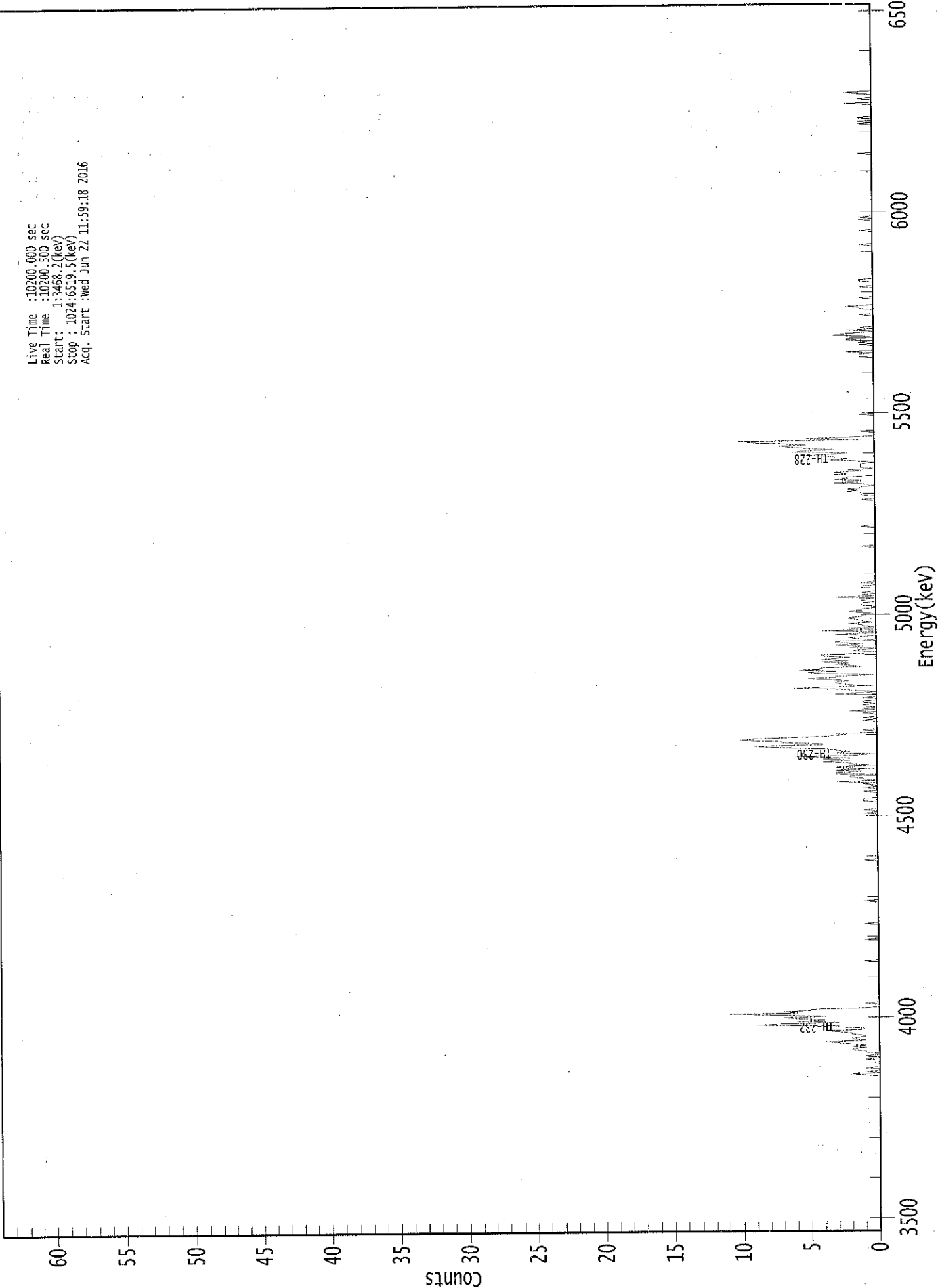
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.990	5850.00*	1.48E-001 +/- 7.84E-002	5.50E-002 +/- 8.97E-003
TH-228	0.999	5400.00*	1.21E+000 +/- 2.87E-001	5.75E-002 +/- 9.38E-003
TH-229	0.998	4872.00*	1.51E+000 +/- 2.47E-001	5.07E-002 +/- 8.27E-003
TH-230	0.998	4672.00*	1.31E+000 +/- 3.02E-001	4.70E-002 +/- 7.67E-003
TH-232	0.998	3997.00*	1.26E+000 +/- 2.92E-001	3.73E-002 +/- 6.09E-003

AG
6/23/16

0000155027.CNF

Live Time :10200.000 sec
Real Time :10200.500 sec
Start : 1:3468.2(keV)
Stop : 1024:6519.5(keV)
Acq. Start :Wed Jun 22 11:59:18 2016



ROI Type: 1

ROI Type: 3

369: 0 1 0 0 1 0 3 0

Sample Title: 15

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

801: 0 0 0 0 0 0 0 0 0

Sample Title: 15

Channel	-----	-----	-----	-----	-----	-----	-----	-----
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	1	0	0
825:	0	0	0	0	0	0	0	0
833:	0	1	0	0	0	0	0	0
841:	0	0	1	0	1	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	1	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	1	0	1	0	0	1
929:	0	0	0	0	0	0	0	0
937:	0	0	0	2	0	0	0	1
945:	0	0	0	1	2	0	0	0
953:	0	0	0	0	0	0	0	0
961:	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0



QA SUMMARY REPORT

Review Of QA Results - Pulser Check

Date : 6/22/2016
Time : 6:40:03 AM

CHAMBER	DEVICE	PARAMETER	FLAG	DATE
Alpha 001	21f	ALL	Not Done	
Alpha 002	21f	ALL	Not Done	
Alpha 003	21f	ALL	Passed	6/22/2016 6:21:15 AM
Alpha 004	21f	ALL	Passed	6/22/2016 6:21:16 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	6/22/2016 6:21:17 AM
Alpha 011	21f	ALL	Passed	6/22/2016 6:21:18 AM
Alpha 012	21f	ALL	Passed	6/22/2016 6:21:19 AM
Alpha 013	21f	ALL	Not Done	
Alpha 014	21f	ALL	Passed	6/22/2016 6:21:19 AM
Alpha 015	21f	Peak Energy	Action	6/22/2016 6:21:20 AM
Alpha 016	21f	ALL	Not Done	
Alpha 033	Alpha Analyst100DC	ALL	Passed	6/22/2016 6:21:21 AM
Alpha 034	Alpha Analyst100DC	ALL	Passed	6/22/2016 6:21:23 AM
Alpha 035	Alpha Analyst100DC	ALL	Passed	6/22/2016 6:21:25 AM
Alpha 036	Alpha Analyst100DC	ALL	Passed	6/22/2016 6:21:26 AM
Alpha 037	Alpha Analyst100DC	ALL	Passed	6/22/2016 6:21:28 AM
Alpha 038	Alpha Analyst100DC	ALL	Passed	6/22/2016 6:21:30 AM
Alpha 039	Alpha Analyst100DC	ALL	Passed	6/22/2016 6:21:33 AM
Alpha 040	Alpha Analyst100DC	ALL	Passed	6/22/2016 6:21:35 AM
Alpha 041	Alpha Analyst100DC	ALL	Passed	6/22/2016 6:21:37 AM
Alpha 042	Alpha Analyst100DC	ALL	Passed	6/22/2016 6:21:39 AM
Alpha 043	Alpha Analyst100DC	ALL	Passed	6/22/2016 6:21:42 AM
Alpha 044	Alpha Analyst100DC	ALL	Passed	6/22/2016 6:21:45 AM
Alpha 045	Alpha Analyst100DC	ALL	Passed	6/22/2016 6:21:47 AM
Alpha 046	Alpha Analyst100DC	ALL	Passed	6/22/2016 6:21:50 AM
Alpha 047	Alpha Analyst100DC	ALL	Passed	6/22/2016 6:21:52 AM
Alpha 048	Alpha Analyst100DC	ALL	Passed	6/22/2016 6:21:55 AM
Alpha 049	Alpha Analyst100DC	ALL	Passed	6/22/2016 6:21:57 AM
Alpha 050	Alpha Analyst100DC	ALL	Passed	6/22/2016 6:22:00 AM
Alpha 051	Alpha Analyst100DC	ALL	Not Done	
Alpha 052	Alpha Analyst100DC	ALL	Passed	6/22/2016 6:22:03 AM
Alpha 053	Alpha Analyst100DC	Peak FWHM	Action	6/22/2016 6:22:05 AM
Alpha 054	Alpha Analyst100DC	ALL	Passed	6/22/2016 6:22:08 AM
Alpha 055	Alpha Analyst100DC	ALL	Passed	6/22/2016 6:22:11 AM
Alpha 056	Alpha Analyst100DC	ALL	Passed	6/22/2016 6:22:14 AM
Alpha 057	Alpha Analyst100DC	ALL	Passed	6/22/2016 6:22:17 AM
Alpha 058	Alpha Analyst100DC	ALL	Passed	6/22/2016 6:22:20 AM

CHAMBER	DEVICE	PARAMETER	FLAG	DATE
Alpha 059	Alpha Analyst100DC	ALL	Passed	6/22/2016 6:22:23 AM
Alpha 060	Alpha Analyst100DC	ALL	Passed	6/22/2016 6:22:26 AM

APPROVED BY: AG

APPROVAL DATE: 6/22/16

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

Nuclide Library Title: Thorium

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

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

* = key line

TOTALS: 5 Nuclides 5 Energy Lines

SECTION X
ANALYTICAL DATA (GAMMA SPECTROSCOPY)

Work Order	16-06040
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-5023 00-02	46	06/02/16 00:00	4.1757E+02
04	DO	CP-5023 00-02	46	06/02/16 00:00	4.1757E+02
05	TRG	CP-5023 02-05	36	06/02/16 00:00	4.4028E+02
06	TRG	CP-5023 05-10	46	06/02/16 00:00	3.7872E+02
07	TRG	CP-5023 10-15	49	06/02/16 00:00	3.3292E+02
08	TRG	CP-5024 00-02	50	06/02/16 00:00	3.9248E+02
09	TRG	CP-5024 02-05	45	06/02/16 00:00	3.7297E+02
10	TRG	CP-5024 05-10	39	06/02/16 00:00	3.2871E+02
11	TRG	CP-5024 10-15	53	06/02/16 00:00	2.6685E+02
12	TRG	CP-5025 00-02	48	06/02/16 00:00	6.3039E+02
13	TRG	CP-5025 02-05	44	06/02/16 00:00	5.0887E+02
14	TRG	CP-5025 05-10	43	06/02/16 00:00	3.7634E+02
15	TRG	CP-5025 10-15	39	06/02/16 00:00	3.0238E+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.

Preliminary Data Report & Analytical Calculations
Work Order: 16-06040-Gamma-1

Eberline Analytical
Oak Ridge Laboratory

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 Data/Time	Identified
01	CO-60	LCS	LCS	pCi/g	1.45E+02	1.00E+01	1.52E+00	1.37E+02	105.89	OK		06/09/16 00:00	1.00E+00	06/15/16 16:50	YES
01	CS-137	LCS	LCS	pCi/g	8.92E+01	8.57E+00	2.07E+00	8.69E+01	102.61	OK		06/09/16 00:00	1.00E+00	06/15/16 16:50	YES
02	AC-228	MBL	BLANK	pCi/g	-1.03E-01	1.56E-01	2.10E-01					06/09/16 00:00	1.00E+00	06/15/16 15:49	NO
02	BI-214	MBL	BLANK	pCi/g	6.54E-02	8.30E-02	1.53E-01					06/09/16 00:00	1.00E+00	06/15/16 15:49	NO
02	K-40	MBL	BLANK	pCi/g	-1.78E-02	2.20E-01	6.99E-01					06/09/16 00:00	1.00E+00	06/15/16 15:49	NO
02	PA-231	MBL	BLANK	pCi/g	2.62E-01	1.27E+00	2.02E+00					06/09/16 00:00	1.00E+00	06/15/16 15:49	NO
02	PB-210	MBL	BLANK	pCi/g	1.51E-01	2.93E-01	4.78E-01					06/09/16 00:00	1.00E+00	06/15/16 15:49	NO
02	PB-212	MBL	BLANK	pCi/g	2.23E-02	5.76E-02	9.56E-02					06/09/16 00:00	1.00E+00	06/15/16 15:49	NO
02	PB-214	MBL	BLANK	pCi/g	8.52E-03	8.38E-02	1.35E-01					06/09/16 00:00	1.00E+00	06/15/16 15:49	NO
02	TL-208	MBL	BLANK	pCi/g	7.84E-02	1.06E-01	2.03E-01					06/09/16 00:00	1.00E+00	06/15/16 15:49	NO
03	AC-228	DUP	CP-5023 00-02	pCi/g	1.56E+00	3.29E-01	6.99E-01			NA		06/02/16 00:00	4.18E+02	06/15/16 15:49	YES
03	BI-214	DUP	CP-5023 00-02	pCi/g	1.03E+00	2.25E-01	3.35E-01			NA		06/02/16 00:00	4.18E+02	06/15/16 15:49	YES
03	K-40	DUP	CP-5023 00-02	pCi/g	2.16E+01	2.88E+00	1.68E+00			NA		06/02/16 00:00	4.18E+02	06/15/16 15:49	YES
03	PA-231	DUP	CP-5023 00-02	pCi/g	1.12E+00	2.78E+00	4.22E+00					06/02/16 00:00	4.18E+02	06/15/16 15:49	NO
03	PB-210	DUP	CP-5023 00-02	pCi/g	5.42E+00	1.96E+00	2.89E+00					06/02/16 00:00	4.18E+02	06/15/16 15:49	NO
03	PB-212	DUP	CP-5023 00-02	pCi/g	1.77E+00	2.19E-01	3.22E-01					06/02/16 00:00	4.18E+02	06/15/16 15:49	YES
03	PB-214	DUP	CP-5023 00-02	pCi/g	1.33E+00	2.00E-01	3.60E-01					06/02/16 00:00	4.18E+02	06/15/16 15:49	YES
03	TL-208	DUP	CP-5023 00-02	pCi/g	1.58E+00	3.40E-01	6.37E-01					06/02/16 00:00	4.18E+02	06/15/16 15:49	NO
04	AC-228	DO	CP-5023 00-02	pCi/g	1.66E+00	3.58E-01	7.72E-01					06/02/16 00:00	4.18E+02	06/15/16 15:49	YES
04	BI-214	DO	CP-5023 00-02	pCi/g	1.14E+00	1.91E-01	4.62E-01					06/02/16 00:00	4.18E+02	06/15/16 15:49	NO
04	K-40	DO	CP-5023 00-02	pCi/g	2.38E+01	3.03E+00	1.46E+00					06/02/16 00:00	4.18E+02	06/15/16 15:49	YES
04	PA-231	DO	CP-5023 00-02	pCi/g	6.10E-01	2.82E+00	4.17E+00					06/02/16 00:00	4.18E+02	06/15/16 15:49	YES
04	PB-210	DO	CP-5023 00-02	pCi/g	2.14E+00	2.01E+00	2.75E+00					06/02/16 00:00	4.18E+02	06/15/16 15:49	NO
04	PB-212	DO	CP-5023 00-02	pCi/g	1.90E+00	2.26E-01	3.76E-01					06/02/16 00:00	4.18E+02	06/15/16 15:49	NO
04	PB-214	DO	CP-5023 00-02	pCi/g	1.32E+00	2.36E-01	3.84E-01					06/02/16 00:00	4.18E+02	06/15/16 15:49	YES
04	TL-208	DO	CP-5023 00-02	pCi/g	1.46E+00	3.51E-01	6.43E-01					06/02/16 00:00	4.18E+02	06/15/16 15:49	YES
05	AC-228	TRG	CP-5023 02-05	pCi/g	1.60E+00	2.40E-01	3.45E-01					06/02/16 00:00	4.40E+02	06/15/16 16:18	NO
05	BI-214	TRG	CP-5023 02-05	pCi/g	1.22E+00	1.91E-01	2.42E-01					06/02/16 00:00	4.40E+02	06/15/16 16:18	YES
05	K-40	TRG	CP-5023 02-05	pCi/g	2.14E+01	2.54E+00	1.24E+00					06/02/16 00:00	4.40E+02	06/15/16 16:18	YES
05	PA-231	TRG	CP-5023 02-05	pCi/g	1.74E+00	1.61E+00	2.77E+00					06/02/16 00:00	4.40E+02	06/15/16 16:18	NO
05	PB-210	TRG	CP-5023 02-05	pCi/g	2.57E+00	1.84E+00	3.01E+00					06/02/16 00:00	4.40E+02	06/15/16 16:18	YES
05	PB-212	TRG	CP-5023 02-05	pCi/g	1.38E+00	1.94E-01	3.10E-01					06/02/16 00:00	4.40E+02	06/15/16 16:18	YES
05	PB-214	TRG	CP-5023 02-05	pCi/g	1.28E+00	1.63E-01	2.41E-01					06/02/16 00:00	4.40E+02	06/15/16 16:18	NO
05	TL-208	TRG	CP-5023 02-05	pCi/g	1.25E+00	1.99E-01	2.32E-01					06/02/16 00:00	4.40E+02	06/15/16 16:18	YES
06	AC-228	TRG	CP-5023 05-10	pCi/g	1.79E+00	3.68E-01	5.28E-01					06/02/16 00:00	3.79E+02	06/15/16 16:20	YES
06	BI-214	TRG	CP-5023 05-10	pCi/g	1.21E+00	2.16E-01	3.14E-01					06/02/16 00:00	3.79E+02	06/15/16 16:20	YES
06	K-40	TRG	CP-5023 05-10	pCi/g	2.46E+01	3.09E+00	1.48E+00					06/02/16 00:00	3.79E+02	06/15/16 16:20	YES
06	PA-231	TRG	CP-5023 05-10	pCi/g	-2.16E+00	2.80E+00	3.25E+00					06/02/16 00:00	3.79E+02	06/15/16 16:20	NO

Lab Fraction	Nuclide	Sample Desc	Client Identification	Activity Units	Results	Error Estimate	MDA	LSC Known	LCS %R	LCS Flag	RPD Flag	Sample Date	Sample Aliquot	Counting Date/Time	Identified
06	PB-210	TRG	CP-5023 05-10	pCi/g	2.32E+00	1.99E+00	3.29E+00					06/02/16 00:00	3.79E+02	06/15/16 16:20	YES
06	PB-212	TRG	CP-5023 05-10	pCi/g	1.99E+00	3.14E-01	2.99E-01					06/02/16 00:00	3.79E+02	06/15/16 16:20	YES
06	PB-214	TRG	CP-5023 05-10	pCi/g	1.35E+00	2.37E-01	2.71E-01					06/02/16 00:00	3.79E+02	06/15/16 16:20	YES
06	TL-208	TRG	CP-5023 05-10	pCi/g	1.38E+00	2.21E-01	1.45E-01					06/02/16 00:00	3.79E+02	06/15/16 16:20	YES
07	AC-228	TRG	CP-5023 10-15	pCi/g	2.04E+00	3.05E-01	4.99E-01					06/02/16 00:00	3.33E+02	06/15/16 17:19	YES
07	BI-214	TRG	CP-5023 10-15	pCi/g	1.28E+00	2.13E-01	3.07E-01					06/02/16 00:00	3.33E+02	06/15/16 17:19	YES
07	K-40	TRG	CP-5023 10-15	pCi/g	2.89E+01	3.39E+00	1.55E+00					06/02/16 00:00	3.33E+02	06/15/16 17:19	NO
07	PA-231	TRG	CP-5023 10-15	pCi/g	6.64E-01	2.00E+00	3.31E+00					06/02/16 00:00	3.33E+02	06/15/16 17:19	YES
07	PB-210	TRG	CP-5023 10-15	pCi/g	2.67E+00	2.20E+00	3.62E+00					06/02/16 00:00	3.33E+02	06/15/16 17:19	YES
07	PB-212	TRG	CP-5023 10-15	pCi/g	1.61E+00	2.39E-01	3.91E-01					06/02/16 00:00	3.33E+02	06/15/16 17:19	NO
07	PB-214	TRG	CP-5023 10-15	pCi/g	1.63E+00	1.93E-01	3.52E-01					06/02/16 00:00	3.33E+02	06/15/16 17:19	YES
07	TL-208	TRG	CP-5023 10-15	pCi/g	1.55E+00	2.66E-01	3.23E-01					06/02/16 00:00	3.33E+02	06/15/16 17:19	YES
08	AC-228	TRG	CP-5024 00-02	pCi/g	1.83E+00	3.40E-01	5.97E-01					06/02/16 00:00	3.92E+02	06/15/16 17:20	YES
08	BI-214	TRG	CP-5024 00-02	pCi/g	1.42E+00	2.30E-01	2.61E-01					06/02/16 00:00	3.92E+02	06/15/16 17:20	YES
08	K-40	TRG	CP-5024 00-02	pCi/g	2.15E+01	2.77E+00	1.33E+00					06/02/16 00:00	3.92E+02	06/15/16 17:20	NO
08	PA-231	TRG	CP-5024 00-02	pCi/g	9.20E-02	1.10E+00	2.99E+00					06/02/16 00:00	3.92E+02	06/15/16 17:20	NO
08	PB-210	TRG	CP-5024 00-02	pCi/g	7.90E-01	1.34E+00	2.08E+00					06/02/16 00:00	3.92E+02	06/15/16 17:20	YES
08	PB-212	TRG	CP-5024 00-02	pCi/g	1.48E+00	2.70E-01	3.50E-01					06/02/16 00:00	3.92E+02	06/15/16 17:20	YES
08	PB-214	TRG	CP-5024 00-02	pCi/g	1.56E+00	2.47E-01	2.78E-01					06/02/16 00:00	3.92E+02	06/15/16 17:20	YES
08	TL-208	TRG	CP-5024 00-02	pCi/g	1.14E+00	2.26E-01	2.79E-01					06/02/16 00:00	3.73E+02	06/15/16 17:21	YES
09	AC-228	TRG	CP-5024 02-05	pCi/g	2.00E+00	6.49E-01	1.70E+00					06/02/16 00:00	3.73E+02	06/15/16 17:21	YES
09	BI-214	TRG	CP-5024 02-05	pCi/g	1.22E+00	3.94E-01	6.89E-01					06/02/16 00:00	3.73E+02	06/15/16 17:21	YES
09	K-40	TRG	CP-5024 02-05	pCi/g	2.79E+01	5.53E+00	5.29E+00					06/02/16 00:00	3.73E+02	06/15/16 17:21	YES
09	PA-231	TRG	CP-5024 02-05	pCi/g	-1.31E-01	3.73E+00	7.17E+00					06/02/16 00:00	3.73E+02	06/15/16 17:21	NO
09	PB-210	TRG	CP-5024 02-05	pCi/g	7.21E-01	1.34E+00	2.08E+00					06/02/16 00:00	3.73E+02	06/15/16 17:21	YES
09	PB-212	TRG	CP-5024 02-05	pCi/g	2.31E+00	4.74E-01	6.08E-01					06/02/16 00:00	3.73E+02	06/15/16 17:21	YES
09	PB-214	TRG	CP-5024 02-05	pCi/g	1.50E+00	4.13E-01	7.59E-01					06/02/16 00:00	3.73E+02	06/15/16 17:21	YES
09	TL-208	TRG	CP-5024 02-05	pCi/g	1.88E+00	5.79E-01	7.75E-01					06/02/16 00:00	3.29E+02	06/15/16 18:00	YES
10	AC-228	TRG	CP-5024 05-10	pCi/g	2.41E+00	5.39E-01	9.14E-01					06/02/16 00:00	3.29E+02	06/15/16 18:00	YES
10	BI-214	TRG	CP-5024 05-10	pCi/g	1.24E+00	3.15E-01	4.04E-01					06/02/16 00:00	3.29E+02	06/15/16 18:00	YES
10	K-40	TRG	CP-5024 05-10	pCi/g	2.65E+01	3.51E+00	1.73E+00					06/02/16 00:00	3.29E+02	06/15/16 18:00	NO
10	PA-231	TRG	CP-5024 05-10	pCi/g	1.48E+00	1.27E+00	5.18E+00					06/02/16 00:00	3.29E+02	06/15/16 18:00	YES
10	PB-210	TRG	CP-5024 05-10	pCi/g	3.07E+00	2.52E+00	4.14E+00					06/02/16 00:00	3.29E+02	06/15/16 18:00	YES
10	PB-212	TRG	CP-5024 05-10	pCi/g	2.46E+00	2.94E-01	4.38E-01					06/02/16 00:00	3.29E+02	06/15/16 18:00	YES
10	PB-214	TRG	CP-5024 05-10	pCi/g	1.81E+00	2.77E-01	4.62E-01					06/02/16 00:00	3.29E+02	06/15/16 18:00	NO
10	TL-208	TRG	CP-5024 05-10	pCi/g	2.13E+00	4.22E-01	8.04E-01					06/02/16 00:00	3.29E+02	06/15/16 18:00	YES
11	AC-228	TRG	CP-5024 10-15	pCi/g	2.18E+00	4.21E-01	7.27E-01					06/02/16 00:00	2.67E+02	06/15/16 18:19	YES
11	BI-214	TRG	CP-5024 10-15	pCi/g	1.58E+00	3.17E-01	5.69E-01					06/02/16 00:00	2.67E+02	06/15/16 18:19	YES

Preliminary Data Report & Analytical Calculations
Work Order: 16-06040-Gamma-1

Eberline Analytical
Oak Ridge Laboratory

Lab Fraction	Nuclide	Sample Desc	Client Identification	Activity Units	Results	Error Estimate	MDA	LSC Known	LSC %R	LCS Flag	RPD Flag	Sample Date	Sample Aliquot	Counting Date/Time	Identified
11	K-40	TRG	CP-5024 10-15	pCi/g	3.11E+01	3.70E+00	1.69E+00					06/02/16 00:00	2.67E+02	06/15/16 18:19	YES
11	PA-231	TRG	CP-5024 10-15	pCi/g	1.98E+00	2.35E+00	4.05E+00					06/02/16 00:00	2.67E+02	06/15/16 18:19	NO
11	PB-210	TRG	CP-5024 10-15	pCi/g	3.57E+00	2.45E+00	3.99E+00					06/02/16 00:00	2.67E+02	06/15/16 18:19	YES
11	PB-212	TRG	CP-5024 10-15	pCi/g	1.90E+00	2.82E-01	4.65E-01					06/02/16 00:00	2.67E+02	06/15/16 18:19	NO
11	PB-214	TRG	CP-5024 10-15	pCi/g	1.70E+00	2.92E-01	4.42E-01					06/02/16 00:00	2.67E+02	06/15/16 18:19	YES
11	TL-208	TRG	CP-5024 10-15	pCi/g	1.86E+00	2.66E-01	2.14E-01					06/02/16 00:00	2.67E+02	06/15/16 18:19	YES
12	AC-228	TRG	CP-5025 00-02	pCi/g	1.16E+00	2.08E-01	3.09E-01					06/02/16 00:00	6.30E+02	06/15/16 18:21	YES
12	BI-214	TRG	CP-5025 00-02	pCi/g	8.59E-01	1.51E-01	2.17E-01					06/02/16 00:00	6.30E+02	06/15/16 18:21	YES
12	K-40	TRG	CP-5025 00-02	pCi/g	1.56E+01	1.89E+00	5.21E-01					06/02/16 00:00	6.30E+02	06/15/16 18:21	YES
12	PA-231	TRG	CP-5025 00-02	pCi/g	-2.22E+00	1.82E+00	2.00E+00					06/02/16 00:00	6.30E+02	06/15/16 18:21	NO
12	PB-210	TRG	CP-5025 00-02	pCi/g	1.14E+00	8.50E-01	1.36E+00					06/02/16 00:00	6.30E+02	06/15/16 18:21	NO
12	PB-212	TRG	CP-5025 00-02	pCi/g	9.73E-01	1.92E-01	1.94E-01					06/02/16 00:00	6.30E+02	06/15/16 18:21	YES
12	PB-214	TRG	CP-5025 00-02	pCi/g	1.06E+00	1.66E-01	1.91E-01					06/02/16 00:00	6.30E+02	06/15/16 18:21	YES
12	TL-208	TRG	CP-5025 00-02	pCi/g	9.27E-01	1.59E-01	8.58E-02					06/02/16 00:00	6.30E+02	06/15/16 18:21	YES
13	AC-228	TRG	CP-5025 02-05	pCi/g	1.41E+00	4.55E-01	1.09E+00					06/02/16 00:00	5.09E+02	06/15/16 18:21	YES
13	BI-214	TRG	CP-5025 02-05	pCi/g	1.23E+00	2.87E-01	1.76E-01					06/02/16 00:00	5.09E+02	06/15/16 18:21	YES
13	K-40	TRG	CP-5025 02-05	pCi/g	1.99E+01	3.63E+00	2.56E+00					06/02/16 00:00	5.09E+02	06/15/16 18:21	YES
13	PA-231	TRG	CP-5025 02-05	pCi/g	6.44E-01	2.23E+00	5.49E+00					06/02/16 00:00	5.09E+02	06/15/16 18:21	NO
13	PB-210	TRG	CP-5025 02-05	pCi/g	1.05E+00	1.17E+00	1.96E+00					06/02/16 00:00	5.09E+02	06/15/16 18:21	YES
13	PB-212	TRG	CP-5025 02-05	pCi/g	1.88E+00	3.59E-01	4.40E-01					06/02/16 00:00	5.09E+02	06/15/16 18:21	YES
13	PB-214	TRG	CP-5025 02-05	pCi/g	1.41E+00	3.22E-01	4.72E-01					06/02/16 00:00	5.09E+02	06/15/16 18:21	YES
13	TL-208	TRG	CP-5025 02-05	pCi/g	1.38E+00	3.40E-01	1.04E-01					06/02/16 00:00	5.09E+02	06/15/16 18:21	YES
14	AC-228	TRG	CP-5025 05-10	pCi/g	2.05E+00	3.24E-01	5.73E-01					06/02/16 00:00	3.76E+02	06/16/16 06:06	YES
14	BI-214	TRG	CP-5025 05-10	pCi/g	1.35E+00	2.22E-01	2.76E-01					06/02/16 00:00	3.76E+02	06/16/16 06:06	YES
14	K-40	TRG	CP-5025 05-10	pCi/g	2.21E+01	2.79E+00	9.11E-01					06/02/16 00:00	3.76E+02	06/16/16 06:06	YES
14	PA-231	TRG	CP-5025 05-10	pCi/g	-3.60E+00	3.19E+00	3.14E+00					06/02/16 00:00	3.76E+02	06/16/16 06:06	NO
14	PB-210	TRG	CP-5025 05-10	pCi/g	2.90E+00	1.89E+00	3.08E+00					06/02/16 00:00	3.76E+02	06/16/16 06:06	YES
14	PB-212	TRG	CP-5025 05-10	pCi/g	2.44E+00	3.96E-01	2.98E-01					06/02/16 00:00	3.76E+02	06/16/16 06:06	YES
14	PB-214	TRG	CP-5025 05-10	pCi/g	1.56E+00	2.41E-01	2.85E-01					06/02/16 00:00	3.76E+02	06/16/16 06:06	YES
14	TL-208	TRG	CP-5025 05-10	pCi/g	1.51E+00	2.46E-01	4.43E-02					06/02/16 00:00	3.76E+02	06/16/16 06:06	YES
15	AC-228	TRG	CP-5025 10-15	pCi/g	2.72E+00	6.98E-01	1.43E+00					06/02/16 00:00	3.02E+02	06/16/16 06:07	YES
15	BI-214	TRG	CP-5025 10-15	pCi/g	1.71E+00	4.67E-01	2.96E-01					06/02/16 00:00	3.02E+02	06/16/16 06:07	YES
15	K-40	TRG	CP-5025 10-15	pCi/g	3.32E+01	5.95E+00	3.78E+00					06/02/16 00:00	3.02E+02	06/16/16 06:07	YES
15	PA-231	TRG	CP-5025 10-15	pCi/g	6.23E+00	5.07E+00	8.99E+00					06/02/16 00:00	3.02E+02	06/16/16 06:07	NO
15	PB-210	TRG	CP-5025 10-15	pCi/g	-4.63E-01	5.36E-01	2.48E+00					06/02/16 00:00	3.02E+02	06/16/16 06:07	NO
15	PB-212	TRG	CP-5025 10-15	pCi/g	3.02E+00	5.54E-01	6.47E-01					06/02/16 00:00	3.02E+02	06/16/16 06:07	YES
15	PB-214	TRG	CP-5025 10-15	pCi/g	1.59E+00	4.80E-01	7.94E-01					06/02/16 00:00	3.02E+02	06/16/16 06:07	YES
15	TL-208	TRG	CP-5025 10-15	pCi/g	2.13E+00	5.09E-01	7.57E-01					06/02/16 00:00	3.02E+02	06/16/16 06:07	YES

**Rough Sample Preparation
 Log Book**

Work Order	Lab Deadline	Date Received in Prep	Date Sealed	Date Returned	Technician
16-06040	6/29/2016	6/14/2016	6/15/2016	6/16/2016	KSALLINGS

Bico Pulverizer SN: 000302

Eberline Fraction	Auxier & Associates, Inc. Client ID	Tare (g)		Gross (g)		Net (g)		Percent		Gamma		Special Info
		Pan Wt	Dry Wt	Wet Wt	Dry Wt	Wet Wt	Dry Wt	Liquid	Solid	Dry Wt	LEPS Wt.	
04	CP-5023 00-02	14.6100	491.7800	581.6600	491.7800	567.0500	477.1700	15.85%	84.15%	0.0000	0.0000	
05	CP-5023 02-05	14.6000	541.0500	653.5100	541.0500	638.9100	526.4500	17.60%	82.40%	0.0000	0.0000	
06	CP-5023 05-10	14.5500	457.6900	560.3300	457.6900	545.7800	443.1400	18.81%	81.19%	0.0000	0.0000	
07	CP-5023 10-15	14.5700	415.7200	530.6800	415.7200	516.1100	401.1500	22.27%	77.73%	0.0000	0.0000	
08	CP-5024 00-02	14.6100	461.7000	540.2500	461.7000	525.6400	447.0900	14.94%	85.06%	0.0000	0.0000	
09	CP-5024 02-05	14.5700	469.5400	563.9600	469.5400	549.3900	454.9700	17.19%	82.81%	0.0000	0.0000	
10	CP-5024 05-10	14.5600	412.4400	506.9900	412.4400	492.4300	397.8800	19.20%	80.80%	0.0000	0.0000	
11	CP-5024 10-15	14.5600	339.2500	436.9300	339.2500	422.3700	324.6900	23.13%	76.87%	0.0000	0.0000	
12	CP-5025 00-02	14.5500	720.3600	844.7800	720.3600	830.2300	705.8100	14.99%	85.01%	0.0000	0.0000	
13	CP-5025 02-05	14.6300	582.5100	700.9000	582.5100	686.2700	567.8800	17.25%	82.75%	0.0000	0.0000	
14	CP-5025 05-10	14.6000	454.1200	556.1100	454.1200	541.5100	439.5200	18.83%	81.17%	0.0000	0.0000	
15	CP-5025 10-15	14.6000	374.1000	479.2300	374.1000	464.6300	359.5000	22.63%	77.37%	0.0000	0.0000	

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

Kenny Seay

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* yps/gram	This Source yps	Uncertainty*, %			Calibration Method*
					U _A	U _B	U	
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)



KB
6/15/16Analysis Report for 1606040-01
GAS-1302

GAMMA SPECTRUM ANALYSIS

Sample Identification : 1606040-01
Sample Description : GAS-1302
Sample Type : SOIL

Sample Size : 7.360E+02 grams
Facility : Countroom

Sample Taken On : 7/1/2013 1:07:30PM
Acquisition Started : 6/15/2016 4:50:03PM

Procedure : GAS-1402 pCi
Operator : Administrator
Detector Name : GE4
Geometry : GAS-1402
Live Time : 1800.0 seconds
Real Time : 1818.7 seconds

Dead Time : 1.03 %

Peak Locate Threshold : 2.50
Peak Locate Range (in channels) : 1 - 4096
Peak Area Range (in channels) : 14 - 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 : 38945

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AC
6/16/16

Analysis Report for 1606040-01
GAS-1302

PEAK LOCATE REPORT

Peak Locate Performed on : 6/15/2016 5:20:25PM
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	22.48	21.73	0.0000	0.00
2	32.17	31.42	0.0000	0.00
3	53.81	53.07	0.0000	0.00
4	59.68	58.94	0.0000	0.00
5	68.97	68.24	0.0000	0.00
6	87.96	87.23	0.0000	0.00
7	122.19	121.48	0.0000	0.00
8	136.80	136.10	0.0000	0.00
9	332.18	331.56	0.0000	0.00
10	475.17	474.61	0.0000	0.00
11	661.66	661.19	0.0000	0.00
12	756.07	755.65	0.0000	0.00
13	826.70	826.32	0.0000	0.00
14	833.94	833.56	0.0000	0.00
15	1172.96	1172.77	0.0000	0.00
16	1332.17	1332.06	0.0000	0.00
17	1386.70	1386.62	0.0000	0.00
18	1460.36	1460.33	0.0000	0.00
19	1504.08	1504.08	0.0000	0.00
20	1510.29	1510.30	0.0000	0.00
21	1588.26	1588.32	0.0000	0.00
22	1656.92	1657.01	0.0000	0.00
23	1664.30	1664.40	0.0000	0.00
24	1835.22	1835.43	0.0000	0.00
25	1975.28	1975.58	0.0000	0.00
26	1988.97	1989.28	0.0000	0.00
27	2096.86	2097.25	0.0000	0.00
28	2137.45	2137.87	0.0000	0.00
29	2237.11	2237.60	0.0000	0.00
30	2243.00	2243.50	0.0000	0.00
31	2327.28	2327.83	0.0000	0.00
32	2375.91	2376.50	0.0000	0.00
33	2504.71	2505.39	0.0000	0.00
34	2613.73	2614.50	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1606040-01

GAS-1302

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 6/15/2016 5:20:25PM

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	22.48	19 -	25	21.73	5.01E+04	670.05	4.69E+04	2.41
2	32.17	30 -	34	31.42	8.14E+02	196.38	7.94E+03	2.14
M 3	53.81	44 -	63	53.07	1.69E+04	915.69	4.99E+04	6.63
m 4	59.68	44 -	63	58.94	5.66E+04	586.32	1.65E+04	2.25
5	68.97	65 -	72	68.24	4.87E+02	334.32	1.84E+04	3.22
6	87.96	80 -	93	87.23	1.92E+04	552.31	2.51E+04	2.40
7	122.19	117 -	125	121.48	2.89E+03	299.68	1.20E+04	2.30
8	136.80	133 -	139	136.10	2.55E+02	219.36	8.52E+03	1.74
9	332.18	328 -	335	331.56	1.54E+02	174.80	4.99E+03	2.96
10	475.17	471 -	478	474.61	1.94E+02	166.11	4.44E+03	4.04
11	661.66	656 -	667	661.19	1.24E+04	282.35	3.69E+03	2.52
12	756.07	752 -	760	755.65	1.79E+02	120.47	2.12E+03	5.34
13	826.70	822 -	830	826.32	1.18E+02	130.56	2.54E+03	4.25
14	833.94	830 -	837	833.56	9.98E+01	115.93	2.18E+03	3.83
15	1172.96	1167 -	1180	1172.77	9.83E+03	234.14	1.67E+03	2.72
16	1332.17	1325 -	1339	1332.06	8.93E+03	197.80	3.46E+02	2.84
17	1386.70	1381 -	1392	1386.62	3.78E+01	20.78	3.24E+01	7.02
18	1460.36	1455 -	1466	1460.33	3.96E+01	17.20	1.48E+01	3.25
M 19	1504.08	1502 -	1515	1504.08	1.19E+01	9.38	1.45E+01	2.81
m 20	1510.29	1502 -	1515	1510.30	1.24E+01	16.91	2.62E+01	3.26
21	1588.26	1584 -	1592	1588.32	1.70E+01	15.54	2.61E+01	0.99
M 22	1656.92	1652 -	1667	1657.01	1.31E+01	13.82	1.61E+01	3.97
m 23	1664.30	1652 -	1667	1664.40	1.30E+01	9.21	7.88E+00	4.23
24	1835.22	1831 -	1838	1835.43	3.69E+01	16.37	2.02E+01	1.67
25	1975.28	1972 -	1979	1975.58	9.86E+00	13.42	2.23E+01	1.56
26	1988.97	1986 -	1991	1989.28	8.65E+00	7.00	2.70E+00	1.90
27	2096.86	2094 -	2100	2097.25	8.00E+00	5.66	0.00E+00	2.75
28	2137.45	2134 -	2142	2137.87	1.05E+01	8.50	5.08E+00	5.22
29	2237.11	2234 -	2240	2237.60	7.33E+00	6.95	3.33E+00	1.20
30	2243.00	2240 -	2247	2243.50	7.28E+00	7.21	3.44E+00	2.90
31	2327.28	2325 -	2330	2327.83	6.00E+00	4.90	0.00E+00	2.74
32	2375.91	2373 -	2379	2376.50	8.00E+00	5.66	0.00E+00	2.70
33	2504.71	2501 -	2509	2505.39	5.10E+01	14.28	0.00E+00	2.46
34	2613.73	2610 -	2617	2614.50	8.00E+00	5.66	0.00E+00	2.99

Analysis Report for 1606040-01

GAS-1302

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

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 6/15/2016 5:20:25PM

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	22.48	19 - 25	5.01E+04	670.05	4.69E+04	4.10E+02
	2	32.17	30 - 34	8.14E+02	196.38	7.94E+03	1.75E+02
M	3	53.81	44 - 63	1.69E+04	915.69	4.99E+04	3.67E+02
m	4	59.68	44 - 63	5.66E+04	586.32	1.65E+04	2.11E+02
	5	68.97	65 - 72	4.87E+02	334.32	1.84E+04	2.72E+02
	6	87.96	80 - 93	1.92E+04	552.31	2.51E+04	3.93E+02
	7	122.19	117 - 125	2.89E+03	299.68	1.20E+04	2.30E+02
	8	136.80	133 - 139	2.55E+02	219.36	8.52E+03	1.78E+02
	9	332.18	328 - 335	1.54E+02	174.80	4.99E+03	1.42E+02
	10	475.17	471 - 478	1.94E+02	166.11	4.44E+03	1.35E+02
	11	661.66	656 - 667	1.24E+04	282.35	3.69E+03	1.42E+02
	12	756.07	752 - 760	1.79E+02	120.47	2.12E+03	9.66E+01
	13	826.70	822 - 830	1.18E+02	130.56	2.54E+03	1.06E+02
	14	833.94	830 - 837	9.98E+01	115.93	2.18E+03	9.39E+01
	15	1172.96	1167 - 1180	9.83E+03	234.14	1.67E+03	1.02E+02
	16	1332.17	1325 - 1339	8.93E+03	197.80	3.46E+02	4.79E+01
	17	1386.70	1381 - 1392	3.78E+01	20.78	3.24E+01	1.38E+01
	18	1460.36	1455 - 1466	3.96E+01	17.20	1.48E+01	9.64E+00
M	19	1504.08	1502 - 1515	1.19E+01	9.38	1.45E+01	6.27E+00
m	20	1510.29	1502 - 1515	1.24E+01	16.91	2.62E+01	8.42E+00
	21	1588.26	1584 - 1592	1.70E+01	15.54	2.61E+01	1.08E+01
M	22	1656.92	1652 - 1667	1.31E+01	13.82	1.61E+01	6.59E+00
m	23	1664.30	1652 - 1667	1.30E+01	9.21	7.88E+00	4.61E+00
	24	1835.22	1831 - 1838	3.69E+01	16.37	2.02E+01	9.02E+00
	25	1975.28	1972 - 1979	9.86E+00	13.42	2.23E+01	9.75E+00
	26	1988.97	1986 - 1991	8.65E+00	7.00	2.70E+00	3.12E+00
	27	2096.86	2094 - 2100	8.00E+00	5.66	0.00E+00	0.00E+00
	28	2137.45	2134 - 2142	1.05E+01	8.50	5.08E+00	4.53E+00
	29	2237.11	2234 - 2240	7.33E+00	6.95	3.33E+00	3.58E+00
	30	2243.00	2240 - 2247	7.28E+00	7.21	3.44E+00	3.93E+00
	31	2327.28	2325 - 2330	6.00E+00	4.90	0.00E+00	0.00E+00

Analysis Report for 1606040-01

GAS-1302

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
32	2375.91	2373 -	2379	8.00E+00	5.66	0.00E+00	0.00E+00
33	2504.71	2501 -	2509	5.10E+01	14.28	0.00E+00	0.00E+00
34	2613.73	2610 -	2617	8.00E+00	5.66	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 : 6/15/2016 5:20:25PM

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	19 -	25	21.73	5.01E+04	670.05	4.69E+04	.....
	2	30 -	34	31.42	8.14E+02	196.38	7.94E+03	.....
M	3	44 -	63	53.07	1.69E+04	915.69	4.99E+04	.....
m	4	44 -	63	58.94	5.66E+04	586.32	1.65E+04	AM-241
	5	65 -	72	68.24	4.87E+02	334.32	1.84E+04	.....
	6	80 -	93	87.23	1.92E+04	552.31	2.51E+04	CD-109 LU-176 SN-126
	7	117 -	125	121.48	2.89E+03	299.68	1.20E+04	CO-57 EU-152 EU-154
	8	133 -	139	136.10	2.55E+02	219.36	8.52E+03	CO-57 SE-75
	9	328 -	335	331.56	1.54E+02	174.80	4.99E+03	.....
	10	471 -	478	474.61	1.94E+02	166.11	4.44E+03	.....
	11	656 -	667	661.19	1.24E+04	282.35	3.69E+03	CS-137
	12	752 -	760	755.65	1.79E+02	120.47	2.12E+03	ZR-95
	13	822 -	830	826.32	1.18E+02	130.56	2.54E+03	.....
	14	830 -	837	833.56	9.98E+01	115.93	2.18E+03	MN-54
	15	1167 -	1180	1172.77	9.83E+03	234.14	1.67E+03	CO-60
	16	1325 -	1339	1332.06	8.93E+03	197.80	3.46E+02	CO-60
	17	1381 -	1392	1386.62	3.78E+01	20.78	3.24E+01	.....
	18	1455 -	1466	1460.33	3.96E+01	17.20	1.48E+01	K-40

Analysis Report for 1606040-01

GAS-1302

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
M	19	1504.08	1502 -	1515	1504.08	1.19E+01	9.38	1.45E+01	.....
m	20	1510.29	1502 -	1515	1510.30	1.24E+01	16.91	2.62E+01	.....
	21	1588.26	1584 -	1592	1588.32	1.70E+01	15.54	2.61E+01	.....
M	22	1656.92	1652 -	1667	1657.01	1.31E+01	13.82	1.61E+01	.....
m	23	1664.30	1652 -	1667	1664.40	1.30E+01	9.21	7.88E+00	.....
	24	1835.22	1831 -	1838	1835.43	3.69E+01	16.37	2.02E+01	Y-88
	25	1975.28	1972 -	1979	1975.58	9.86E+00	13.42	2.23E+01	.....
	26	1988.97	1986 -	1991	1989.28	8.65E+00	7.00	2.70E+00	.....
	27	2096.86	2094 -	2100	2097.25	8.00E+00	5.66	0.00E+00	.....
	28	2137.45	2134 -	2142	2137.87	1.05E+01	8.50	5.08E+00	.....
	29	2237.11	2234 -	2240	2237.60	7.33E+00	6.95	3.33E+00	.....
	30	2243.00	2240 -	2247	2243.50	7.28E+00	7.21	3.44E+00	.....
	31	2327.28	2325 -	2330	2327.83	6.00E+00	4.90	0.00E+00	.....
	32	2375.91	2373 -	2379	2376.50	8.00E+00	5.66	0.00E+00	.....
	33	2504.71	2501 -	2509	2505.39	5.10E+01	14.28	0.00E+00	.....
	34	2613.73	2610 -	2617	2614.50	8.00E+00	5.66	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 : 6/15/2016 5:20:25PM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	22.48	5.01E+04	670.05	3.04E-02	1.78E-03
	2	32.17	8.14E+02	196.38	2.90E-02	1.78E-03
M	3	53.81	1.69E+04	915.69	2.49E-02	1.78E-03
m	4	59.68	5.66E+04	586.32	2.39E-02	1.78E-03
	5	68.97	4.87E+02	334.32	2.23E-02	1.73E-03
	6	87.96	1.92E+04	552.31	1.96E-02	1.63E-03
	7	122.19	2.89E+03	299.68	1.59E-02	1.52E-03
	8	136.80	2.55E+02	219.36	1.47E-02	1.42E-03
	9	332.18	1.54E+02	174.80	6.98E-03	8.02E-04
	10	475.17	1.94E+02	166.11	4.95E-03	6.14E-04
	11	661.66	1.24E+04	282.35	3.57E-03	3.40E-04
	12	756.07	1.79E+02	120.47	3.13E-03	2.87E-04
	13	826.70	1.18E+02	130.56	2.87E-03	2.48E-04
	14	833.94	9.98E+01	115.93	2.85E-03	2.44E-04

: 00272

Analysis Report for 1606040-01

GAS-1302

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	15	1172.96	9.83E+03	234.14	2.05E-03	1.73E-04
	16	1332.17	8.93E+03	197.80	1.83E-03	2.16E-04
	17	1386.70	3.78E+01	20.78	1.76E-03	2.04E-04
	18	1460.36	3.96E+01	17.20	1.68E-03	1.89E-04
M	19	1504.08	1.19E+01	9.38	1.64E-03	1.80E-04
m	20	1510.29	1.24E+01	16.91	1.64E-03	1.79E-04
	21	1588.26	1.70E+01	15.54	1.57E-03	1.63E-04
M	22	1656.92	1.31E+01	13.82	1.51E-03	1.48E-04
m	23	1664.30	1.30E+01	9.21	1.51E-03	1.47E-04
	24	1835.22	3.69E+01	16.37	1.39E-03	1.11E-04
	25	1975.28	9.86E+00	13.42	1.31E-03	1.11E-04
	26	1988.97	8.65E+00	7.00	1.30E-03	1.11E-04
	27	2096.86	8.00E+00	5.66	1.25E-03	1.11E-04
	28	2137.45	1.05E+01	8.50	1.23E-03	1.11E-04
	29	2237.11	7.33E+00	6.95	1.19E-03	1.11E-04
	30	2243.00	7.28E+00	7.21	1.19E-03	1.11E-04
	31	2327.28	6.00E+00	4.90	1.16E-03	1.11E-04
	32	2375.91	8.00E+00	5.66	1.14E-03	1.11E-04
	33	2504.71	5.10E+01	14.28	1.10E-03	1.11E-04
	34	2613.73	8.00E+00	5.66	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 : 6/15/2016 5:20:25PM

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	22.48	5.01E+04	670.05			5.01E+04	6.70E+02
	2	32.17	8.14E+02	196.38			8.14E+02	1.96E+02
M	3	53.81	1.69E+04	915.69	1.87E+00	1.53E+00	1.69E+04	9.16E+02
m	4	59.68	5.66E+04	586.32			5.66E+04	5.86E+02
	5	68.97	4.87E+02	334.32			4.87E+02	3.34E+02
	6	87.96	1.92E+04	552.31			1.92E+04	5.52E+02
	7	122.19	2.89E+03	299.68			2.89E+03	3.00E+02
	8	136.80	2.55E+02	219.36			2.55E+02	2.19E+02
	9	332.18	1.54E+02	174.80			1.54E+02	1.75E+02
	10	475.17	1.94E+02	166.11			1.94E+02	1.66E+02

: 00273

Analysis Report for 1606040-01

GAS-1302

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
11	661.66	1.24E+04	282.35	9.53E-01	1.28E+00	1.24E+04	2.82E+02
12	756.07	1.79E+02	120.47			1.79E+02	1.20E+02
13	826.70	1.18E+02	130.56			1.18E+02	1.31E+02
14	833.94	9.98E+01	115.93			9.98E+01	1.16E+02
15	1172.96	9.83E+03	234.14			9.83E+03	2.34E+02
16	1332.17	8.93E+03	197.80			8.93E+03	1.98E+02
17	1386.70	3.78E+01	20.78			3.78E+01	2.08E+01
18	1460.36	3.96E+01	17.20	4.89E-01	9.26E-01	3.91E+01	1.72E+01
M 19	1504.08	1.19E+01	9.38			1.19E+01	9.38E+00
m 20	1510.29	1.24E+01	16.91			1.24E+01	1.69E+01
21	1588.26	1.70E+01	15.54			1.70E+01	1.55E+01
M 22	1656.92	1.31E+01	13.82			1.31E+01	1.38E+01
m 23	1664.30	1.30E+01	9.21			1.30E+01	9.21E+00
24	1835.22	3.69E+01	16.37			3.69E+01	1.64E+01
25	1975.28	9.86E+00	13.42			9.86E+00	1.34E+01
26	1988.97	8.65E+00	7.00			8.65E+00	7.00E+00
27	2096.86	8.00E+00	5.66			8.00E+00	5.66E+00
28	2137.45	1.05E+01	8.50			1.05E+01	8.50E+00
29	2237.11	7.33E+00	6.95			7.33E+00	6.95E+00
30	2243.00	7.28E+00	7.21			7.28E+00	7.21E+00
31	2327.28	6.00E+00	4.90			6.00E+00	4.90E+00
32	2375.91	8.00E+00	5.66			8.00E+00	5.66E+00
33	2504.71	5.10E+01	14.28			5.10E+01	1.43E+01
34	2613.73	8.00E+00	5.66			8.00E+00	5.66E+00

M = First peak in a multiplet region

m = Other peak in a multiplet region

F = Fitted singlet

Errors quoted at 2.000sigma

AREA CORRECTION REPORT REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 6/15/2016 5:20:25PM

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	22.48	5.01E+04	670.05			5.01E+04	6.70E+02
2	32.17	8.14E+02	196.38			8.14E+02	1.96E+02
M 3	53.81	1.69E+04	915.69	1.87E+00	1.53E+00	1.69E+04	9.16E+02
m 4	59.68	5.66E+04	586.32			5.66E+04	5.86E+02

: 00274

Analysis Report for 1606040-01

GAS-1302

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
5	68.97	4.87E+02	334.32			4.87E+02	3.34E+02
6	87.96	1.92E+04	552.31			1.92E+04	5.52E+02
7	122.19	2.89E+03	299.68			2.89E+03	3.00E+02
8	136.80	2.55E+02	219.36			2.55E+02	2.19E+02
9	332.18	1.54E+02	174.80			1.54E+02	1.75E+02
10	475.17	1.94E+02	166.11			1.94E+02	1.66E+02
11	661.66	1.24E+04	282.35	9.53E-01	1.28E+00	1.24E+04	2.82E+02
12	756.07	1.79E+02	120.47			1.79E+02	1.20E+02
13	826.70	1.18E+02	130.56			1.18E+02	1.31E+02
14	833.94	9.98E+01	115.93			9.98E+01	1.16E+02
15	1172.96	9.83E+03	234.14			9.83E+03	2.34E+02
16	1332.17	8.93E+03	197.80			8.93E+03	1.98E+02
17	1386.70	3.78E+01	20.78			3.78E+01	2.08E+01
18	1460.36	3.96E+01	17.20	4.89E-01	9.26E-01	3.91E+01	1.72E+01
M	19	1504.08	1.19E+01			1.19E+01	9.38E+00
m	20	1510.29	1.24E+01			1.24E+01	1.69E+01
	21	1588.26	1.70E+01			1.70E+01	1.55E+01
M	22	1656.92	1.31E+01			1.31E+01	1.38E+01
m	23	1664.30	1.30E+01			1.30E+01	9.21E+00
	24	1835.22	3.69E+01			3.69E+01	1.64E+01
	25	1975.28	9.86E+00			9.86E+00	1.34E+01
	26	1988.97	8.65E+00			8.65E+00	7.00E+00
	27	2096.86	8.00E+00			8.00E+00	5.66E+00
	28	2137.45	1.05E+01			1.05E+01	8.50E+00
	29	2237.11	7.33E+00			7.33E+00	6.95E+00
	30	2243.00	7.28E+00			7.28E+00	7.21E+00
	31	2327.28	6.00E+00			6.00E+00	4.90E+00
	32	2375.91	8.00E+00			8.00E+00	5.66E+00
	33	2504.71	5.10E+01			5.10E+01	1.43E+01
	34	2613.73	8.00E+00			8.00E+00	5.66E+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	0.968	1460.81 *	10.67	4.44E+00	2.02E+00

: 00275

Analysis Report for 1606040-01
GAS-1302

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
MN-54	0.831	834.83 *	99.97	7.85E+00	9.14E+00
CO-57	0.920	122.06 *	85.51	6.85E+01	9.72E+00
		136.48 *	10.60	5.29E+01	4.58E+01
CO-60	0.985	1173.22 *	100.00	1.44E+02	1.26E+01
		1332.49 *	100.00	1.47E+02	1.77E+01
CD-109	0.972	88.03 *	3.72	2.69E+03	2.86E+02
SN-126	0.976	87.57 *	37.00	5.39E+01	4.74E+00
CS-137	1.000	661.65 *	85.12	8.92E+01	8.75E+00
AM-241	0.997	59.54 *	35.90	1.35E+02	1.02E+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 : 6/15/2016 5:20:25PM
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	2.78383E+01	0.67		
	2	4.52472E-01	12.06		
M	3	9.36619E+00	2.72		
	5	2.70436E-01	34.34		
	9	8.52951E-02	56.93		
	10	1.07854E-01	42.78		
	12	9.96453E-02	33.58	Tol.	ZR-95
	13	6.57720E-02	55.14		
	17	2.09877E-02	27.51		
M	19	6.62021E-03	39.36		
m	20	6.86466E-03	68.43		
	21	9.42593E-03	45.80		
M	22	7.27196E-03	52.79		
m	23	7.24233E-03	35.31		
	24	2.05024E-02	22.18	Sum	
	25	5.47619E-03	68.05		
	26	4.80556E-03	40.46		
	27	4.44444E-03	35.36		
	28	5.81197E-03	40.63		
	29	4.07407E-03	47.36		

Analysis Report for 1606040-01

GAS-1302

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
30	2243.00	4.04321E-03	49.54		
31	2327.28	3.33333E-03	40.82		
32	2375.91	4.44444E-03	35.36		
33	2504.71	2.83333E-02	14.00	Sum	
34	2613.73	4.44444E-03	35.36	Tol.	TL-208

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

NUCLIDE IDENTIFICATION REPORT

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

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.96	1460.81 *	10.67	4.44E+00	2.02E+00
MN-54	0.83	834.83 *	99.97	7.85E+00	9.14E+00
CO-57	0.92	122.06 *	85.51	6.85E+01	9.72E+00
		136.48 *	10.60	5.29E+01	4.58E+01
CO-60	0.98	1173.22 *	100.00	1.44E+02	1.26E+01
		1332.49 *	100.00	1.47E+02	1.77E+01
CD-109	0.97	88.03 *	3.72	2.69E+03	2.86E+02
SN-126	0.97	87.57 *	37.00	5.39E+01	4.74E+00
CS-137	1.00	661.65 *	85.12	8.92E+01	8.75E+00
AM-241	0.99	59.54 *	35.90	1.35E+02	1.02E+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 1606040-01

GAS-1302

INTERFERENCE CORRECTED REPORT

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
K-40	0.968	4.44E+00	2.02E+00	
MN-54	0.831	7.85E+00	9.14E+00	
CO-57	0.920	6.79E+01	9.51E+00	
CO-60	0.985	1.45E+02	1.02E+01	
? CD-109	0.972	2.69E+03	2.86E+02	
? SN-126	0.976	5.39E+01	4.74E+00	
CS-137	1.000	8.92E+01	8.75E+00	
AM-241	0.997	1.35E+02	1.02E+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 1606040-01

GAS-1302

 UNIDENTIFIED PEAKS

Peak Locate Performed on : 6/15/2016 5:20:25PM
 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	22.48	2.78383E+01	0.67		
2	32.17	4.52472E-01	12.06		
M 3	53.81	9.36619E+00	2.72		
5	68.97	2.70436E-01	34.34		
9	332.18	8.52951E-02	56.93		
10	475.17	1.07854E-01	42.78		
12	756.07	9.96453E-02	33.58	Tol.	ZR-95
13	826.70	6.57720E-02	55.14		
17	1386.70	2.09877E-02	27.51		
M 19	1504.08	6.62021E-03	39.36		
m 20	1510.29	6.86466E-03	68.43		
21	1588.26	9.42593E-03	45.80		
M 22	1656.92	7.27196E-03	52.79		
m 23	1664.30	7.24233E-03	35.31		
24	1835.22	2.05024E-02	22.18	Sum	
25	1975.28	5.47619E-03	68.05		
26	1988.97	4.80556E-03	40.46		
27	2096.86	4.44444E-03	35.36		
28	2137.45	5.81197E-03	40.63		
29	2237.11	4.07407E-03	47.36		
30	2243.00	4.04321E-03	49.54		
31	2327.28	3.33333E-03	40.82		
32	2375.91	4.44444E-03	35.36		
33	2504.71	2.83333E-02	14.00	Sum	
34	2613.73	4.44444E-03	35.36	Tol.	TL-208

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

Analysis Report for 1606040-01

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	-1.58E+05	1.16E+07	1.16E+07
+	NA-22	1274.54	99.94	-2.22E-02	1.41E+00	1.41E+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	6.79E-02	3.71E-01	3.71E-01
+	K-40	1460.81	* 10.67	4.44E+00	2.52E+00	2.52E+00
+	@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88	94.40	-2.11E+01	4.76E-01	4.76E-01
		78.34	96.00	5.15E-03		5.13E-01
+	SC-46	889.25	99.98	-3.37E+03	1.06E+04	1.06E+04
		1120.51	99.99	-4.91E+02		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	2.28E+12	4.13E+12	4.13E+12
+	MN-54	834.83	* 99.97	7.85E+00	1.50E+01	1.50E+01
+	CO-56	846.75	99.96	1.11E+03	1.11E+04	1.71E+04
		1037.75	14.03	4.70E+04		1.42E+05
		1238.25	67.00	1.90E+03		1.49E+04
		1771.40	15.51	-1.10E+04		3.03E+04
		2598.48	16.90	1.51E+03		1.11E+04
+	CO-57	122.06	* 85.51	6.85E+01	1.10E+01	1.10E+01
		136.48	* 10.60	5.29E+01		7.46E+01
+	CO-58	810.76	99.40	3.08E+03	4.73E+04	4.73E+04
+	FE-59	1099.22	56.50	-9.81E+06	2.99E+07	5.19E+07
		1291.56	43.20	-3.75E+06		2.99E+07
+	CO-60	1173.22	* 100.00	1.44E+02	1.62E+00	3.04E+00
		1332.49	* 100.00	1.47E+02		1.62E+00
+	ZN-65	1115.52	50.75	3.20E+01	6.34E+01	6.34E+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	1.13E+04	4.31E+02	1.75E+03
		136.00	59.20	4.91E+00		4.31E+02
		264.65	59.80	-1.63E+02		5.93E+02
		279.53	25.20	-3.43E+02		1.41E+03
		400.65	11.40	9.63E+02		3.94E+03
+	RB-82	776.52	13.00	3.42E+12	4.60E+13	4.60E+13
+	RB-83	520.41	46.00	2.95E+03	1.21E+04	1.21E+04
		529.64	30.30	8.10E+03		1.80E+04
		552.65	16.40	-2.14E+03		3.25E+04
+	KR-85	513.99	0.43	3.87E+01	2.64E+02	2.64E+02
+	SR-85	513.99	99.27	1.45E+04	9.87E+04	9.87E+04

Analysis Report for: 1606040-01

GAS-1302

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	Y-88	898.02	93.40	2.13E+02	6.07E+02	1.77E+03
		1836.01	99.38	-1.22E+02		6.07E+02
+	NB-93M	16.57	9.43	-1.38E+02	4.74E+00	4.74E+00
+	NB-94	702.63	100.00	3.70E-01	1.01E+00	1.01E+00
		871.10	100.00	-2.24E-01		1.34E+00
+	NB-95	765.79	99.81	2.58E+08	2.08E+09	2.08E+09
+	@ NB-95M	235.69	25.00	1.00E+26	1.00E+26	1.00E+26
+	ZR-95	724.18	43.70	-4.79E+04	2.35E+05	2.78E+05
		756.72	55.30	6.29E+04		2.35E+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	5.12E+07	1.89E+08	1.89E+08
+	RU-106	621.84	9.80	-1.77E+01	7.48E+01	7.48E+01
+	AG-108M	433.93	89.90	-3.36E-01	1.05E+00	1.05E+00
		614.37	90.40	2.76E-01		1.08E+00
		722.95	90.50	-6.28E-01		1.12E+00
+	CD-109	88.03	* 3.72	2.69E+03	1.11E+02	1.11E+02
+	AG-110M	657.75	93.14	1.05E+00	3.14E+01	5.52E+01
		677.61	10.53	1.00E+02		1.86E+02
		706.67	16.46	3.07E+01		1.22E+02
		763.93	21.98	-5.67E+00		9.88E+01
		884.67	71.63	-2.41E+00		3.87E+01
		1384.27	23.94	4.08E-01		3.14E+01
+	CD-113M	263.70	0.02	-9.38E+02	3.43E+03	3.43E+03
+	SN-113	255.12	1.93	-1.41E+03	8.74E+02	2.37E+04
		391.69	64.90	2.73E+01		8.74E+02
+	TE123M	159.00	84.10	-2.90E+01	3.23E+02	3.23E+02
+	SB-124	602.71	97.87	-4.91E+04	1.90E+05	2.41E+05
		645.85	7.26	1.60E+06		3.54E+06
		722.78	11.10	-1.91E+06		2.26E+06
		1691.02	49.00	5.67E+04		1.90E+05
+	I-125	35.49	6.49	-3.01E+06	1.20E+06	1.20E+06
+	SB-125	176.33	6.89	-5.93E+00	6.51E+00	1.66E+01
		427.89	29.33	-2.45E+00		6.51E+00
		463.38	10.35	-6.31E+00		2.02E+01
		600.56	17.80	-2.25E+00		1.10E+01
		635.90	11.32	-4.21E+00		1.85E+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	5.39E+01	2.22E+00	2.22E+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	-6.27E+00	6.98E-01	6.98E-01
		33.60	13.20	-1.24E+01		2.26E+00

Analysis Report for 1606040-01

GAS-1302

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	I-129	39.58	7.52	-2.33E+01	6.98E-01	4.50E+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	2.30E-02	1.61E+00	1.81E+00
		302.84	17.80	3.83E-01		4.85E+00
		356.01	60.00	1.10E+00		1.61E+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	-1.19E+01	2.60E+00	2.85E+01
		569.32	15.43	-8.64E+00		1.56E+01
		604.70	97.60	-9.98E-01		2.60E+00
		795.84	85.40	1.95E+00		3.76E+00
		801.93	8.73	-2.21E+01		3.59E+01
+	CS-135	268.24	16.00	7.85E-01	4.28E+00	4.28E+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	8.92E+01	2.07E+00	2.07E+00
+	LA-138	788.74	34.00	-1.63E+00	4.34E-01	3.30E+00
		1435.80	66.00	-4.32E-01		4.34E-01
+	CE-139	165.85	80.35	1.24E+02	1.56E+02	1.56E+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	6.39E+07	1.02E+10	1.02E+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	-1.51E+00	6.34E+01	6.34E+01
+	PM-144	476.78	42.00	4.03E-02	7.58E+00	1.87E+01

Analysis Report for 1606040-01

GAS-1302

<i>Nuclide Name</i>	<i>Energy (keV)</i>	<i>Yield(%)</i>	<i>Activity (pCi/grams)</i>	<i>Nuclide MDA (pCi/grams)</i>	<i>Line MDA (pCi/grams)</i>	
	PM-144	618.01	98.60	-3.30E+00	7.58E+00	7.58E+00
		696.49	99.49	8.01E-01		7.83E+00
+	PM-145	36.85	21.70	-5.79E+00	8.78E-01	1.60E+00
		37.36	39.70	-4.00E+00		8.78E-01
		42.30	15.10	-5.56E+00		2.89E+00
		72.40	2.31	2.44E+00		2.24E+01
+	PM-146	453.90	39.94	-2.32E-01	3.57E+00	3.57E+00
		735.90	14.01	-1.93E+00		1.06E+01
		747.13	13.10	2.65E+00		1.20E+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	2.05E+01	2.93E+00	3.20E+00
		244.69	5.40	-6.96E+00		1.46E+01
		344.27	19.13	-1.48E+00		4.65E+00
		778.89	9.20	1.12E+00		1.42E+01
		964.01	10.40	2.70E-01		1.74E+01
		1085.78	7.22	-5.91E+00		2.41E+01
		1112.02	9.60	4.00E+00		1.86E+01
		1407.95	14.94	1.23E+00		2.93E+00
+	GD-153	97.43	31.30	1.36E+01	2.86E+01	2.86E+01
		103.18	22.20	2.18E+00		4.17E+01
+	EU-154	123.07	40.50	1.17E+01	1.77E+00	1.77E+00
		723.30	19.70	-3.58E+00		6.41E+00
		873.19	11.50	-2.93E+00		1.48E+01
		996.32	10.30	-2.62E+00		1.76E+01
		1004.76	17.90	-9.31E-01		1.03E+01
		1274.45	35.50	-3.58E-02		2.28E+00
+	EU-155	86.50	30.90	9.52E+01	3.07E+00	3.89E+00
		105.30	20.70	-1.32E+00		3.07E+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	4.98E-01	8.09E-01	8.09E-01
		280.45	29.60	4.61E-01		2.34E+00
		410.94	11.10	4.08E-01		7.88E+00
		711.69	54.10	-6.79E-01		1.84E+00
+	TM-171	66.72	0.14	-1.02E+05	8.88E+02	8.88E+02
+	HF-172	81.75	4.52	-3.08E+00	1.49E+01	3.32E+01
		125.81	11.30	-3.11E+00		1.49E+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	1.39E-01	1.45E+01	3.51E+01
		272.11	21.20	8.22E+00		1.45E+01
+	HF-175	343.40	84.00	7.15E+01	4.02E+04	4.02E+04
+	LU-176	88.34	13.30	1.41E+02	7.15E-01	5.92E+00
		201.83	86.00	-3.03E-01		7.15E-01

Analysis Report for 1606040-01

GAS-1302

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	LU-176	306.78	94.00	-1.46E-01	7.15E-01	7.56E-01
+	TA-182	67.75	41.20	-3.24E+04	7.33E+02	7.33E+02
		1121.30	34.90	-7.15E+02		2.76E+03
		1189.05	16.23	2.12E+03		4.25E+03
		1221.41	26.98	-8.53E+02		2.03E+03
		1231.02	11.44	4.48E+02		4.79E+03
+	IR-192	308.46	29.68	-5.08E+03	5.19E+04	5.96E+04
		468.07	48.10	1.11E+04		5.19E+04
+	HG-203	279.19	77.30	-2.05E+06	8.44E+06	8.44E+06
+	BI-207	569.67	97.72	-5.37E-01	9.72E-01	9.72E-01
		1063.62	74.90	6.85E-01		2.14E+00
+	TL-208	583.14	30.22	5.44E-01	8.42E-01	3.07E+00
		860.37	4.48	-1.38E+01		2.88E+01
		2614.66	35.85	0.00E+00		8.42E-01
+	BI-210M	262.00	45.00	4.47E-01	1.52E+00	1.52E+00
		300.00	23.00	5.76E-01		3.08E+00
+	PB-210	46.50	4.25	-4.62E+00	1.34E+01	1.34E+01
+	PB-211	404.84	2.90	4.52E+00	3.00E+01	3.00E+01
		831.96	2.90	-1.10E+00		4.31E+01
+	BI-212	727.17	11.80	3.89E+00	8.74E+00	8.74E+00
		1620.62	2.75	3.36E+00		1.11E+01
+	PB-212	238.63	44.60	-3.83E-01	1.52E+00	1.52E+00
		300.09	3.41	3.88E+00		2.08E+01
+	BI-214	609.31	46.30	-4.26E-01	2.05E+00	2.05E+00
		1120.29	15.10	-4.30E-01		9.32E+00
		1764.49	15.80	1.91E-01		2.38E+00
		2204.22	4.98	-3.40E-01		5.92E+00
+	PB-214	295.21	19.19	3.10E-02	2.12E+00	3.68E+00
		351.92	37.19	9.98E-01		2.12E+00
+	RN-219	401.80	6.50	5.36E-01	1.33E+01	1.33E+01
+	RA-223	323.87	3.88	-4.83E+00	1.90E+01	1.90E+01
+	RA-224	240.98	3.95	-1.16E+01	1.71E+01	1.71E+01
+	@ RA-225	40.00	31.00	1.00E+26	1.00E+26	1.00E+26
+	RA-226	186.21	3.28	1.18E+01	1.82E+01	1.82E+01
+	TH-227	50.10	8.40	2.61E+01	5.98E+00	7.20E+00
		236.00	11.50	3.78E+00		5.98E+00
		256.20	6.30	-4.85E+00		1.08E+01
+	AC-228	338.32	11.40	1.20E+00	5.51E+00	6.65E+00
		911.07	27.70	1.99E-01		5.51E+00
		969.11	16.60	-2.14E+00		8.99E+00
+	TH-230	48.44	16.90	1.12E+01	3.40E+00	3.40E+00
		62.85	4.60	9.04E+02		2.24E+01
		67.67	0.37	-5.20E+03		1.17E+02
+	PA-231	283.67	1.60	2.73E+01	3.09E+01	4.40E+01
		302.67	2.30	2.44E+00		3.09E+01
+	TH-231	25.64	14.70	-2.38E+01	5.59E+00	5.59E+00
		84.21	6.40	6.27E+00		1.04E+01
+	PA-233	311.98	38.60	-3.72E+10	2.08E+12	2.08E+12

Analysis Report for 1606040-01

GAS-1302

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	PA-234	131.20	20.40	-2.15E+00	2.35E+00	2.35E+00
		733.99	8.80	-2.48E+00		1.17E+01
		946.00	12.00	-6.10E+00		1.31E+01
+	PA-234M	1001.03	0.92	3.91E+01	1.58E+02	1.58E+02
+	TH-234	63.29	3.80	6.57E+02	2.38E+01	2.38E+01
+	U-235	143.76	10.50	-8.79E-01	4.63E+00	4.63E+00
		163.35	4.70	3.74E+00		1.15E+01
		205.31	4.70	-7.17E+00		1.32E+01
+	NP-237	86.50	12.60	1.54E+02	6.31E+00	6.31E+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	1.35E+02	2.93E+00	2.93E+00
+	AM-243	74.67	66.00	1.79E-01	7.07E-01	7.07E-01
+	CM-243	209.75	3.29	-2.56E+00	5.20E+00	2.09E+01
		228.14	10.60	-1.35E+00		6.96E+00
		277.60	14.00	-4.61E+00		5.20E+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	-1.58E+05	5.71E+06
	NA-22	1274.54	99.94	1.41E+00	1.41E+00	-2.22E-02	6.72E-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	3.71E-01	3.71E-01	6.79E-02	1.66E-01

Analysis Report for 1606040-01

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	2.52E+00	2.52E+00	4.44E+00	1.11E+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	4.76E-01	4.76E-01	-2.11E+01	2.37E-01
		78.34		96.00	5.13E-01		5.15E-03	2.55E-01
	SC-46	889.25		99.98	1.06E+04	1.06E+04	-3.37E+03	5.22E+03
		1120.51		99.99	1.06E+04		-4.91E+02	5.22E+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	4.13E+12	4.13E+12	2.28E+12	2.05E+12
+	MN-54	834.83	*	99.97	1.50E+01	1.50E+01	7.85E+00	7.38E+00
	CO-56	846.75		99.96	1.71E+04	1.11E+04	1.11E+03	8.41E+03
		1037.75		14.03	1.42E+05		4.70E+04	6.97E+04
		1238.25		67.00	1.49E+04		1.90E+03	7.18E+03
		1771.40		15.51	3.03E+04		-1.10E+04	1.35E+04
		2598.48		16.90	1.11E+04		1.51E+03	3.51E+03
+	CO-57	122.06	*	85.51	1.10E+01	1.10E+01	6.85E+01	5.46E+00
		136.48	*	10.60	7.46E+01		5.29E+01	3.70E+01
	CO-58	810.76		99.40	4.73E+04	4.73E+04	3.08E+03	2.33E+04
	FE-59	1099.22		56.50	5.19E+07	2.99E+07	-9.81E+06	2.55E+07
		1291.56		43.20	2.99E+07		-3.75E+06	1.43E+07
+	CO-60	1173.22	*	100.00	3.04E+00	1.62E+00	1.44E+02	1.50E+00
		1332.49	*	100.00	1.62E+00		1.47E+02	7.89E-01
	ZN-65	1115.52		50.75	6.34E+01	6.34E+01	3.20E+01	3.12E+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	1.75E+03	4.31E+02	1.13E+04	8.70E+02
		136.00		59.20	4.31E+02		4.91E+00	2.14E+02
		264.65		59.80	5.93E+02		-1.63E+02	2.94E+02
		279.53		25.20	1.41E+03		-3.43E+02	7.00E+02
		400.65		11.40	3.94E+03		9.63E+02	1.95E+03
	RB-82	776.52		13.00	4.60E+13	4.60E+13	3.42E+12	2.26E+13
	RB-83	520.41		46.00	1.21E+04	1.21E+04	2.95E+03	5.95E+03
		529.64		30.30	1.80E+04		8.10E+03	8.86E+03
		552.65		16.40	3.25E+04		-2.14E+03	1.60E+04
	KR-85	513.99		0.43	2.64E+02	2.64E+02	3.87E+01	1.30E+02
	SR-85	513.99		99.27	9.87E+04	9.87E+04	1.45E+04	4.87E+04
	Y-88	898.02		93.40	1.77E+03	6.07E+02	2.13E+02	8.75E+02
		1836.01		99.38	6.07E+02		-1.22E+02	2.81E+02
	NB-93M	16.57		9.43	4.74E+00	4.74E+00	-1.38E+02	2.36E+00
	NB-94	702.63		100.00	1.01E+00	1.01E+00	3.70E-01	4.97E-01
		871.10		100.00	1.34E+00		-2.24E-01	6.62E-01
	NB-95	765.79		99.81	2.08E+09	2.08E+09	2.58E+08	1.02E+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	2.78E+05	2.35E+05	-4.79E+04	1.37E+05
		756.72		55.30	2.35E+05		6.29E+04	1.16E+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	1.89E+08	1.89E+08	5.12E+07	9.32E+07
	RU-106	621.84		9.80	7.48E+01	7.48E+01	-1.77E+01	3.68E+01
	AG-108M	433.93		89.90	1.05E+00	1.05E+00	-3.36E-01	5.19E-01
		614.37		90.40	1.08E+00		2.76E-01	5.31E-01

Analysis Report for 1606040-01

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	1.12E+00	1.05E+00	-6.28E-01	5.52E-01
+ CD-109	88.03 *	3.72	1.11E+02	1.11E+02	2.69E+03	5.51E+01
AG-110M	657.75	93.14	5.52E+01	3.14E+01	1.05E+00	2.74E+01
	677.61	10.53	1.86E+02		1.00E+02	9.16E+01
	706.67	16.46	1.22E+02		3.07E+01	5.99E+01
	763.93	21.98	9.88E+01		-5.67E+00	4.86E+01
	884.67	71.63	3.87E+01		-2.41E+00	1.91E+01
	1384.27	23.94	3.14E+01		4.08E-01	1.44E+01
CD-113M	263.70	0.02	3.43E+03	3.43E+03	-9.38E+02	1.70E+03
SN-113	255.12	1.93	2.37E+04	8.74E+02	-1.41E+03	1.17E+04
	391.69	64.90	8.74E+02		2.73E+01	4.32E+02
TE123M	159.00	84.10	3.23E+02	3.23E+02	-2.90E+01	1.60E+02
SB-124	602.71	97.87	2.41E+05	1.90E+05	-4.91E+04	1.19E+05
	645.85	7.26	3.54E+06		1.60E+06	1.75E+06
	722.78	11.10	2.26E+06		-1.91E+06	1.11E+06
	1691.02	49.00	1.90E+05		5.67E+04	8.54E+04
I-125	35.49	6.49	1.20E+06	1.20E+06	-3.01E+06	5.99E+05
SB-125	176.33	6.89	1.66E+01	6.51E+00	-5.93E+00	8.25E+00
	427.89	29.33	6.51E+00		-2.45E+00	3.22E+00
	463.38	10.35	2.02E+01		-6.31E+00	9.97E+00
	600.56	17.80	1.10E+01		-2.25E+00	5.44E+00
	635.90	11.32	1.85E+01		-4.21E+00	9.12E+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	2.22E+00	2.22E+00	5.39E+01	1.10E+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	6.98E-01	6.98E-01	-6.27E+00	3.47E-01
	33.60	13.20	2.26E+00		-1.24E+01	1.12E+00
	39.58	7.52	4.50E+00		-2.33E+01	2.24E+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	1.81E+00	1.61E+00	2.30E-02	9.02E-01
	302.84	17.80	4.85E+00		3.83E-01	2.40E+00
	356.01	60.00	1.61E+00		1.10E+00	7.96E-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	2.85E+01	2.60E+00	-1.19E+01	1.40E+01
	569.32	15.43	1.56E+01		-8.64E+00	7.70E+00
	604.70	97.60	2.60E+00		-9.98E-01	1.28E+00
	795.84	85.40	3.76E+00		1.95E+00	1.85E+00
	801.93	8.73	3.59E+01		-2.21E+01	1.77E+01
CS-135	268.24	16.00	4.28E+00	4.28E+00	7.85E-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 1606040-01

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	2.07E+00	2.07E+00	8.92E+01	1.02E+00
LA-138	788.74	34.00	3.30E+00	4.34E-01	-1.63E+00	1.62E+00
	1435.80	66.00	4.34E-01		-4.32E-01	1.93E-01
CE-139	165.85	80.35	1.56E+02	1.56E+02	1.24E+02	7.75E+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	1.02E+10	1.02E+10	6.39E+07	5.06E+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	6.34E+01	6.34E+01	-1.51E+00	3.15E+01
PM-144	476.78	42.00	1.87E+01	7.58E+00	4.03E-02	9.24E+00
	618.01	98.60	7.58E+00		-3.30E+00	3.73E+00
	696.49	99.49	7.83E+00		8.01E-01	3.85E+00
PM-145	36.85	21.70	1.60E+00	8.78E-01	-5.79E+00	7.94E-01
	37.36	39.70	8.78E-01		-4.00E+00	4.36E-01
	42.30	15.10	2.89E+00		-5.56E+00	1.44E+00
	72.40	2.31	2.24E+01		2.44E+00	1.11E+01
PM-146	453.90	39.94	3.57E+00	3.57E+00	-2.32E-01	1.76E+00
	735.90	14.01	1.06E+01		-1.93E+00	5.22E+00
	747.13	13.10	1.20E+01		2.65E+00	5.88E+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	3.20E+00	2.93E+00	2.05E+01	1.59E+00
	244.69	5.40	1.46E+01		-6.96E+00	7.23E+00
	344.27	19.13	4.65E+00		-1.48E+00	2.30E+00
	778.89	9.20	1.42E+01		1.12E+00	6.96E+00
	964.01	10.40	1.74E+01		2.70E-01	8.59E+00
	1085.78	7.22	2.41E+01		-5.91E+00	1.18E+01
	1112.02	9.60	1.86E+01		4.00E+00	9.13E+00
	1407.95	14.94	2.93E+00		1.23E+00	1.34E+00
GD-153	97.43	31.30	2.86E+01	2.86E+01	1.36E+01	1.42E+01
	103.18	22.20	4.17E+01		2.18E+00	2.07E+01
EU-154	123.07	40.50	1.77E+00	1.77E+00	1.17E+01	8.80E-01
	723.30	19.70	6.41E+00		-3.58E+00	3.15E+00
	873.19	11.50	1.48E+01		-2.93E+00	7.28E+00
	996.32	10.30	1.76E+01		-2.62E+00	8.67E+00

Analysis Report for 1606040-01

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	-9.31E-01	5.07E+00
	1274.45	35.50	2.28E+00		-3.58E-02	1.09E+00
EU-155	86.50	30.90	3.89E+00	3.07E+00	9.52E+01	1.94E+00
	105.30	20.70	3.07E+00		-1.32E+00	1.53E+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	8.09E-01	8.09E-01	4.98E-01	4.01E-01
	280.45	29.60	2.34E+00		4.61E-01	1.16E+00
	410.94	11.10	7.88E+00		4.08E-01	3.90E+00
	711.69	54.10	1.84E+00		-6.79E-01	9.05E-01
TM-171	66.72	0.14	8.88E+02	8.88E+02	-1.02E+05	4.41E+02
HF-172	81.75	4.52	3.32E+01	1.49E+01	-3.08E+00	1.65E+01
	125.81	11.30	1.49E+01		-3.11E+00	7.39E+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	3.51E+01	1.45E+01	1.39E-01	1.74E+01
	272.11	21.20	1.45E+01		8.22E+00	7.17E+00
HF-175	343.40	84.00	4.02E+04	4.02E+04	7.15E+01	1.99E+04
LU-176	88.34	13.30	5.92E+00	7.15E-01	1.41E+02	2.95E+00
	201.83	86.00	7.15E-01		-3.03E-01	3.54E-01
	306.78	94.00	7.56E-01		-1.46E-01	3.74E-01
TA-182	67.75	41.20	7.33E+02	7.33E+02	-3.24E+04	3.64E+02
	1121.30	34.90	2.76E+03		-7.15E+02	1.36E+03
	1189.05	16.23	4.25E+03		2.12E+03	2.07E+03
	1221.41	26.98	2.03E+03		-8.53E+02	9.78E+02
	1231.02	11.44	4.79E+03		4.48E+02	2.31E+03
IR-192	308.46	29.68	5.96E+04	5.19E+04	-5.08E+03	2.95E+04
	468.07	48.10	5.19E+04		1.11E+04	2.57E+04
HG-203	279.19	77.30	8.44E+06	8.44E+06	-2.05E+06	4.18E+06
BI-207	569.67	97.72	9.72E-01	9.72E-01	-5.37E-01	4.79E-01
	1063.62	74.90	2.14E+00		6.85E-01	1.05E+00
TL-208	583.14	30.22	3.07E+00	8.42E-01	5.44E-01	1.51E+00
	860.37	4.48	2.88E+01		-1.38E+01	1.42E+01
	2614.66	35.85	8.42E-01		0.00E+00	3.49E-01
BI-210M	262.00	45.00	1.52E+00	1.52E+00	4.47E-01	7.52E-01
	300.00	23.00	3.08E+00		5.76E-01	1.53E+00
PB-210	46.50	4.25	1.34E+01	1.34E+01	-4.62E+00	6.65E+00
PB-211	404.84	2.90	3.00E+01	3.00E+01	4.52E+00	1.49E+01
	831.96	2.90	4.31E+01		-1.10E+00	2.12E+01
BI-212	727.17	11.80	8.74E+00	8.74E+00	3.89E+00	4.30E+00
	1620.62	2.75	1.11E+01		3.36E+00	4.89E+00
PB-212	238.63	44.60	1.52E+00	1.52E+00	-3.83E-01	7.55E-01
	300.09	3.41	2.08E+01		3.88E+00	1.03E+01
BI-214	609.31	46.30	2.05E+00	2.05E+00	-4.26E-01	1.01E+00
	1120.29	15.10	9.32E+00		-4.30E-01	4.57E+00
	1764.49	15.80	2.38E+00		1.91E-01	1.07E+00
	2204.22	4.98	5.92E+00		-3.40E-01	2.50E+00
PB-214	295.21	19.19	3.68E+00	2.12E+00	3.10E-02	1.82E+00
	351.92	37.19	2.12E+00		9.98E-01	1.05E+00
RN-219	401.80	6.50	1.33E+01	1.33E+01	5.36E-01	6.58E+00

Analysis Report for 1606040-01

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	-4.83E+00	9.39E+00
RA-224	240.98	3.95	1.71E+01	1.71E+01	-1.16E+01	8.47E+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	1.18E+01	9.01E+00
TH-227	50.10	8.40	7.20E+00	5.98E+00	2.61E+01	3.59E+00
	236.00	11.50	5.98E+00		3.78E+00	2.96E+00
	256.20	6.30	1.08E+01		-4.85E+00	5.33E+00
AC-228	338.32	11.40	6.65E+00	5.51E+00	1.20E+00	3.29E+00
	911.07	27.70	5.51E+00		1.99E-01	2.72E+00
	969.11	16.60	8.99E+00		-2.14E+00	4.43E+00
TH-230	48.44	16.90	3.40E+00	3.40E+00	1.12E+01	1.69E+00
	62.85	4.60	2.24E+01		9.04E+02	1.12E+01
	67.67	0.37	1.17E+02		-5.20E+03	5.84E+01
PA-231	283.67	1.60	4.40E+01	3.09E+01	2.73E+01	2.18E+01
	302.67	2.30	3.09E+01		2.44E+00	1.53E+01
TH-231	25.64	14.70	5.59E+00	5.59E+00	-2.38E+01	2.79E+00
	84.21	6.40	1.04E+01		6.27E+00	5.19E+00
PA-233	311.98	38.60	2.08E+12	2.08E+12	-3.72E+10	1.03E+12
PA-234	131.20	20.40	2.35E+00	2.35E+00	-2.15E+00	1.17E+00
	733.99	8.80	1.17E+01		-2.48E+00	5.74E+00
	946.00	12.00	1.31E+01		-6.10E+00	6.47E+00
PA-234M	1001.03	0.92	1.58E+02	1.58E+02	3.91E+01	7.78E+01
TH-234	63.29	3.80	2.38E+01	2.38E+01	6.57E+02	1.19E+01
U-235	143.76	10.50	4.63E+00	4.63E+00	-8.79E-01	2.30E+00
	163.35	4.70	1.15E+01		3.74E+00	5.68E+00
	205.31	4.70	1.32E+01		-7.17E+00	6.54E+00
NP-237	86.50	12.60	6.31E+00	6.31E+00	1.54E+02	3.14E+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	2.93E+00	2.93E+00	1.35E+02	1.46E+00
AM-243	74.67	66.00	7.07E-01	7.07E-01	1.79E-01	3.52E-01
CM-243	209.75	3.29	2.09E+01	5.20E+00	-2.56E+00	1.04E+01
	228.14	10.60	6.96E+00		-1.35E+00	3.45E+00
	277.60	14.00	5.20E+00		-4.61E+00	2.57E+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 1606040-01
GAS-1302

DATA REVIEW COMMENTS REPORT

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

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

Sample Title: GAS-1302

Elapsed Live time: 1800

Elapsed Real Time: 1819

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	1	212	1292
17:	1462	1452	2344	8664	20059	19317	9482	7414
25:	6255	2588	937	629	641	896	1103	1174
33:	858	754	817	889	913	864	941	1076
41:	1203	1370	1524	1604	1687	1921	2357	2882
49:	3466	3596	3470	3490	3579	3528	3831	4053
57:	6257	16548	24531	14454	3148	1040	1002	1066
65:	1078	1156	1282	1207	1286	1203	1246	1221
73:	1201	1200	1244	1250	1237	1208	1162	1139
81:	1262	1233	1309	1455	1522	3341	7385	7311
89:	2884	908	680	648	643	692	694	664
97:	666	720	674	661	683	658	649	680
105:	684	640	685	643	671	708	651	686
113:	674	721	691	686	677	706	686	1042
121:	1675	1807	995	681	631	683	662	615
129:	675	612	609	667	615	634	661	773
137:	689	590	555	616	615	590	513	588
145:	599	560	560	542	594	576	557	554
153:	549	534	581	601	548	596	549	553
161:	575	592	582	559	627	626	588	559
169:	556	572	520	546	532	578	568	482
177:	518	544	498	542	545	514	577	568
185:	623	549	591	627	562	597	554	606
193:	567	616	562	573	555	554	550	512
201:	560	523	547	528	537	562	514	527
209:	511	554	556	588	601	551	598	569
217:	580	618	580	578	555	606	559	587
225:	563	537	543	520	546	523	551	517
233:	541	548	500	467	508	517	515	492
241:	434	482	447	471	523	460	473	464
249:	482	464	457	462	466	444	435	424
257:	421	443	399	430	458	421	434	411
265:	405	385	422	393	471	412	409	378
273:	349	407	374	383	371	360	381	358
281:	403	423	389	406	400	393	355	352
289:	372	386	355	363	391	366	334	359
297:	355	398	353	342	367	366	341	337
305:	331	335	355	332	364	341	374	345
313:	323	349	350	337	371	372	357	337
321:	363	322	335	324	334	328	308	321
329:	311	350	327	373	334	323	308	311
337:	345	327	341	324	307	348	342	304
345:	323	296	324	322	297	340	335	337
353:	327	344	303	352	309	286	336	307
361:	287	293	331	312	311	329	304	296

369: 295 314 311 312 308 309 322 317

Sample Title: GAS-1302

Channel	-----	-----	-----	-----	-----	-----	-----	-----
377:	306	282	297	333	262	308	269	312
385:	294	317	294	291	320	303	324	317
393:	298	330	308	317	325	286	276	311
401:	316	322	315	311	295	298	289	297
409:	314	321	285	300	295	288	286	296
417:	286	304	298	312	317	301	277	301
425:	304	347	316	292	285	299	287	311
433:	315	310	286	324	315	303	330	289
441:	291	313	323	299	308	330	290	331
449:	314	307	320	313	330	310	320	287
457:	314	324	312	302	304	326	289	319
465:	311	303	305	339	325	305	294	300
473:	332	318	319	300	283	268	254	258
481:	253	242	244	241	233	255	222	244
489:	229	230	239	235	215	233	216	230
497:	192	251	238	232	231	221	207	196
505:	219	230	226	221	218	247	236	219
513:	233	216	214	227	227	223	235	204
521:	228	195	207	200	186	227	195	185
529:	223	190	195	192	217	183	193	174
537:	183	177	200	177	177	187	187	198
545:	191	191	202	162	170	180	204	193
553:	180	174	162	169	171	179	147	180
561:	171	182	164	158	153	169	152	175
569:	169	172	152	148	183	196	168	177
577:	166	183	148	168	176	188	177	185
585:	155	182	143	167	152	154	164	143
593:	186	189	159	141	178	149	181	153
601:	159	155	177	172	160	140	173	161
609:	173	162	170	162	157	154	174	166
617:	149	168	142	147	155	163	195	150
625:	161	178	152	158	176	160	181	157
633:	178	158	172	165	172	131	174	165
641:	218	139	162	177	166	166	147	159
649:	169	144	157	175	159	181	183	180
657:	169	186	650	2713	4913	3692	1132	246
665:	131	136	122	144	139	131	136	140
673:	143	116	146	124	130	144	150	166
681:	137	134	115	124	134	148	153	136
689:	133	111	141	124	127	145	139	130
697:	127	139	151	131	134	153	123	146
705:	133	134	123	141	129	126	109	135
713:	124	131	153	134	135	139	114	127
721:	130	123	138	113	137	122	145	142
729:	142	133	138	129	129	120	116	143
737:	133	135	127	116	140	130	146	135
745:	138	137	146	158	144	146	111	129
753:	141	155	133	147	139	165	119	111
761:	121	138	137	146	138	142	147	134
769:	147	147	141	134	149	126	139	147
777:	138	127	156	142	150	122	127	158
785:	116	117	127	139	146	134	134	148
793:	144	153	165	155	151	151	146	145

801: 129 145 139 141 137 131 158 141

Sample Title: GAS-1302

Channel	-----	-----	-----	-----	-----	-----	-----	-----
809:	145	138	152	149	148	164	168	146
817:	142	145	140	161	154	148	148	169
825:	146	188	154	166	141	126	140	162
833:	175	144	161	154	126	150	157	145
841:	162	154	157	139	141	133	154	158
849:	160	168	152	136	152	170	150	176
857:	151	143	159	151	130	155	144	157
865:	149	161	182	168	126	168	157	154
873:	176	153	164	177	169	167	163	148
881:	162	194	170	160	156	187	152	160
889:	175	152	174	187	169	187	187	149
897:	198	195	192	181	178	181	168	200
905:	183	204	197	202	171	193	197	174
913:	184	200	195	177	170	207	179	210
921:	182	160	178	202	196	177	198	204
929:	239	189	190	204	170	204	202	199
937:	170	226	197	183	189	187	164	189
945:	188	193	195	188	199	194	212	195
953:	211	197	194	202	204	195	204	163
961:	216	216	167	162	163	149	187	178
969:	157	152	170	129	165	156	141	164
977:	148	130	145	148	119	130	162	147
985:	131	132	140	136	141	150	137	158
993:	151	127	120	154	140	147	138	139
1001:	140	157	140	144	148	150	146	134
1009:	164	153	131	132	142	135	147	136
1017:	143	152	131	133	151	159	122	143
1025:	136	134	128	132	152	151	146	140
1033:	148	150	138	133	138	124	126	144
1041:	146	110	119	137	128	131	150	157
1049:	133	133	151	121	128	159	148	114
1057:	154	147	153	135	122	136	129	125
1065:	128	164	140	110	139	126	151	146
1073:	116	131	153	103	156	148	134	132
1081:	141	141	126	116	131	134	124	129
1089:	132	135	126	152	121	123	128	139
1097:	118	125	139	114	118	160	136	137
1105:	128	143	136	135	144	133	142	130
1113:	115	112	138	127	128	120	112	108
1121:	98	93	97	88	102	112	85	96
1129:	97	73	97	65	103	88	69	68
1137:	77	76	69	74	85	90	76	96
1145:	74	72	76	75	71	77	70	76
1153:	89	83	63	74	85	72	65	62
1161:	86	60	75	74	84	91	61	79
1169:	78	248	1155	2770	3484	1950	532	97
1177:	59	56	53	45	51	46	40	41
1185:	39	56	56	45	47	44	42	61
1193:	37	46	39	40	38	43	54	42
1201:	49	40	50	32	48	43	50	31
1209:	43	34	36	44	24	39	31	37
1217:	31	24	25	34	18	34	25	29
1225:	31	22	31	31	24	27	32	19

1233: 35 19 30 27 25 27 34 13

Sample Title: GAS-1302

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1241:	22	20	16	13	28	18	20	22
1249:	18	25	22	17	23	20	16	22
1257:	27	14	17	12	19	10	18	14
1265:	19	24	21	12	22	14	11	15
1273:	20	17	18	19	14	22	17	11
1281:	18	16	18	19	19	15	15	27
1289:	20	17	16	17	14	21	13	24
1297:	19	15	13	16	15	12	14	16
1305:	24	13	20	23	11	17	12	16
1313:	20	13	15	15	13	19	15	23
1321:	16	22	16	21	18	18	17	31
1329:	103	664	2051	3052	2245	736	131	18
1337:	10	7	5	4	4	3	7	5
1345:	3	4	9	8	6	4	4	5
1353:	6	7	5	6	5	3	6	8
1361:	10	3	3	3	7	2	5	2
1369:	4	6	7	2	6	8	5	4
1377:	1	7	5	2	3	4	4	6
1385:	11	6	3	2	3	5	6	1
1393:	0	3	6	5	2	4	7	2
1401:	5	3	3	5	3	7	1	6
1409:	3	3	7	5	2	2	3	4
1417:	4	5	2	3	5	5	5	3
1425:	3	3	6	2	3	1	3	2
1433:	1	1	2	1	8	1	4	1
1441:	9	7	7	2	6	5	7	4
1449:	2	3	4	2	3	2	1	2
1457:	6	2	7	12	5	7	1	3
1465:	1	0	0	3	2	2	4	4
1473:	3	3	4	4	4	5	6	2
1481:	2	2	5	3	2	2	4	5
1489:	6	1	3	6	2	6	4	0
1497:	4	1	2	4	3	1	4	6
1505:	5	2	4	2	4	5	7	1
1513:	2	2	0	2	6	6	1	2
1521:	1	5	2	2	2	5	5	2
1529:	7	1	1	7	2	0	1	1
1537:	2	1	3	1	4	4	7	1
1545:	2	5	4	2	2	4	4	4
1553:	2	1	3	2	0	6	2	2
1561:	2	1	2	3	1	3	1	3
1569:	4	4	1	2	2	5	3	3
1577:	3	1	5	4	4	2	1	3
1585:	1	2	10	1	4	3	4	2
1593:	0	5	4	1	1	3	2	3
1601:	4	3	4	2	0	1	3	5
1609:	4	3	1	1	3	3	1	2
1617:	2	1	1	1	3	3	4	3
1625:	1	0	2	0	2	3	3	1
1633:	2	3	3	2	2	2	4	0
1641:	5	4	2	6	2	0	3	7
1649:	4	0	2	0	4	3	4	3
1657:	2	5	6	1	1	1	1	6

1665: 1 2 0 1 5 1 1 1

Sample Title: GAS-1302

Channel	1	2	3	4	5	6	7	8
1673:	1	4	1	0	2	1	1	2
1681:	2	4	2	0	0	2	5	3
1689:	3	4	1	4	3	2	2	1
1697:	4	4	2	3	2	5	3	1
1705:	6	3	2	1	4	3	5	2
1713:	1	2	2	2	3	2	3	2
1721:	3	1	3	2	2	3	1	4
1729:	2	2	3	1	2	1	2	2
1737:	1	2	1	4	1	2	2	1
1745:	1	4	2	1	1	3	2	2
1753:	1	1	1	0	1	3	2	1
1761:	2	1	4	3	4	2	1	3
1769:	2	3	2	3	2	1	2	2
1777:	1	2	3	3	2	1	3	1
1785:	0	2	3	0	1	2	2	3
1793:	1	3	3	2	1	2	5	2
1801:	2	2	3	1	4	2	4	3
1809:	2	0	2	1	2	3	3	1
1817:	0	1	1	3	0	2	3	0
1825:	0	1	2	2	3	0	3	1
1833:	2	8	7	17	8	1	1	4
1841:	1	3	1	3	1	5	2	1
1849:	1	5	6	1	2	2	3	0
1857:	6	1	1	1	2	0	0	1
1865:	1	3	0	2	1	2	2	3
1873:	2	2	5	1	2	2	1	3
1881:	2	0	1	0	0	2	1	1
1889:	1	3	0	2	1	2	1	0
1897:	2	2	1	1	2	1	1	2
1905:	2	2	2	3	4	0	3	3
1913:	3	2	2	4	0	3	3	5
1921:	2	1	2	4	2	3	1	1
1929:	1	1	3	0	0	1	4	3
1937:	0	1	0	2	3	2	3	3
1945:	2	1	0	3	3	1	2	1
1953:	1	2	3	0	0	3	4	1
1961:	1	1	1	2	4	1	2	0
1969:	1	3	2	2	4	1	3	6
1977:	3	2	0	2	2	3	2	1
1985:	0	0	0	2	3	5	0	1
1993:	1	3	4	1	0	1	2	2
2001:	1	0	1	2	1	1	0	3
2009:	2	2	3	2	4	1	1	4
2017:	5	1	0	1	1	1	0	2
2025:	1	1	1	1	1	3	0	0
2033:	2	1	1	3	2	4	1	5
2041:	0	2	5	1	0	0	3	1
2049:	0	3	1	1	2	0	1	0
2057:	0	0	1	0	0	2	2	1
2065:	1	3	2	0	0	0	1	1
2073:	0	0	1	1	2	3	0	1
2081:	1	1	1	0	0	3	0	1
2089:	3	0	2	0	0	0	0	2

2097: 3 2 1 0 0 2 0 1

Sample Title: GAS-1302

Channel	-----	-----	-----	-----	-----	-----	-----	-----
2105:	0	3	0	1	0	2	0	2
2113:	2	0	1	3	1	1	2	0
2121:	1	1	2	1	0	2	0	0
2129:	1	2	0	1	0	0	3	1
2137:	1	0	5	3	0	0	1	0
2145:	1	5	1	2	0	2	1	3
2153:	2	0	1	3	0	0	1	2
2161:	1	2	0	0	1	2	1	2
2169:	1	2	0	2	0	1	0	1
2177:	2	0	1	1	0	3	1	2
2185:	0	2	2	1	1	1	0	2
2193:	0	1	0	0	1	0	2	0
2201:	1	0	1	0	0	2	3	0
2209:	0	3	2	1	0	1	2	0
2217:	0	1	1	1	1	0	0	3
2225:	0	0	2	1	1	1	1	1
2233:	0	1	0	1	1	5	1	0
2241:	0	3	2	2	1	1	0	0
2249:	1	1	2	1	1	1	2	0
2257:	0	1	2	1	1	1	1	1
2265:	0	1	1	1	2	2	3	2
2273:	2	2	0	0	1	2	1	3
2281:	1	1	1	1	2	2	1	2
2289:	5	1	0	1	1	2	1	1
2297:	1	0	0	1	2	2	0	0
2305:	0	1	1	1	0	2	0	1
2313:	2	0	0	1	2	2	0	0
2321:	0	0	2	0	0	0	3	1
2329:	2	0	0	0	0	1	1	0
2337:	1	0	0	0	1	0	1	0
2345:	1	1	1	1	2	1	0	2
2353:	4	0	1	0	0	0	1	0
2361:	1	0	2	0	1	0	0	1
2369:	2	0	1	0	0	1	0	3
2377:	2	2	0	0	0	0	0	0
2385:	1	0	0	1	1	0	0	1
2393:	0	0	0	0	0	0	0	0
2401:	1	1	1	0	0	0	0	0
2409:	0	0	0	0	1	0	0	1
2417:	0	0	0	0	0	0	0	0
2425:	0	0	0	0	1	0	2	0
2433:	1	0	0	1	0	1	0	0
2441:	0	1	1	1	1	0	0	1
2449:	0	0	1	0	0	1	0	1
2457:	0	0	0	0	0	2	0	1
2465:	1	0	1	1	0	0	0	0
2473:	0	0	0	0	0	0	0	1
2481:	0	0	0	2	0	0	0	0
2489:	0	0	0	1	0	0	0	1
2497:	2	0	0	0	0	0	2	9
2505:	15	19	4	2	0	0	0	0
2513:	0	0	0	0	0	0	0	0
2521:	0	0	0	0	0	0	0	0

2529: 0 0 0 0 0 0 0 0

Sample Title: GAS-1302

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

2961: 1 0 0 0 0 0 0 1

Sample Title: GAS-1302

Channel	-----	-----	-----	-----	-----	-----	-----	-----
2969:	0	0	0	0	0	0	0	0
2977:	0	0	0	1	0	0	0	0
2985:	0	0	0	0	0	0	0	1
2993:	0	0	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	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	0	0	0
3057:	0	0	0	0	0	1	0	0
3065:	0	0	0	0	0	0	0	0
3073:	0	0	0	0	0	1	1	0
3081:	0	0	0	0	0	0	0	0
3089:	1	0	0	0	0	0	1	0
3097:	0	0	0	0	0	1	0	0
3105:	0	0	0	0	0	0	0	0
3113:	0	0	0	0	0	0	0	0
3121:	0	0	0	0	1	0	0	0
3129:	0	0	0	0	0	0	0	0
3137:	0	0	0	0	0	0	0	0
3145:	0	0	0	0	0	0	0	0
3153:	0	0	0	0	0	0	0	0
3161:	0	0	0	0	0	0	0	0
3169:	0	0	0	0	0	0	0	0
3177:	0	0	0	1	0	0	0	0
3185:	0	0	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	0	0	0	0	0	0	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	1	0
3249:	0	0	0	0	0	0	0	0
3257:	0	0	0	0	0	0	0	0
3265:	0	0	0	0	0	0	0	0
3273:	0	0	0	0	0	0	0	0
3281:	0	0	0	0	0	0	0	0
3289:	0	0	1	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	1	0	0	0	0	0
3321:	0	0	0	0	1	0	0	0
3329:	0	0	1	0	1	0	0	0
3337:	0	0	0	0	0	0	0	0
3345:	0	0	0	0	0	0	0	0
3353:	0	0	0	0	0	1	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	0	0

3393: 0 0 0 0 0 0 0 0

Sample Title: GAS-1302

Channel	1	2	3	4	5	6	7	8
3401:	1	1	0	0	0	0	0	0
3409:	0	0	0	0	0	0	0	0
3417:	0	0	0	0	0	0	0	1
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:	0	0	0	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	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	1	0	0	0	0	0
3521:	0	0	0	0	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	1	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	0	0
3585:	0	0	0	1	0	0	0	0
3593:	0	0	0	0	0	0	0	0
3601:	1	0	0	0	0	0	0	0
3609:	0	0	0	0	0	0	0	0
3617:	0	0	0	0	0	0	0	0
3625:	0	0	0	0	0	1	1	0
3633:	1	0	0	0	0	0	0	0
3641:	0	0	0	0	0	0	0	0
3649:	0	2	0	0	0	0	0	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	0	0
3681:	0	0	0	0	0	0	0	0
3689:	0	0	0	0	0	0	0	0
3697:	0	0	0	0	0	0	0	0
3705:	0	0	0	0	0	0	0	0
3713:	0	0	0	0	0	1	0	0
3721:	0	0	0	0	0	0	0	0
3729:	0	0	0	0	0	0	0	0
3737:	0	0	0	0	0	0	0	0
3745:	0	0	0	0	0	0	0	0
3753:	0	0	0	0	0	0	0	0
3761:	0	0	0	1	0	0	0	0
3769:	0	0	0	0	0	0	0	0
3777:	0	0	0	0	0	1	0	0
3785:	0	0	0	0	0	0	0	0
3793:	0	0	0	0	0	0	1	1
3801:	0	0	1	0	0	0	0	0
3809:	0	0	1	0	0	1	0	1
3817:	0	0	0	0	0	0	0	0

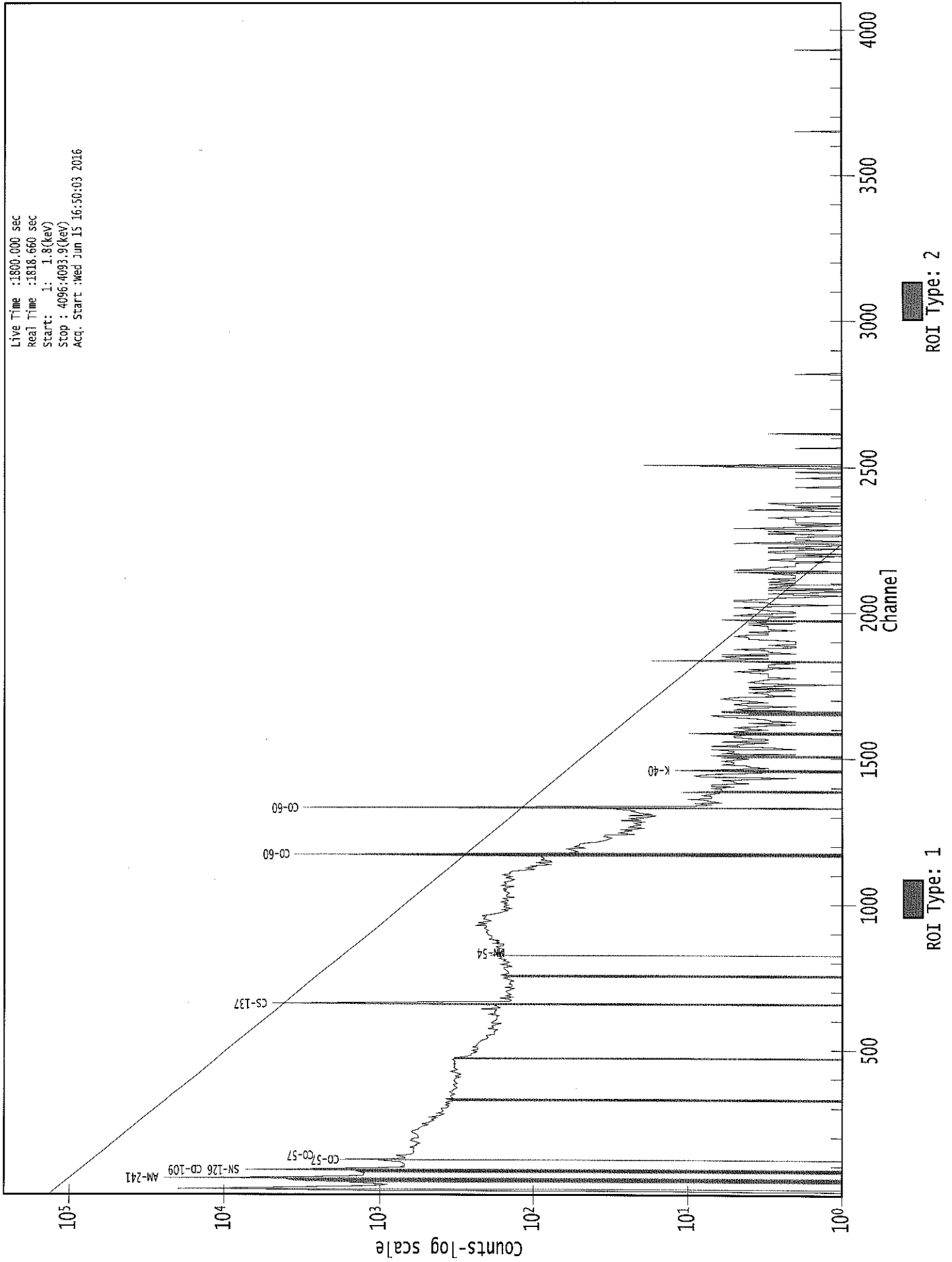
3825: 0 0 0 0 0 0 1 0

Sample Title: GAS-1302

Channel								
3833:	0	0	0	0	0	0	0	0
3841:	0	0	0	0	0	0	0	0
3849:	0	0	0	0	0	0	0	0
3857:	0	0	0	0	0	0	0	0
3865:	0	0	0	0	0	0	0	0
3873:	0	0	0	0	0	0	0	0
3881:	0	0	0	0	0	0	0	0
3889:	0	0	0	0	0	0	0	0
3897:	0	0	0	0	0	0	0	0
3905:	1	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	2	0	0	0	0	0	0
3937:	0	0	0	0	0	0	0	0
3945:	0	0	1	0	0	0	0	0
3953:	0	0	0	0	0	0	0	1
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	1	0	0	0	0
3993:	0	0	0	0	0	0	0	0
4001:	0	0	1	0	0	0	0	1
4009:	0	0	1	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	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	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

0000038945.CNF

Live Time :1800.000 sec
Real Time :1818.660 sec
Start : 1: 1.8(kev)
Stop : 4096:4093.9(kev)
Acq. Start :Wed Jun 15 16:50:03 2016



YB
6/15/16Analysis Report for 1606040-02
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GAMMA SPECTRUM ANALYSIS

Sample Identification : 1606040-02
Sample Description : BLANK
Sample Type : SOIL

Sample Size : 7.834E+02 grams
Facility : Countroom

Sample Taken On : 6/15/2016 1:08:06PM
Acquisition Started : 6/15/2016 3:49:18PM

Procedure : GAS-1402 pCi
Operator : Administrator
Detector Name : GE4
Geometry : GAS-1402
Live Time : 3600.0 seconds
Real Time : 3600.7 seconds

Dead Time : 0.02 %

Peak Locate Threshold : 2.50
Peak Locate Range (in channels) : 1 - 4096
Peak Area Range (in channels) : 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 : 38937

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
6/16/16

Analysis Report for 1606040-02
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PEAK LOCATE REPORT

Peak Locate Performed on : 6/15/2016 4:49:20PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096
Peak Search Sensitivity : 2.50

<i>Peak No.</i>	<i>Energy (keV)</i>	<i>Centroid Channel</i>	<i>Centroid Uncertainty</i>	<i>Peak Significance</i>
1	70.01	69.28	0.0000	0.00
2	91.79	91.07	0.0000	0.00
3	141.33	140.62	0.0000	0.00
4	187.26	186.57	0.0000	0.00
5	489.80	489.25	0.0000	0.00
6	699.50	699.05	0.0000	0.00
7	731.32	730.88	0.0000	0.00
8	770.88	770.47	0.0000	0.00
9	831.65	831.27	0.0000	0.00
10	895.32	894.98	0.0000	0.00
11	930.61	930.28	0.0000	0.00
12	977.09	976.78	0.0000	0.00
13	998.22	997.92	0.0000	0.00
14	1465.82	1465.79	0.0000	0.00

? = Adjacent peak noted

Errors quoted at 2.000sigma

Analysis Report for 1606040-02
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PEAK ANALYSIS REPORT

Peak Analysis Performed on : 6/15/2016 4:49:20PM

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	70.01	67 -	71	69.28	2.00E+01	25.31	1.24E+02	1.49
2	91.79	84 -	96	91.07	6.17E+01	52.80	2.99E+02	3.05
3	141.33	127 -	152	140.62	7.05E+01	81.88	4.23E+02	13.47
4	187.26	181 -	192	186.57	3.81E+01	38.37	1.56E+02	2.46
5	489.80	483 -	495	489.25	2.13E+01	21.25	3.54E+01	8.48
6	699.50	695 -	703	699.05	2.05E+01	12.99	1.29E+01	5.50
7	731.32	726 -	737	730.88	1.86E+01	11.14	6.77E+00	6.54
8	770.88	765 -	776	770.47	1.88E+01	11.14	6.32E+00	1.14
9	831.65	826 -	835	831.27	1.50E+01	7.75	0.00E+00	1.91
10	895.32	892 -	899	894.98	6.45E+00	8.72	9.09E+00	2.82
11	930.61	926 -	936	930.28	8.36E+00	10.79	1.13E+01	2.54
12	977.09	973 -	980	976.78	1.00E+01	9.38	8.00E+00	3.04
13	998.22	994 -	1002	997.92	1.42E+01	9.18	3.69E+00	5.39
14	1465.82	1460 -	1469	1465.79	6.28E+00	7.81	5.44E+00	6.59

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 : 6/15/2016 4:49:20PM

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	70.01	67 -	71	2.00E+01	25.31	1.24E+02	1.95E+01

Analysis Report for 1606040-02

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Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
2	91.79	84 -	96	6.17E+01	52.80	2.99E+02	4.14E+01
3	141.33	127 -	152	7.05E+01	81.88	4.23E+02	6.59E+01
4	187.26	181 -	192	3.81E+01	38.37	1.56E+02	2.99E+01
5	489.80	483 -	495	2.13E+01	21.25	3.54E+01	1.57E+01
6	699.50	695 -	703	2.05E+01	12.99	1.29E+01	7.65E+00
7	731.32	726 -	737	1.86E+01	11.14	6.77E+00	5.79E+00
8	770.88	765 -	776	1.88E+01	11.14	6.32E+00	5.73E+00
9	831.65	826 -	835	1.50E+01	7.75	0.00E+00	0.00E+00
10	895.32	892 -	899	6.45E+00	8.72	9.09E+00	5.82E+00
11	930.61	926 -	936	8.36E+00	10.79	1.13E+01	7.49E+00
12	977.09	973 -	980	1.00E+01	9.38	8.00E+00	5.70E+00
13	998.22	994 -	1002	1.42E+01	9.18	3.69E+00	4.32E+00
14	1465.82	1460 -	1469	6.28E+00	7.81	5.44E+00	4.92E+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 : 6/15/2016 4:49:20PM

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	70.01	67 -	71	69.28	2.00E+01	25.31	1.24E+02	.....
2	91.79	84 -	96	91.07	6.17E+01	52.80	2.99E+02	ND-147
3	141.33	127 -	152	140.62	7.05E+01	81.88	4.23E+02	.....
4	187.26	181 -	192	186.57	3.81E+01	38.37	1.56E+02	.....
5	489.80	483 -	495	489.25	2.13E+01	21.25	3.54E+01	.....
6	699.50	695 -	703	699.05	2.05E+01	12.99	1.29E+01	.....
7	731.32	726 -	737	730.88	1.86E+01	11.14	6.77E+00	.....
8	770.88	765 -	776	770.47	1.88E+01	11.14	6.32E+00	.....
9	831.65	826 -	835	831.27	1.50E+01	7.75	0.00E+00	PB-211
10	895.32	892 -	899	894.98	6.45E+00	8.72	9.09E+00	.....
11	930.61	926 -	936	930.28	8.36E+00	10.79	1.13E+01
12	977.09	973 -	980	976.78	1.00E+01	9.38	8.00E+00

Analysis Report for 1606040-02

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Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
13	998.22	994 -	1002	997.92	1.42E+01	9.18	3.69E+00	.....
14	1465.82	1460 -	1469	1465.79	6.28E+00	7.81	5.44E+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 : 6/15/2016 4:49:20PM

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
1	70.01	2.00E+01	25.31	2.22E-02	1.73E-03
2	91.79	6.17E+01	52.80	1.91E-02	1.62E-03
3	141.33	7.05E+01	81.88	1.44E-02	1.39E-03
4	187.26	3.81E+01	38.37	1.16E-02	1.15E-03
5	489.80	2.13E+01	21.25	4.81E-03	5.92E-04
6	699.50	2.05E+01	12.99	3.38E-03	3.19E-04
7	731.32	1.86E+01	11.14	3.24E-03	3.01E-04
8	770.88	1.88E+01	11.14	3.07E-03	2.79E-04
9	831.65	1.50E+01	7.75	2.85E-03	2.45E-04
10	895.32	6.45E+00	8.72	2.66E-03	2.09E-04
11	930.61	8.36E+00	10.79	2.56E-03	2.04E-04
12	977.09	1.00E+01	9.38	2.44E-03	1.98E-04
13	998.22	1.42E+01	9.18	2.39E-03	1.95E-04
14	1465.82	6.28E+00	7.81	1.68E-03	1.88E-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 : 6/15/2016 4:49:20PM

: 00307

Analysis Report for 1606040-02

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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	70.01	2.00E+01	25.31			2.00E+01	2.53E+01
2	91.79	6.17E+01	52.80			6.17E+01	5.28E+01
3	141.33	7.05E+01	81.88			7.05E+01	8.19E+01
4	187.26	3.81E+01	38.37			3.81E+01	3.84E+01
5	489.80	2.13E+01	21.25			2.13E+01	2.13E+01
6	699.50	2.05E+01	12.99			2.05E+01	1.30E+01
7	731.32	1.86E+01	11.14			1.86E+01	1.11E+01
8	770.88	1.88E+01	11.14			1.88E+01	1.11E+01
9	831.65	1.50E+01	7.75			1.50E+01	7.75E+00
10	895.32	6.45E+00	8.72			6.45E+00	8.72E+00
11	930.61	8.36E+00	10.79			8.36E+00	1.08E+01
12	977.09	1.00E+01	9.38			1.00E+01	9.38E+00
13	998.22	1.42E+01	9.18			1.42E+01	9.18E+00
14	1465.82	6.28E+00	7.81			6.28E+00	7.81E+00

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

AREA CORRECTION REPORT REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 6/15/2016 4:49:20PM
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	70.01	2.00E+01	25.31			2.00E+01	2.53E+01
2	91.79	6.17E+01	52.80			6.17E+01	5.28E+01
3	141.33	7.05E+01	81.88			7.05E+01	8.19E+01
4	187.26	3.81E+01	38.37			3.81E+01	3.84E+01
5	489.80	2.13E+01	21.25			2.13E+01	2.13E+01
6	699.50	2.05E+01	12.99			2.05E+01	1.30E+01
7	731.32	1.86E+01	11.14			1.86E+01	1.11E+01
8	770.88	1.88E+01	11.14			1.88E+01	1.11E+01
9	831.65	1.50E+01	7.75			1.50E+01	7.75E+00

Analysis Report for 1606040-02

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Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
10	895.32	6.45E+00	8.72			6.45E+00	8.72E+00
11	930.61	8.36E+00	10.79			8.36E+00	1.08E+01
12	977.09	1.00E+01	9.38			1.00E+01	9.38E+00
13	998.22	1.42E+01	9.18			1.42E+01	9.18E+00
14	1465.82	6.28E+00	7.81			6.28E+00	7.81E+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
ND-147	0.663	91.11 * 531.02	28.90 13.10	1.08E-01	9.27E-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 : 6/15/2016 4:49:20PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
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Analysis Report for 1606040-02

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Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
1	70.01	5.55556E-03	63.27		
3	141.33	1.95966E-02	58.03		
4	187.26	1.05843E-02	50.35		
5	489.80	5.92236E-03	49.84		
6	699.50	5.70473E-03	31.63		
7	731.32	5.17046E-03	29.91		
8	770.88	5.23359E-03	29.55		
9	831.65	4.16667E-03	25.82	Tol.	PB-211
10	895.32	1.79293E-03	67.53		
11	930.61	2.32143E-03	64.58		
12	977.09	2.77778E-03	46.90		
13	998.22	3.93229E-03	32.42		
14	1465.82	1.74383E-03	62.21		

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
ND-147	0.66	91.11 * 531.02	28.90 13.10	1.08E-01	9.27E-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

Analysis Report for 1606040-02

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INTERFERENCE CORRECTED REPORT

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
ND-147	0.663	1.08E-01	9.27E-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 1606040-02

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UNIDENTIFIED PEAKS

Peak Locate Performed on : 6/15/2016 4:49:20PM
 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	70.01	5.55556E-03	63.27		
3	141.33	1.95966E-02	58.03		
4	187.26	1.05843E-02	50.35		
5	489.80	5.92236E-03	49.84		
6	699.50	5.70473E-03	31.63		
7	731.32	5.17046E-03	29.91		
8	770.88	5.23359E-03	29.55		
9	831.65	4.16667E-03	25.82	Tol.	PB-211
10	895.32	1.79293E-03	67.53		
11	930.61	2.32143E-03	64.58		
12	977.09	2.77778E-03	46.90		
13	998.22	3.93229E-03	32.42		
14	1465.82	1.74383E-03	62.21		

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	2.09E-01	5.80E-01	5.80E-01
+	NA-22	1274.54	99.94	2.32E-02	7.11E-02	7.11E-02
+	NA-24	1368.53	99.99	3.13E-02	9.96E-02	1.04E-01
		2754.09	99.86	-3.57E-03		9.96E-02

Analysis Report for 1606040-02

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	AL-26	1808.65	99.76	9.87E-03	7.36E-02	7.36E-02
+	K-40	1460.81	10.67	-1.78E-02	6.99E-01	6.99E-01
+	AR-41	1293.64	99.16	-6.53E-03	2.57E-01	2.57E-01
+	TI-44	67.88	94.40	3.43E-04	2.66E-02	2.66E-02
		78.34	96.00	1.19E-02		2.73E-02
+	SC-46	889.25	99.98	1.60E-03	5.70E-02	5.70E-02
		1120.51	99.99	4.69E-03		6.72E-02
+	V-48	983.52	99.98	7.13E-03	8.24E-02	8.24E-02
		1312.10	97.50	2.13E-02		9.29E-02
+	CR-51	320.08	9.83	-1.79E-01	4.59E-01	4.59E-01
+	MN-54	834.83	99.97	-5.06E-03	6.79E-02	6.79E-02
+	CO-56	846.75	99.96	-1.98E-02	6.67E-02	6.67E-02
		1037.75	14.03	-7.73E-02		5.38E-01
		1238.25	67.00	-2.20E-02		1.22E-01
		1771.40	15.51	9.73E-02		5.20E-01
		2598.48	16.90	-1.67E-01		4.90E-01
+	CO-57	122.06	85.51	-4.19E-03	3.31E-02	3.31E-02
		136.48	10.60	-8.89E-02		2.95E-01
+	CO-58	810.76	99.40	1.65E-03	5.75E-02	5.75E-02
+	FE-59	1099.22	56.50	-4.26E-02	1.02E-01	1.02E-01
		1291.56	43.20	6.90E-03		1.88E-01
+	CO-60	1173.22	100.00	-9.08E-03	6.58E-02	6.58E-02
		1332.49	100.00	-5.24E-03		6.87E-02
+	ZN-65	1115.52	50.75	-7.61E-02	1.15E-01	1.15E-01
+	GA-67	93.31	35.70	6.82E-02	8.86E-02	8.86E-02
		208.95	2.24	-9.97E-01		1.66E+00
		300.22	16.00	-4.02E-02		2.91E-01
+	SE-75	121.11	16.70	-6.69E-02	5.37E-02	1.66E-01
		136.00	59.20	2.57E-03		5.37E-02
		264.65	59.80	2.42E-02		7.23E-02
		279.53	25.20	-3.90E-02		1.70E-01
		400.65	11.40	-6.58E-02		3.67E-01
+	RB-82	776.52	13.00	-6.14E-02	4.72E-01	4.72E-01
+	RB-83	520.41	46.00	-6.51E-02	1.08E-01	1.08E-01
		529.64	30.30	6.54E-02		2.07E-01
		552.65	16.40	-2.97E-01		3.00E-01
+	KR-85	513.99	0.43	1.51E+01	2.02E+01	2.02E+01
+	SR-85	513.99	99.27	6.62E-02	8.84E-02	8.84E-02
+	Y-88	898.02	93.40	3.45E-03	7.30E-02	7.30E-02
		1836.01	99.38	2.82E-02		9.80E-02
+	NB-93M	16.57	9.43	3.75E-01	2.22E-01	2.22E-01
+	NB-94	702.63	100.00	-4.74E-03	6.85E-02	7.26E-02
		871.10	100.00	4.42E-03		6.85E-02
+	NB-95	765.79	99.81	-2.07E-03	6.06E-02	6.06E-02
+	NB-95M	235.69	25.00	6.17E-02	1.79E-01	1.79E-01
+	ZR-95	724.18	43.70	-1.86E-02	1.18E-01	1.43E-01
		756.72	55.30	3.17E-02		1.18E-01

Analysis Report for 1606040-02

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	MO-99	181.06	6.20	-6.52E-02	4.39E-01	5.97E-01
		739.58	12.80	-4.49E-02		4.39E-01
		778.00	4.50	-3.13E-01		1.36E+00
+	RU-103	497.08	89.00	0.00E+00	5.48E-02	5.48E-02
+	RU-106	621.84	9.80	9.52E-02	6.44E-01	6.44E-01
+	AG-108M	433.93	89.90	2.05E-02	5.64E-02	5.64E-02
		614.37	90.40	-3.02E-02		6.63E-02
		722.95	90.50	-1.94E-02		6.90E-02
+	CD-109	88.03	3.72	-3.50E-01	7.46E-01	7.46E-01
+	AG-110M	657.75	93.14	-9.49E-03	6.11E-02	6.11E-02
		677.61	10.53	-7.83E-02		5.25E-01
		706.67	16.46	-5.80E-03		4.09E-01
		763.93	21.98	2.81E-02		2.34E-01
		884.67	71.63	7.25E-03		9.04E-02
		1384.27	23.94	-5.88E-03		3.78E-01
+	CD-113M	263.70	0.02	1.56E+01	1.86E+02	1.86E+02
+	SN-113	255.12	1.93	-9.64E-01	7.19E-02	2.15E+00
		391.69	64.90	3.90E-02		7.19E-02
+	TE123M	159.00	84.10	-7.36E-03	3.82E-02	3.82E-02
+	SB-124	602.71	97.87	-6.42E-02	3.57E-02	6.02E-02
		645.85	7.26	-1.45E-01		7.91E-01
		722.78	11.10	-1.39E-01		5.15E-01
		1691.02	49.00	0.00E+00		3.57E-02
+	I-125	35.49	6.49	1.00E-02	3.00E-01	3.00E-01
+	SB-125	176.33	6.89	1.50E-02	1.63E-01	4.96E-01
		427.89	29.33	-1.11E-02		1.63E-01
		463.38	10.35	-2.56E-01		4.74E-01
		600.56	17.80	-3.42E-02		3.68E-01
		635.90	11.32	2.56E-01		5.70E-01
+	SB-126	414.70	83.30	-2.85E-02	5.23E-02	5.23E-02
		666.33	99.60	1.48E-03		5.82E-02
		695.00	99.60	2.07E-03		7.91E-02
		720.50	53.80	1.38E-02		1.28E-01
+	SN-126	87.57	37.00	-3.50E-02	7.47E-02	7.47E-02
+	SB-127	473.00	25.00	1.22E-01	1.50E-01	2.54E-01
		685.20	35.70	-1.10E-01		1.50E-01
		783.80	14.70	1.44E-01		4.71E-01
+	I-129	29.78	57.00	3.03E-03	3.56E-02	3.56E-02
		33.60	13.20	9.70E-03		1.46E-01
		39.58	7.52	-2.39E-01		2.42E-01
+	I-131	284.30	6.05	1.26E-01	5.72E-02	7.52E-01
		364.48	81.20	-2.80E-02		5.72E-02
		636.97	7.26	3.79E-01		8.83E-01
		722.89	1.80	-8.65E-01		3.20E+00
+	TE-132	49.72	13.10	6.83E-03	4.29E-02	1.58E-01
		228.16	88.00	-2.83E-02		4.29E-02
+	BA-133	81.00	33.00	-7.28E-03	7.67E-02	7.67E-02
		302.84	17.80	3.38E-02		2.61E-01
		356.01	60.00	3.74E-02		8.70E-02

Analysis Report for 1606040-02

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	I-133	529.87	86.30	2.55E-02	8.06E-02	8.06E-02
+	XE-133	81.00	38.00	-6.43E-03	6.78E-02	6.78E-02
+	CS-134	563.23	8.38	-1.48E-01	6.65E-02	7.46E-01
		569.32	15.43	6.19E-02		3.75E-01
		604.70	97.60	-2.44E-02		6.65E-02
		795.84	85.40	-2.90E-03		7.34E-02
		801.93	8.73	1.06E-02		7.47E-01
+	CS-135	268.24	16.00	-7.91E-02	2.51E-01	2.51E-01
+	I-135	1131.51	22.50	1.31E-01	2.92E-01	4.67E-01
		1260.41	28.60	-9.13E-02		2.92E-01
		1678.03	9.54	6.77E-01		1.56E+00
+	CS-136	153.22	7.46	-8.29E-02	5.30E-02	4.16E-01
		163.89	4.61	1.37E-01		7.55E-01
		176.55	13.56	7.68E-03		2.54E-01
		273.65	12.66	1.12E-03		3.22E-01
		340.57	48.50	4.73E-03		9.59E-02
		818.50	99.70	-8.77E-03		5.30E-02
		1048.07	79.60	-1.28E-02		8.43E-02
		1235.34	19.70	5.75E-02		4.36E-01
+	CS-137	661.65	85.12	-5.91E-04	6.72E-02	6.72E-02
+	LA-138	788.74	34.00	-2.01E-02	1.02E-01	1.89E-01
		1435.80	66.00	-4.95E-02		1.02E-01
+	CE-139	165.85	80.35	4.17E-03	4.28E-02	4.28E-02
+	BA-140	162.64	6.70	2.05E-01	2.33E-01	5.19E-01
		304.84	4.50	2.79E-01		1.03E+00
		423.70	3.20	4.17E-01		1.56E+00
		437.55	2.00	-8.48E-01		2.38E+00
		537.32	25.00	-8.80E-02		2.33E-01
+	LA-140	328.77	20.50	4.01E-02	7.79E-02	2.47E-01
		487.03	45.50	3.07E-02		1.26E-01
		815.85	23.50	3.30E-02		2.46E-01
	1596.49	95.49	-1.19E-02		7.79E-02	
+	CE-141	145.44	48.40	-1.29E-02	6.95E-02	6.95E-02
+	CE-143	57.36	11.80	-1.17E-01	1.02E-01	1.91E-01
		293.26	42.00	-5.98E-02		1.02E-01
		664.55	5.20	-7.62E-02		1.18E+00
+	CE-144	133.54	10.80	-2.16E-01	2.70E-01	2.70E-01
+	PM-144	476.78	42.00	4.82E-02	6.37E-02	1.45E-01
		618.01	98.60	1.40E-03		6.37E-02
		696.49	99.49	2.84E-03		8.00E-02
+	PM-145	36.85	21.70	-1.56E-02	4.67E-02	8.68E-02
		37.36	39.70	-2.05E-02		4.67E-02
		42.30	15.10	9.38E-02		1.36E-01
		72.40	2.31	1.03E-01		1.15E+00
+	PM-146	453.90	39.94	-3.55E-02	1.27E-01	1.27E-01
		735.90	14.01	0.00E+00		4.53E-01
		747.13	13.10	1.10E-02		4.64E-01
+	ND-147	91.11	* 28.90	1.08E-01	1.50E-01	1.50E-01
		531.02	13.10	1.50E-01		4.89E-01

Analysis Report for 1606040-02

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	PM-149	285.90	3.10	9.33E-01	1.57E+00	1.57E+00
+	EU-152	121.78	20.50	-1.74E-02	1.38E-01	1.38E-01
		244.69	5.40	1.34E-01		8.02E-01
		344.27	19.13	5.03E-02		2.52E-01
		778.89	9.20	-1.48E-01		6.45E-01
		964.01	10.40	-5.42E-02		6.76E-01
		1085.78	7.22	-4.81E-01		7.88E-01
		1112.02	9.60	-5.20E-02		7.34E-01
		1407.95	14.94	2.95E-02		4.83E-01
+	GD-153	97.43	31.30	-9.97E-03	8.51E-02	8.51E-02
		103.18	22.20	1.98E-02		1.15E-01
+	EU-154	123.07	40.50	-3.52E-03	7.03E-02	7.03E-02
		723.30	19.70	-8.92E-02		3.17E-01
		873.19	11.50	-2.32E-01		5.56E-01
		996.32	10.30	-5.18E-02		8.28E-01
		1004.76	17.90	-9.76E-02		2.71E-01
		1274.45	35.50	6.54E-02		2.00E-01
+	EU-155	86.50	30.90	-6.26E-05	8.27E-02	8.27E-02
		105.30	20.70	-2.92E-02		1.23E-01
+	EU-156	811.77	10.40	-3.06E-02	5.29E-01	5.29E-01
		1153.47	7.20	-1.28E-01		7.71E-01
		1230.71	8.90	-2.52E-01		8.28E-01
+	HO-166M	184.41	72.60	4.38E-02	5.58E-02	5.58E-02
		280.45	29.60	-5.12E-02		1.44E-01
		410.94	11.10	1.78E-01		4.33E-01
		711.69	54.10	-1.61E-04		1.31E-01
+	TM-171	66.72	0.14	2.45E+00	1.85E+01	1.85E+01
+	HF-172	81.75	4.52	-7.54E-02	2.49E-01	5.50E-01
		125.81	11.30	-1.33E-02		2.49E-01
+	LU-172	181.53	20.60	-2.65E-02	1.23E-01	1.85E-01
		810.06	16.63	9.98E-03		3.48E-01
		912.12	15.25	-1.55E-01		4.07E-01
		1093.66	62.50	4.82E-02		1.23E-01
+	LU-173	100.72	5.24	9.83E-02	1.88E-01	4.86E-01
		272.11	21.20	-4.07E-02		1.88E-01
+	HF-175	343.40	84.00	-5.07E-03	5.36E-02	5.36E-02
+	LU-176	88.34	13.30	1.02E-01	4.49E-02	2.21E-01
		201.83	86.00	1.06E-02		4.49E-02
		306.78	94.00	-1.00E-02		4.65E-02
+	TA-182	67.75	41.20	7.86E-04	6.09E-02	6.09E-02
		1121.30	34.90	8.55E-03		2.04E-01
		1189.05	16.23	-2.10E-01		3.14E-01
		1221.41	26.98	5.99E-03		2.85E-01
		1231.02	11.44	-1.95E-01		6.41E-01
+	IR-192	308.46	29.68	-4.57E-02	1.05E-01	1.48E-01
		468.07	48.10	-4.12E-02		1.05E-01
+	HG-203	279.19	77.30	-1.27E-02	5.55E-02	5.55E-02
+	BI-207	569.67	97.72	9.78E-03	5.92E-02	5.92E-02
		1063.62	74.90	-5.00E-02		7.45E-02

Analysis Report for 1606040-02

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	TL-208	583.14	30.22	7.84E-02	2.03E-01	2.03E-01
		860.37	4.48	2.33E-01		1.65E+00
		2614.66	35.85	4.16E-03		2.32E-01
+	BI-210M	262.00	45.00	4.89E-02	1.00E-01	1.00E-01
		300.00	23.00	5.43E-02		1.97E-01
+	PB-210	46.50	4.25	1.51E-01	4.78E-01	4.78E-01
+	PB-211	404.84	2.90	6.66E-01	1.68E+00	1.68E+00
		831.96	2.90	4.36E-01		2.33E+00
+	BI-212	727.17	11.80	-2.00E-02	5.32E-01	5.32E-01
		1620.62	2.75	-3.02E-01		2.44E+00
+	PB-212	238.63	44.60	2.23E-02	9.56E-02	9.56E-02
		300.09	3.41	3.67E-01		1.33E+00
+	BI-214	609.31	46.30	6.54E-02	1.53E-01	1.53E-01
		1120.29	15.10	3.10E-02		4.45E-01
		1764.49	15.80	1.88E-02		4.55E-01
		2204.22	4.98	5.53E-01		2.09E+00
+	PB-214	295.21	19.19	-6.83E-02	1.35E-01	2.18E-01
		351.92	37.19	8.52E-03		1.35E-01
+	RN-219	401.80	6.50	-1.59E-01	6.69E-01	6.69E-01
+	RA-223	323.87	3.88	4.15E-01	1.26E+00	1.26E+00
+	RA-224	240.98	3.95	-2.66E-01	1.07E+00	1.07E+00
+	RA-225	40.00	31.00	-5.85E-02	5.91E-02	5.91E-02
+	RA-226	186.21	3.28	7.68E-01	1.21E+00	1.21E+00
+	TH-227	50.10	8.40	1.04E-02	2.41E-01	2.41E-01
		236.00	11.50	1.31E-01		3.79E-01
		256.20	6.30	-4.36E-02		6.61E-01
+	AC-228	338.32	11.40	-1.04E-01	2.10E-01	4.03E-01
		911.07	27.70	-1.03E-01		2.10E-01
		969.11	16.60	4.52E-02		4.09E-01
+	TH-230	48.44	16.90	6.50E-02	1.22E-01	1.22E-01
		62.85	4.60	1.40E-01		5.28E-01
		67.67	0.37	8.74E-02		6.77E+00
+	PA-231	283.67	1.60	6.31E-01	2.02E+00	2.87E+00
		302.67	2.30	2.62E-01		2.02E+00
+	TH-231	25.64	14.70	-6.76E-02	1.42E-01	1.42E-01
		84.21	6.40	-4.08E-02		3.98E-01
+	PA-233	311.98	38.60	4.42E-02	1.20E-01	1.20E-01
+	PA-234	131.20	20.40	4.42E-02	1.48E-01	1.48E-01
		733.99	8.80	1.44E-01		7.20E-01
		946.00	12.00	1.23E-01		5.97E-01
+	PA-234M	1001.03	0.92	0.00E+00	7.92E+00	7.92E+00
+	TH-234	63.29	3.80	6.94E-02	6.37E-01	6.37E-01
+	U-235	143.76	10.50	9.53E-02	3.30E-01	3.30E-01
		163.35	4.70	1.33E-01		7.34E-01
		205.31	4.70	1.40E-01		8.19E-01
+	NP-237	86.50	12.60	-1.54E-04	2.03E-01	2.03E-01
+	NP-239	106.10	22.70	-2.78E-02	1.17E-01	1.17E-01

Analysis Report for 1606040-02

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	NP-239	228.18	10.70	-2.46E-01	1.17E-01	3.60E-01
		277.60	14.10	1.02E-01		3.27E-01
+	AM-241	59.54	35.90	4.24E-02	6.58E-02	6.58E-02
+	AM-243	74.67	66.00	8.66E-03	4.06E-02	4.06E-02
+	CM-243	209.75	3.29	-3.69E-01	3.17E-01	1.14E+00
		228.14	10.60	-2.28E-01		3.46E-01
		277.60	14.00	9.83E-02		3.17E-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	5.80E-01	5.80E-01	2.09E-01	2.65E-01
NA-22	1274.54	99.94	7.11E-02	7.11E-02	2.32E-02	2.87E-02
NA-24	1368.53	99.99	1.04E-01	9.96E-02	3.13E-02	4.34E-02
	2754.09	99.86	9.96E-02		-3.57E-03	3.53E-02
AL-26	1808.65	99.76	7.36E-02	7.36E-02	9.87E-03	2.75E-02
K-40	1460.81	10.67	6.99E-01	6.99E-01	-1.78E-02	2.77E-01
AR-41	1293.64	99.16	2.57E-01	2.57E-01	-6.53E-03	1.06E-01
TI-44	67.88	94.40	2.66E-02	2.66E-02	3.43E-04	1.27E-02
	78.34	96.00	2.73E-02		1.19E-02	1.30E-02
SC-46	889.25	99.98	5.70E-02	5.70E-02	1.60E-03	2.36E-02
	1120.51	99.99	6.72E-02		4.69E-03	2.76E-02
V-48	983.52	99.98	8.24E-02	8.24E-02	7.13E-03	3.58E-02
	1312.10	97.50	9.29E-02		2.13E-02	3.92E-02
CR-51	320.08	9.83	4.59E-01	4.59E-01	-1.79E-01	2.11E-01
MN-54	834.83	99.97	6.79E-02	6.79E-02	-5.06E-03	2.94E-02
CO-56	846.75	99.96	6.67E-02	6.67E-02	-1.98E-02	2.87E-02

Analysis Report for 1606040-02

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
CO-56	1037.75	14.03	5.38E-01	6.67E-02	-7.73E-02	2.29E-01
	1238.25	67.00	1.22E-01		-2.20E-02	5.12E-02
	1771.40	15.51	5.20E-01		9.73E-02	2.01E-01
	2598.48	16.90	4.90E-01		-1.67E-01	1.74E-01
CO-57	122.06	85.51	3.31E-02	3.31E-02	-4.19E-03	1.56E-02
	136.48	10.60	2.95E-01		-8.89E-02	1.39E-01
CO-58	810.76	99.40	5.75E-02	5.75E-02	1.65E-02	2.43E-02
FE-59	1099.22	56.50	1.02E-01	1.02E-01	-4.26E-02	4.05E-02
	1291.56	43.20	1.88E-01		6.90E-03	7.78E-02
CO-60	1173.22	100.00	6.58E-02	6.58E-02	-9.08E-03	2.66E-02
	1332.49	100.00	6.87E-02		-5.24E-03	2.73E-02
ZN-65	1115.52	50.75	1.15E-01	1.15E-01	-7.61E-02	4.57E-02
GA-67	93.31	35.70	8.86E-02	8.86E-02	6.82E-02	4.23E-02
	208.95	2.24	1.66E+00		-9.97E-01	7.76E-01
	300.22	16.00	2.91E-01		-4.02E-02	1.35E-01
SE-75	121.11	16.70	1.66E-01	5.37E-02	-6.69E-02	7.82E-02
	136.00	59.20	5.37E-02		2.57E-03	2.54E-02
	264.65	59.80	7.23E-02		2.42E-02	3.36E-02
	279.53	25.20	1.70E-01		-3.90E-02	7.88E-02
	400.65	11.40	3.67E-01		-6.58E-02	1.64E-01
RB-82	776.52	13.00	4.72E-01	4.72E-01	-6.14E-02	2.03E-01
RB-83	520.41	46.00	1.08E-01	1.08E-01	-6.51E-02	4.79E-02
	529.64	30.30	2.07E-01		6.54E-02	9.36E-02
	552.65	16.40	3.00E-01		-2.97E-01	1.31E-01
KR-85	513.99	0.43	2.02E+01	2.02E+01	1.51E+01	9.44E+00
SR-85	513.99	99.27	8.84E-02	8.84E-02	6.62E-02	4.13E-02
Y-88	898.02	93.40	7.30E-02	7.30E-02	3.45E-03	3.13E-02
	1836.01	99.38	9.80E-02		2.82E-02	3.96E-02
NB-93M	16.57	9.43	2.22E-01	2.22E-01	3.75E-01	1.06E-01
NB-94	702.63	100.00	7.26E-02	6.85E-02	-4.74E-03	3.24E-02
	871.10	100.00	6.85E-02		4.42E-03	2.95E-02
NB-95	765.79	99.81	6.06E-02	6.06E-02	-2.07E-03	2.61E-02
NB-95M	235.69	25.00	1.79E-01	1.79E-01	6.17E-02	8.38E-02
ZR-95	724.18	43.70	1.43E-01	1.18E-01	-1.86E-02	6.25E-02
	756.72	55.30	1.18E-01		3.17E-02	5.16E-02
MO-99	181.06	6.20	5.97E-01	4.39E-01	-6.52E-02	2.80E-01
	739.58	12.80	4.39E-01		-4.49E-02	1.87E-01
	778.00	4.50	1.36E+00		-3.13E-01	5.83E-01
RU-103	497.08	89.00	5.48E-02	5.48E-02	0.00E+00	2.43E-02
RU-106	621.84	9.80	6.44E-01	6.44E-01	9.52E-02	2.87E-01
AG-108M	433.93	89.90	5.64E-02	5.64E-02	2.05E-02	2.55E-02
	614.37	90.40	6.63E-02		-3.02E-02	2.94E-02
	722.95	90.50	6.90E-02		-1.94E-02	3.01E-02
CD-109	88.03	3.72	7.46E-01	7.46E-01	-3.50E-01	3.55E-01
AG-110M	657.75	93.14	6.11E-02	6.11E-02	-9.49E-03	2.67E-02
	677.61	10.53	5.25E-01		-7.83E-02	2.27E-01
	706.67	16.46	4.09E-01		-5.80E-03	1.81E-01
	763.93	21.98	2.34E-01		2.81E-02	9.82E-02
	884.67	71.63	9.04E-02		7.25E-03	3.84E-02
	1384.27	23.94	3.78E-01		-5.88E-03	1.58E-01
CD-113M	263.70	0.02	1.86E+02	1.86E+02	1.56E+01	8.64E+01
SN-113	255.12	1.93	2.15E+00	7.19E-02	-9.64E-01	1.00E+00
	391.69	64.90	7.19E-02		3.90E-02	3.26E-02

Analysis Report for 1606040-02

BLANK

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	3.82E-02	3.82E-02	-7.36E-03	1.79E-02
SB-124	602.71	97.87	6.02E-02	3.57E-02	-6.42E-02	2.67E-02
	645.85	7.26	7.91E-01		-1.45E-01	3.47E-01
	722.78	11.10	5.15E-01		-1.39E-01	2.22E-01
	1691.02	49.00	3.57E-02		0.00E+00	0.00E+00
I-125	35.49	6.49	3.00E-01	3.00E-01	1.00E-02	1.43E-01
SB-125	176.33	6.89	4.96E-01	1.63E-01	1.50E-02	2.33E-01
	427.89	29.33	1.63E-01		-1.11E-02	7.34E-02
	463.38	10.35	4.74E-01		-2.56E-01	2.12E-01
	600.56	17.80	3.68E-01		-3.42E-02	1.66E-01
	635.90	11.32	5.70E-01		2.56E-01	2.54E-01
SB-126	414.70	83.30	5.23E-02	5.23E-02	-2.85E-02	2.34E-02
	666.33	99.60	5.82E-02		1.48E-03	2.54E-02
	695.00	99.60	7.91E-02		2.07E-03	3.57E-02
	720.50	53.80	1.28E-01		1.38E-02	5.68E-02
SN-126	87.57	37.00	7.47E-02	7.47E-02	-3.50E-02	3.56E-02
SB-127	473.00	25.00	2.54E-01	1.50E-01	1.22E-01	1.16E-01
	685.20	35.70	1.50E-01		-1.10E-01	6.42E-02
	783.80	14.70	4.71E-01		1.44E-01	2.06E-01
I-129	29.78	57.00	3.56E-02	3.56E-02	3.03E-03	1.70E-02
	33.60	13.20	1.46E-01		9.70E-03	6.95E-02
	39.58	7.52	2.42E-01		-2.39E-01	1.15E-01
I-131	284.30	6.05	7.52E-01	5.72E-02	1.26E-01	3.49E-01
	364.48	81.20	5.72E-02		-2.80E-02	2.61E-02
	636.97	7.26	8.83E-01		3.79E-01	3.93E-01
	722.89	1.80	3.20E+00		-8.65E-01	1.38E+00
TE-132	49.72	13.10	1.58E-01	4.29E-02	6.83E-03	7.53E-02
	228.16	88.00	4.29E-02		-2.83E-02	1.99E-02
BA-133	81.00	33.00	7.67E-02	7.67E-02	-7.28E-03	3.65E-02
	302.84	17.80	2.61E-01		3.38E-02	1.21E-01
	356.01	60.00	8.70E-02		3.74E-02	4.02E-02
I-133	529.87	86.30	8.06E-02	8.06E-02	2.55E-02	3.65E-02
XE-133	81.00	38.00	6.78E-02	6.78E-02	-6.43E-03	3.22E-02
CS-134	563.23	8.38	7.46E-01	6.65E-02	-1.48E-01	3.36E-01
	569.32	15.43	3.75E-01		6.19E-02	1.67E-01
	604.70	97.60	6.65E-02		-2.44E-02	2.98E-02
	795.84	85.40	7.34E-02		-2.90E-03	3.16E-02
	801.93	8.73	7.47E-01		1.06E-02	3.23E-01
CS-135	268.24	16.00	2.51E-01	2.51E-01	-7.91E-02	1.16E-01
I-135	1131.51	22.50	4.67E-01	2.92E-01	1.31E-01	1.95E-01
	1260.41	28.60	2.92E-01		-9.13E-02	1.13E-01
	1678.03	9.54	1.56E+00		6.77E-01	6.55E-01
CS-136	153.22	7.46	4.16E-01	5.30E-02	-8.29E-02	1.95E-01
	163.89	4.61	7.55E-01		1.37E-01	3.56E-01
	176.55	13.56	2.54E-01		7.68E-03	1.19E-01
	273.65	12.66	3.22E-01		1.12E-03	1.49E-01
	340.57	48.50	9.59E-02		4.73E-03	4.40E-02
	818.50	99.70	5.30E-02		-8.77E-03	2.20E-02
	1048.07	79.60	8.43E-02		-1.28E-02	3.49E-02
	1235.34	19.70	4.36E-01		5.75E-02	1.84E-01
CS-137	661.65	85.12	6.72E-02	6.72E-02	-5.91E-04	2.93E-02
LA-138	788.74	34.00	1.89E-01	1.02E-01	-2.01E-02	8.17E-02
	1435.80	66.00	1.02E-01		-4.95E-02	3.95E-02

Analysis Report for 1606040-02

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
CE-139	165.85	80.35	4.28E-02	4.28E-02	4.17E-03	2.01E-02
BA-140	162.64	6.70	5.19E-01	2.33E-01	2.05E-01	2.45E-01
	304.84	4.50	1.03E+00		2.79E-01	4.76E-01
	423.70	3.20	1.56E+00		4.17E-01	7.06E-01
	437.55	2.00	2.38E+00		-8.48E-01	1.07E+00
	537.32	25.00	2.33E-01		-8.80E-02	1.04E-01
LA-140	328.77	20.50	2.47E-01	7.79E-02	4.01E-02	1.14E-01
	487.03	45.50	1.26E-01		3.07E-02	5.69E-02
	815.85	23.50	2.46E-01		3.30E-02	1.04E-01
	1596.49	95.49	7.79E-02		-1.19E-02	3.02E-02
CE-141	145.44	48.40	6.95E-02	6.95E-02	-1.29E-02	3.28E-02
CE-143	57.36	11.80	1.91E-01	1.02E-01	-1.17E-01	9.07E-02
	293.26	42.00	1.02E-01		-5.98E-02	4.70E-02
	664.55	5.20	1.18E+00		-7.62E-02	5.16E-01
CE-144	133.54	10.80	2.70E-01	2.70E-01	-2.16E-01	1.27E-01
PM-144	476.78	42.00	1.45E-01	6.37E-02	4.82E-02	6.63E-02
	618.01	98.60	6.37E-02		1.40E-03	2.84E-02
	696.49	99.49	8.00E-02		2.84E-03	3.62E-02
PM-145	36.85	21.70	8.68E-02	4.67E-02	-1.56E-02	4.13E-02
	37.36	39.70	4.67E-02		-2.05E-02	2.22E-02
	42.30	15.10	1.36E-01		9.38E-02	6.47E-02
	72.40	2.31	1.15E+00		1.03E-01	5.47E-01
PM-146	453.90	39.94	1.27E-01	1.27E-01	-3.55E-02	5.71E-02
	735.90	14.01	4.53E-01		0.00E+00	1.98E-01
	747.13	13.10	4.64E-01		1.10E-02	2.01E-01
+ ND-147	91.11	* 28.90	1.50E-01	1.50E-01	1.08E-01	7.24E-02
	531.02	13.10	4.89E-01		1.50E-01	2.22E-01
PM-149	285.90	3.10	1.57E+00	1.57E+00	9.33E-01	7.31E-01
EU-152	121.78	20.50	1.38E-01	1.38E-01	-1.74E-02	6.49E-02
	244.69	5.40	8.02E-01		1.34E-01	3.75E-01
	344.27	19.13	2.52E-01		5.03E-02	1.16E-01
	778.89	9.20	6.45E-01		-1.48E-01	2.76E-01
	964.01	10.40	6.76E-01		-5.42E-02	2.88E-01
	1085.78	7.22	7.88E-01		-4.81E-01	3.13E-01
	1112.02	9.60	7.34E-01		-5.20E-02	3.04E-01
	1407.95	14.94	4.83E-01		2.95E-02	1.92E-01
GD-153	97.43	31.30	8.51E-02	8.51E-02	-9.97E-03	4.03E-02
	103.18	22.20	1.15E-01		1.98E-02	5.44E-02
EU-154	123.07	40.50	7.03E-02	7.03E-02	-3.52E-03	3.31E-02
	723.30	19.70	3.17E-01		-8.92E-02	1.38E-01
	873.19	11.50	5.56E-01		-2.32E-01	2.36E-01
	996.32	10.30	8.28E-01		-5.18E-02	3.61E-01
	1004.76	17.90	2.71E-01		-9.76E-02	1.05E-01
	1274.45	35.50	2.00E-01		6.54E-02	8.08E-02
EU-155	86.50	30.90	8.27E-02	8.27E-02	-6.26E-05	3.92E-02
	105.30	20.70	1.23E-01		-2.92E-02	5.78E-02
EU-156	811.77	10.40	5.29E-01	5.29E-01	-3.06E-02	2.21E-01
	1153.47	7.20	7.71E-01		-1.28E-01	2.99E-01
	1230.71	8.90	8.28E-01		-2.52E-01	3.39E-01
HO-166M	184.41	72.60	5.58E-02	5.58E-02	4.38E-02	2.64E-02
	280.45	29.60	1.44E-01		-5.12E-02	6.66E-02
	410.94	11.10	4.33E-01		1.78E-01	1.96E-01
	711.69	54.10	1.31E-01		-1.61E-04	5.81E-02

Analysis Report for 1606040-02

BLANK

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	1.85E+01	1.85E+01	2.45E+00	8.82E+00
HF-172	81.75	4.52	5.50E-01	2.49E-01	-7.54E-02	2.61E-01
	125.81	11.30	2.49E-01		-1.33E-02	1.17E-01
LU-172	181.53	20.60	1.85E-01	1.23E-01	-2.65E-02	8.74E-02
	810.06	16.63	3.48E-01		9.98E-03	1.47E-01
	912.12	15.25	4.07E-01		-1.55E-01	1.70E-01
	1093.66	62.50	1.23E-01		4.82E-02	5.22E-02
LU-173	100.72	5.24	4.86E-01	1.88E-01	9.83E-02	2.29E-01
	272.11	21.20	1.88E-01		-4.07E-02	8.69E-02
HF-175	343.40	84.00	5.36E-02	5.36E-02	-5.07E-03	2.45E-02
LU-176	88.34	13.30	2.21E-01	4.49E-02	1.02E-01	1.06E-01
	201.83	86.00	4.49E-02		1.06E-02	2.11E-02
	306.78	94.00	4.65E-02		-1.00E-02	2.14E-02
TA-182	67.75	41.20	6.09E-02	6.09E-02	7.86E-04	2.90E-02
	1121.30	34.90	2.04E-01		8.55E-03	8.44E-02
	1189.05	16.23	3.14E-01		-2.10E-01	1.17E-01
	1221.41	26.98	2.85E-01		5.99E-03	1.18E-01
	1231.02	11.44	6.41E-01		-1.95E-01	2.63E-01
IR-192	308.46	29.68	1.48E-01	1.05E-01	-4.57E-02	6.82E-02
	468.07	48.10	1.05E-01		-4.12E-02	4.71E-02
HG-203	279.19	77.30	5.55E-02	5.55E-02	-1.27E-02	2.57E-02
BI-207	569.67	97.72	5.92E-02	5.92E-02	9.78E-03	2.64E-02
	1063.62	74.90	7.45E-02		-5.00E-02	2.96E-02
TL-208	583.14	30.22	2.03E-01	2.03E-01	7.84E-02	9.11E-02
	860.37	4.48	1.65E+00		2.33E-01	7.21E-01
	2614.66	35.85	2.32E-01		4.16E-03	8.21E-02
BI-210M	262.00	45.00	1.00E-01	1.00E-01	4.89E-02	4.68E-02
	300.00	23.00	1.97E-01		5.43E-02	9.11E-02
PB-210	46.50	4.25	4.78E-01	4.78E-01	1.51E-01	2.27E-01
PB-211	404.84	2.90	1.68E+00	1.68E+00	6.66E-01	7.64E-01
	831.96	2.90	2.33E+00		4.36E-01	1.01E+00
BI-212	727.17	11.80	5.32E-01	5.32E-01	-2.00E-02	2.32E-01
	1620.62	2.75	2.44E+00		-3.02E-01	9.12E-01
PB-212	238.63	44.60	9.56E-02	9.56E-02	2.23E-02	4.47E-02
	300.09	3.41	1.33E+00		3.67E-01	6.15E-01
BI-214	609.31	46.30	1.53E-01	1.53E-01	6.54E-02	6.92E-02
	1120.29	15.10	4.45E-01		3.10E-02	1.82E-01
	1764.49	15.80	4.55E-01		1.88E-02	1.70E-01
	2204.22	4.98	2.09E+00		5.53E-01	8.30E-01
PB-214	295.21	19.19	2.18E-01	1.35E-01	-6.83E-02	1.00E-01
	351.92	37.19	1.35E-01		8.52E-03	6.22E-02
RN-219	401.80	6.50	6.69E-01	6.69E-01	-1.59E-01	3.00E-01
RA-223	323.87	3.88	1.26E+00	1.26E+00	4.15E-01	5.85E-01
RA-224	240.98	3.95	1.07E+00	1.07E+00	-2.66E-01	4.98E-01
RA-225	40.00	31.00	5.91E-02	5.91E-02	-5.85E-02	2.80E-02
RA-226	186.21	3.28	1.21E+00	1.21E+00	7.68E-01	5.71E-01
TH-227	50.10	8.40	2.41E-01	2.41E-01	1.04E-02	1.14E-01
	236.00	11.50	3.79E-01		1.31E-01	1.78E-01
	256.20	6.30	6.61E-01		-4.36E-02	3.07E-01
AC-228	338.32	11.40	4.03E-01	2.10E-01	-1.04E-01	1.85E-01
	911.07	27.70	2.10E-01		-1.03E-01	8.72E-02
	969.11	16.60	4.09E-01		4.52E-02	1.73E-01
TH-230	48.44	16.90	1.22E-01	1.22E-01	6.50E-02	5.82E-02

Analysis Report for 1606040-02

BLANK

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	5.28E-01	1.22E-01	1.40E-01	2.52E-01
	67.67	0.37	6.77E+00		8.74E-02	3.23E+00
PA-231	283.67	1.60	2.87E+00	2.02E+00	6.31E-01	1.34E+00
	302.67	2.30	2.02E+00		2.62E-01	9.36E-01
TH-231	25.64	14.70	1.42E-01	1.42E-01	-6.76E-02	6.81E-02
	84.21	6.40	3.98E-01		-4.08E-02	1.89E-01
PA-233	311.98	38.60	1.20E-01	1.20E-01	4.42E-02	5.54E-02
PA-234	131.20	20.40	1.48E-01	1.48E-01	4.42E-02	6.99E-02
	733.99	8.80	7.20E-01		1.44E-01	3.14E-01
	946.00	12.00	5.97E-01		1.23E-01	2.56E-01
PA-234M	1001.03	0.92	7.92E+00	7.92E+00	0.00E+00	3.37E+00
TH-234	63.29	3.80	6.37E-01	6.37E-01	6.94E-02	3.04E-01
U-235	143.76	10.50	3.30E-01	3.30E-01	9.53E-02	1.56E-01
	163.35	4.70	7.34E-01		1.33E-01	3.45E-01
	205.31	4.70	8.19E-01		1.40E-01	3.84E-01
NP-237	86.50	12.60	2.03E-01	2.03E-01	-1.54E-04	9.62E-02
NP-239	106.10	22.70	1.17E-01	1.17E-01	-2.78E-02	5.50E-02
	228.18	10.70	3.60E-01		-2.46E-01	1.67E-01
	277.60	14.10	3.27E-01		1.02E-01	1.52E-01
AM-241	59.54	35.90	6.58E-02	6.58E-02	4.24E-02	3.14E-02
AM-243	74.67	66.00	4.06E-02	4.06E-02	8.66E-03	1.94E-02
CM-243	209.75	3.29	1.14E+00	3.17E-01	-3.69E-01	5.31E-01
	228.14	10.60	3.46E-01		-2.28E-01	1.61E-01
	277.60	14.00	3.17E-01		9.83E-02	1.47E-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 1606040-02
BLANK

No Data Review Comments Entered.

369: 8 3 6 6 3 8 5 6

Sample Title: BLANK

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

801: 1 2 2 2 1 1 2 3

Sample Title: BLANK

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

1233: 3 0 0 4 1 1 0 0

Sample Title: BLANK

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

1665: 0 0 1 0 0 0 1 0

Sample Title: BLANK

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

2097: 1 0 1 0 0 1 1 0

Sample Title: BLANK

Channel	1	2	3	4	5	6	7	8
2105:	0	1	0	0	0	1	0	0
2113:	0	0	0	0	0	0	0	1
2121:	0	2	0	0	0	0	0	0
2129:	0	0	2	0	0	0	1	0
2137:	0	0	1	0	0	1	0	0
2145:	0	1	0	0	0	0	0	0
2153:	0	0	0	0	2	1	0	0
2161:	0	0	0	0	0	0	0	0
2169:	0	0	0	0	0	1	0	0
2177:	1	0	0	0	0	0	0	0
2185:	0	0	0	0	0	0	0	1
2193:	0	0	0	0	0	0	1	0
2201:	0	2	0	1	0	0	1	1
2209:	0	0	0	0	0	0	1	0
2217:	0	0	0	0	1	0	0	0
2225:	0	1	0	0	1	0	0	0
2233:	0	0	0	0	0	0	0	0
2241:	1	1	0	1	0	0	0	1
2249:	0	0	0	1	0	1	0	1
2257:	0	0	0	0	0	0	0	0
2265:	0	1	1	0	0	1	0	0
2273:	0	0	0	0	1	0	1	0
2281:	0	0	0	0	0	0	0	0
2289:	0	2	0	0	0	0	1	0
2297:	0	0	0	1	1	0	0	0
2305:	0	0	0	0	1	0	0	0
2313:	0	2	1	2	0	0	0	0
2321:	0	1	0	0	0	0	0	0
2329:	0	0	0	0	0	0	0	0
2337:	1	0	1	0	1	0	0	0
2345:	1	0	0	0	0	1	0	0
2353:	0	0	0	0	0	0	0	0
2361:	0	0	0	0	0	0	0	0
2369:	0	0	0	0	1	0	0	0
2377:	1	2	1	0	0	0	0	0
2385:	0	1	1	0	0	0	0	1
2393:	1	2	0	1	1	0	0	0
2401:	0	0	2	1	0	1	0	0
2409:	0	0	1	0	0	1	0	0
2417:	0	0	0	0	0	0	0	0
2425:	0	0	0	0	0	0	0	0
2433:	0	0	0	0	0	1	0	0
2441:	0	0	1	0	0	1	0	0
2449:	0	0	1	0	0	1	0	0
2457:	0	0	0	1	0	0	0	0
2465:	0	0	0	0	0	0	0	0
2473:	1	0	0	1	2	0	0	0
2481:	1	0	0	1	0	1	1	0
2489:	0	0	0	0	0	0	0	1
2497:	0	0	0	0	1	0	1	1
2505:	0	0	0	0	0	0	0	0
2513:	0	1	0	1	0	0	1	0
2521:	0	0	0	0	0	0	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	0	0	0	0
2553:	0	0	0	0	0	0	0	0
2561:	0	0	0	0	0	0	0	0
2569:	1	0	0	0	0	0	0	1
2577:	1	0	0	0	0	0	1	0
2585:	0	0	0	0	0	0	0	2
2593:	0	0	1	0	0	0	0	0
2601:	0	1	0	0	1	0	0	0
2609:	0	0	1	0	0	0	0	0
2617:	0	0	0	1	1	0	0	0
2625:	1	0	0	1	0	2	0	0
2633:	0	1	0	0	0	0	0	0
2641:	1	0	1	0	0	0	0	0
2649:	0	0	0	0	0	0	0	1
2657:	0	0	0	0	0	0	0	0
2665:	0	0	0	0	0	0	0	0
2673:	0	1	0	0	0	0	0	0
2681:	1	1	0	0	0	0	1	0
2689:	0	0	1	0	0	0	0	0
2697:	0	0	0	1	0	0	0	0
2705:	0	0	0	1	0	0	0	0
2713:	0	0	0	0	0	0	0	1
2721:	0	0	1	0	0	0	0	1
2729:	0	0	0	0	0	0	0	0
2737:	0	0	0	0	0	0	1	0
2745:	0	0	0	0	0	0	0	1
2753:	0	0	0	1	0	0	0	0
2761:	0	0	1	0	0	0	0	0
2769:	1	0	0	0	1	0	0	0
2777:	0	0	1	0	0	0	0	0
2785:	0	0	0	0	1	0	0	0
2793:	0	0	0	0	0	0	0	0
2801:	0	0	1	0	0	0	0	1
2809:	0	0	1	0	0	0	0	0
2817:	0	0	0	0	0	1	0	1
2825:	0	0	0	0	0	0	0	0
2833:	0	2	1	0	0	0	0	1
2841:	0	0	0	0	0	0	0	0
2849:	0	1	0	0	0	0	0	0
2857:	0	0	0	0	0	0	0	0
2865:	0	0	0	0	0	0	0	0
2873:	0	0	0	0	0	0	0	0
2881:	0	0	0	0	0	0	0	0
2889:	0	0	0	0	0	0	0	0
2897:	0	0	0	0	0	0	0	0
2905:	0	0	0	0	1	0	0	1
2913:	0	0	0	0	0	0	0	1
2921:	0	0	1	1	1	0	1	0
2929:	1	0	0	1	0	0	0	0
2937:	2	0	1	0	0	0	0	1
2945:	0	0	0	1	0	0	0	0
2953:	0	0	0	0	1	0	1	0

2961: 0 0 0 0 0 0 0 0 0

Sample Title: BLANK

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

3393: 0 0 0 1 0 0 0 0

Sample Title: BLANK

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

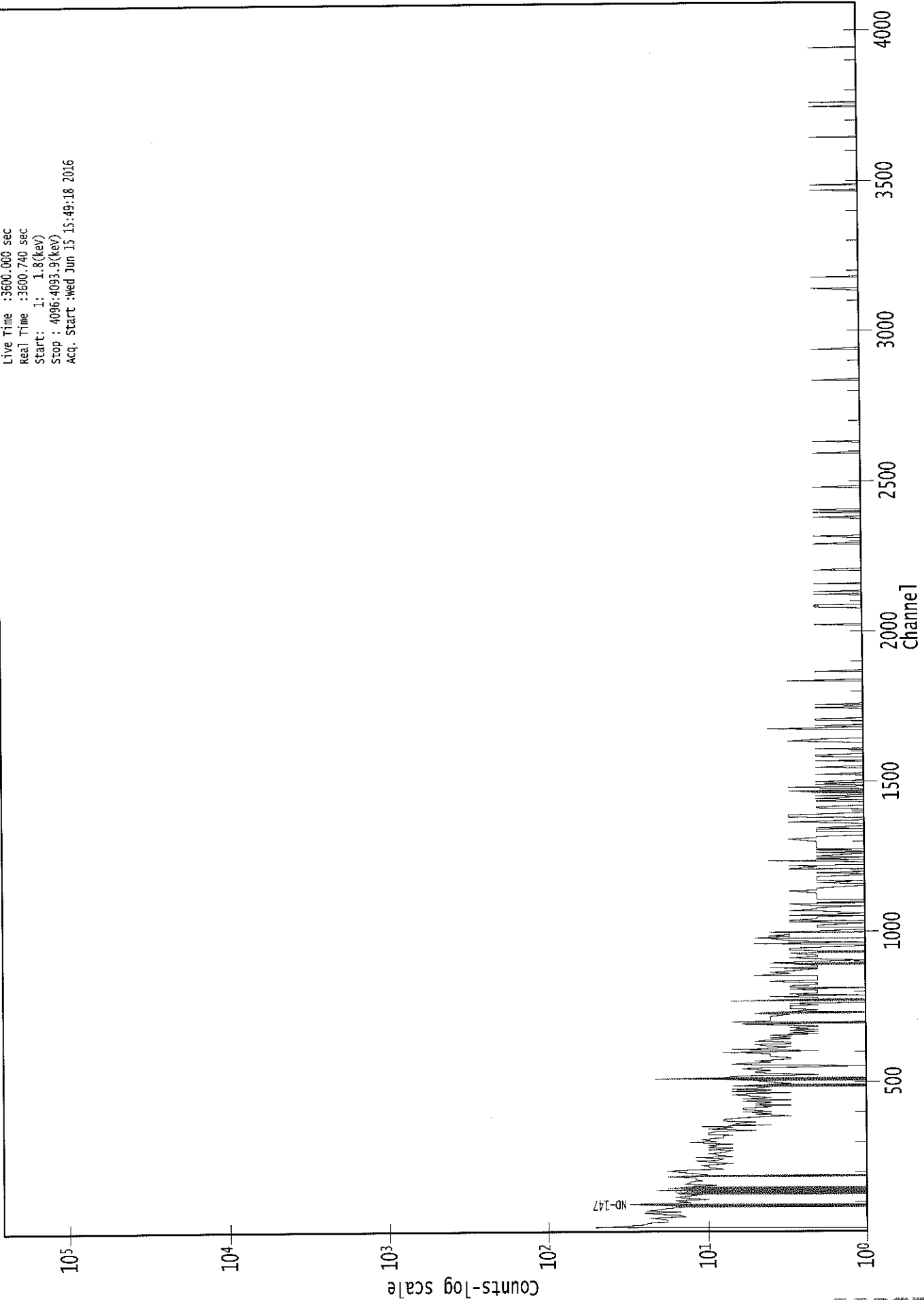
3825: 0 0 0 0 0 0 0 0 0

Sample Title: BLANK

Channel								
3833:	0	0	0	0	0	0	0	0
3841:	0	0	0	0	0	0	0	0
3849:	0	0	0	0	0	0	0	0
3857:	0	0	0	0	1	0	0	0
3865:	0	0	0	0	0	0	0	0
3873:	0	0	0	1	0	0	0	0
3881:	0	1	0	0	0	0	0	0
3889:	0	0	1	0	0	0	0	0
3897:	0	0	0	0	0	0	0	0
3905:	0	0	0	0	0	1	0	0
3913:	0	0	0	0	0	0	0	0
3921:	0	0	0	0	0	0	0	0
3929:	0	0	1	0	0	0	0	0
3937:	0	0	0	0	2	0	0	0
3945:	0	0	0	0	0	1	0	0
3953:	0	1	0	0	0	0	0	0
3961:	0	1	0	0	0	0	0	1
3969:	1	0	0	0	0	1	0	1
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	1	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	0
4041:	0	0	0	0	0	0	0	1
4049:	0	1	0	0	0	0	0	1
4057:	1	0	0	0	0	0	0	0
4065:	0	0	0	0	0	0	0	0
4073:	0	0	0	0	0	0	0	0
4081:	1	0	0	0	0	0	0	0
4089:	0	0	0	0	0	0	0	0

0000038937.CNF

Live Time : 3600.000 sec
Real Time : 3600.740 sec
Start : 1: 1.8(keV)
Stop : 4096.4093.9(keV)
Acq. Start : Wed Jun 15 15:49:18 2016



ROI Type: 1

VB
6/15/16Analysis Report for 1606040-03
CP-5023 00-02

GAMMA SPECTRUM ANALYSIS

Sample Identification : 1606040-03
Sample Description : CP-5023 00-02
Sample Type : SOIL

Sample Size : 4.176E+02 grams
Facility : Countroom

Sample Taken On : 6/2/2016 1:08:28PM
Acquisition Started : 6/15/2016 3:49:28PM

Procedure : GAS-1402 pCi
Operator : Administrator
Detector Name : GE3
Geometry : GAS-1402
Live Time : 3600.0 seconds
Real Time : 3663.6 seconds

Dead Time : 1.74 %

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 : 38938

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
6/16/16

Analysis Report for 1606040-03
CP-5023 00-02

PEAK LOCATE REPORT

Peak Locate Performed on : 6/15/2016 4:50:34PM
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	63.98	0.0000	0.00
2	76.93	77.15	0.0000	0.00
3	87.94	88.15	0.0000	0.00
4	90.95	91.15	0.0000	0.00
5	186.85	187.01	0.0000	0.00
6	210.22	210.36	0.0000	0.00
7	239.29	239.41	0.0000	0.00
8	242.51	242.64	0.0000	0.00
9	270.84	270.95	0.0000	0.00
10	295.95	296.05	0.0000	0.00
11	336.10	336.18	0.0000	0.00
12	339.10	339.18	0.0000	0.00
13	352.67	352.74	0.0000	0.00
14	356.33	356.40	0.0000	0.00
15	378.16	378.22	0.0000	0.00
16	438.70	438.72	0.0000	0.00
17	463.50	463.52	0.0000	0.00
18	513.82	513.81	0.0000	0.00
19	583.90	583.86	0.0000	0.00
20	610.04	609.98	0.0000	0.00
21	775.44	775.31	0.0000	0.00
22	795.52	795.38	0.0000	0.00
23	856.34	856.17	0.0000	0.00
24	911.98	911.79	0.0000	0.00
25	936.33	936.13	0.0000	0.00
26	965.76	965.54	0.0000	0.00
27	969.68	969.46	0.0000	0.00
28	1011.14	1010.90	0.0000	0.00
29	1025.36	1025.11	0.0000	0.00
30	1053.08	1052.82	0.0000	0.00
31	1117.70	1117.41	0.0000	0.00
32	1121.46	1121.18	0.0000	0.00
33	1182.27	1181.96	0.0000	0.00
34	1238.49	1238.16	0.0000	0.00
35	1311.95	1311.58	0.0000	0.00
36	1402.72	1402.32	0.0000	0.00
37	1408.86	1408.46	0.0000	0.00
38	1461.67	1461.25	0.0000	0.00
39	1599.19	1598.71	0.0000	0.00
40	1621.54	1621.06	0.0000	0.00
41	1730.20	1729.68	0.0000	0.00
42	1764.98	1764.45	0.0000	0.00

Analysis Report for 1606040-03
CP-5023 00-02

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
43	1847.27	1846.71	0.0000	0.00
44	1959.17	1958.57	0.0000	0.00
45	1985.59	1984.98	0.0000	0.00
46	2103.97	2103.33	0.0000	0.00
47	2204.15	2203.48	0.0000	0.00
48	2265.01	2264.32	0.0000	0.00
49	2615.69	2614.91	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1606040-03
CP-5023 00-02

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 6/15/2016 4:50:34PM

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	61 - 66	63.98	1.76E+02	81.14	1.18E+03	1.49
	2	76.93	73 - 82	77.15	1.03E+03	129.05	1.75E+03	2.92
m	3	87.94	83 - 97	88.15	2.44E+02	65.80	7.13E+02	1.68
m	4	90.95	83 - 97	91.15	1.30E+02	65.74	6.91E+02	1.69
	5	186.85	182 - 191	187.01	2.15E+02	82.87	8.54E+02	1.91
	6	210.22	207 - 215	210.36	8.41E+01	67.71	6.56E+02	2.57
M	7	239.29	236 - 247	239.41	6.79E+02	66.31	3.83E+02	2.01
m	8	242.51	236 - 247	242.64	1.44E+02	71.93	3.83E+02	2.29
	9	270.84	268 - 274	270.95	6.41E+01	48.70	3.84E+02	1.33
	10	295.95	292 - 299	296.05	1.36E+02	54.30	4.02E+02	1.40
M	11	336.10	335 - 343	336.18	1.94E+01	8.17	3.24E+01	1.80
m	12	339.10	335 - 343	339.18	1.48E+02	42.13	2.23E+02	1.99
M	13	352.67	348 - 359	352.74	3.36E+02	46.55	1.65E+02	1.85
m	14	356.33	348 - 359	356.40	2.34E+01	44.87	1.90E+02	2.43
	15	378.16	376 - 380	378.22	2.06E+01	24.40	1.13E+02	2.19
	16	438.70	436 - 441	438.72	2.37E+01	25.65	1.11E+02	2.34
	17	463.50	457 - 470	463.52	5.95E+01	57.52	3.35E+02	2.38
m	18	513.82	506 - 518	513.81	2.14E+01	32.63	1.37E+02	2.13
	19	583.90	579 - 587	583.86	1.88E+02	42.15	1.58E+02	1.76
	20	610.04	606 - 613	609.98	1.66E+02	42.57	1.90E+02	2.16
	21	775.44	771 - 780	775.31	2.48E+01	31.13	1.22E+02	7.06
	22	795.52	790 - 800	795.38	6.49E+01	31.63	9.82E+01	2.57
	23	856.34	843 - 865	856.17	7.30E+01	46.42	1.38E+02	16.67
	24	911.98	908 - 917	911.79	8.81E+01	35.47	1.28E+02	1.87
	25	936.33	934 - 940	936.13	1.50E+01	17.06	4.20E+01	2.71
M	26	965.76	962 - 975	965.54	2.59E+01	29.19	1.22E+02	2.66
m	27	969.68	962 - 975	969.46	7.26E+01	30.53	9.99E+01	2.52
	28	1011.14	999 - 1020	1010.90	5.86E+01	38.95	9.69E+01	14.97
	29	1025.36	1021 - 1031	1025.11	2.13E+01	23.25	6.14E+01	8.25
	30	1053.08	1050 - 1057	1052.82	1.97E+01	20.49	5.86E+01	3.76
M	31	1117.70	1116 - 1126	1117.41	1.18E+01	7.94	1.41E+01	2.13
m	32	1121.46	1116 - 1126	1121.18	5.53E+01	24.90	6.01E+01	2.75
	33	1182.27	1179 - 1185	1181.96	2.22E+01	18.85	4.77E+01	2.21
	34	1238.49	1236 - 1241	1238.16	2.33E+01	20.42	6.74E+01	2.62
	35	1311.95	1308 - 1314	1311.58	1.07E+01	13.93	2.67E+01	3.30
M	36	1402.72	1399 - 1411	1402.32	1.49E+01	13.03	2.88E+01	2.89
m	37	1408.86	1399 - 1411	1408.46	1.18E+01	12.72	1.85E+01	2.90
	38	1461.67	1454 - 1467	1461.25	4.27E+02	44.96	3.47E+01	2.22
	39	1599.19	1597 - 1601	1598.71	7.00E+00	5.29	0.00E+00	1.16
	40	1621.54	1617 - 1626	1621.06	1.22E+01	9.22	5.67E+00	4.40

Analysis Report for 1606040-03

CP-5023 00-02

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
41	1730.20	1726 -	1732	1729.68	9.50E+00	8.75	7.00E+00	2.54
42	1764.98	1760 -	1767	1764.45	3.60E+01	13.86	8.00E+00	2.90
43	1847.27	1842 -	1850	1846.71	1.05E+01	10.02	9.00E+00	4.58
44	1959.17	1955 -	1961	1958.57	7.00E+00	5.29	0.00E+00	3.00
45	1985.59	1981 -	1987	1984.98	6.19E+00	6.65	3.63E+00	1.37
46	2103.97	2100 -	2107	2103.33	1.27E+01	8.72	4.53E+00	2.40
47	2204.15	2198 -	2207	2203.48	1.34E+01	9.43	5.25E+00	3.04
48	2265.01	2260 -	2267	2264.32	8.20E+00	7.48	3.60E+00	2.71
49	2615.69	2610 -	2618	2614.91	5.36E+01	15.63	4.89E+00	2.63

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 : 6/15/2016 4:50:34PM

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	61 - 66	1.76E+02	81.14	1.18E+03	6.30E+01
	2	76.93	73 - 82	1.03E+03	129.05	1.75E+03	9.20E+01
m	3	87.94	83 - 97	2.44E+02	65.80	7.13E+02	4.39E+01
m	4	90.95	83 - 97	1.30E+02	65.74	6.91E+02	4.32E+01
	5	186.85	182 - 191	2.15E+02	82.87	8.54E+02	6.37E+01
	6	210.22	207 - 215	8.41E+01	67.71	6.56E+02	5.36E+01
M	7	239.29	236 - 247	6.79E+02	66.31	3.83E+02	3.22E+01
m	8	242.51	236 - 247	1.44E+02	71.93	3.83E+02	3.22E+01
	9	270.84	268 - 274	6.41E+01	48.70	3.84E+02	3.78E+01
	10	295.95	292 - 299	1.36E+02	54.30	4.02E+02	4.03E+01
M	11	336.10	335 - 343	1.94E+01	8.17	3.24E+01	9.36E+00
m	12	339.10	335 - 343	1.48E+02	42.13	2.23E+02	2.46E+01
M	13	352.67	348 - 359	3.36E+02	46.55	1.65E+02	2.11E+01
m	14	356.33	348 - 359	2.34E+01	44.87	1.90E+02	2.26E+01
	15	378.16	376 - 380	2.06E+01	24.40	1.13E+02	1.86E+01
	16	438.70	436 - 441	2.37E+01	25.65	1.11E+02	1.95E+01
	17	463.50	457 - 470	5.95E+01	57.52	3.35E+02	4.56E+01
m	18	513.82	506 - 518	2.14E+01	32.63	1.37E+02	1.92E+01

Analysis Report for 1606040-03

CP-5023 00-02

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
19	583.90	579 -	587	1.88E+02	42.15	1.58E+02	2.63E+01
20	610.04	606 -	613	1.66E+02	42.57	1.90E+02	2.78E+01
21	775.44	771 -	780	2.48E+01	31.13	1.22E+02	2.42E+01
22	795.52	790 -	800	6.49E+01	31.63	9.82E+01	2.24E+01
23	856.34	843 -	865	7.30E+01	46.42	1.38E+02	3.55E+01
24	911.98	908 -	917	8.81E+01	35.47	1.28E+02	2.47E+01
25	936.33	934 -	940	1.50E+01	17.06	4.20E+01	1.25E+01
M 26	965.76	962 -	975	2.59E+01	29.19	1.22E+02	1.81E+01
m 27	969.68	962 -	975	7.26E+01	30.53	9.99E+01	1.64E+01
28	1011.14	999 -	1020	5.86E+01	38.95	9.69E+01	2.94E+01
29	1025.36	1021 -	1031	2.13E+01	23.25	6.14E+01	1.75E+01
30	1053.08	1050 -	1057	1.97E+01	20.49	5.86E+01	1.52E+01
M 31	1117.70	1116 -	1126	1.18E+01	7.94	1.41E+01	6.18E+00
m 32	1121.46	1116 -	1126	5.53E+01	24.90	6.01E+01	1.27E+01
33	1182.27	1179 -	1185	2.22E+01	18.85	4.77E+01	1.34E+01
34	1238.49	1236 -	1241	2.33E+01	20.42	6.74E+01	1.48E+01
35	1311.95	1308 -	1314	1.07E+01	13.93	2.67E+01	1.01E+01
M 36	1402.72	1399 -	1411	1.49E+01	13.03	2.88E+01	8.82E+00
m 37	1408.86	1399 -	1411	1.18E+01	12.72	1.85E+01	7.08E+00
38	1461.67	1454 -	1467	4.27E+02	44.96	3.47E+01	1.46E+01
39	1599.19	1597 -	1601	7.00E+00	5.29	0.00E+00	0.00E+00
40	1621.54	1617 -	1626	1.22E+01	9.22	5.67E+00	4.95E+00
41	1730.20	1726 -	1732	9.50E+00	8.75	7.00E+00	5.10E+00
42	1764.98	1760 -	1767	3.60E+01	13.86	8.00E+00	5.70E+00
43	1847.27	1842 -	1850	1.05E+01	10.02	9.00E+00	6.29E+00
44	1959.17	1955 -	1961	7.00E+00	5.29	0.00E+00	0.00E+00
45	1985.59	1981 -	1987	6.19E+00	6.65	3.63E+00	3.63E+00
46	2103.97	2100 -	2107	1.27E+01	8.72	4.53E+00	4.12E+00
47	2204.15	2198 -	2207	1.34E+01	9.43	5.25E+00	4.90E+00
48	2265.01	2260 -	2267	8.20E+00	7.48	3.60E+00	3.96E+00
49	2615.69	2610 -	2618	5.36E+01	15.63	4.89E+00	4.51E+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 : 6/15/2016 4:50:34PM

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

: 00341

Analysis Report for 1606040-03

CP-5023 00-02

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	1	63.75	61 -	66	63.98	1.76E+02	81.14	1.18E+03	TH-234 TH-230
m	2	76.93	73 -	82	77.15	1.03E+03	129.05	1.75E+03	.....
	3	87.94	83 -	97	88.15	2.44E+02	65.80	7.13E+02	CD-109 SN-126 LU-176
m	4	90.95	83 -	97	91.15	1.30E+02	65.74	6.91E+02	ND-147
	5	186.85	182 -	191	187.01	2.15E+02	82.87	8.54E+02	RA-226
	6	210.22	207 -	215	210.36	8.41E+01	67.71	6.56E+02	CM-243
M	7	239.29	236 -	247	239.41	6.79E+02	66.31	3.83E+02	PB-212
m	8	242.51	236 -	247	242.64	1.44E+02	71.93	3.83E+02	.....
	9	270.84	268 -	274	270.95	6.41E+01	48.70	3.84E+02	.....
	10	295.95	292 -	299	296.05	1.36E+02	54.30	4.02E+02	PB-214
M	11	336.10	335 -	343	336.18	1.94E+01	8.17	3.24E+01	.....
m	12	339.10	335 -	343	339.18	1.48E+02	42.13	2.23E+02	AC-228
M	13	352.67	348 -	359	352.74	3.36E+02	46.55	1.65E+02	PB-214
m	14	356.33	348 -	359	356.40	2.34E+01	44.87	1.90E+02	BA-133
	15	378.16	376 -	380	378.22	2.06E+01	24.40	1.13E+02	.....
	16	438.70	436 -	441	438.72	2.37E+01	25.65	1.11E+02	.....
	17	463.50	457 -	470	463.52	5.95E+01	57.52	3.35E+02	SB-125
m	18	513.82	506 -	518	513.81	2.14E+01	32.63	1.37E+02	KR-85 SR-85
	19	583.90	579 -	587	583.86	1.88E+02	42.15	1.58E+02	TL-208
	20	610.04	606 -	613	609.98	1.66E+02	42.57	1.90E+02	BI-214
	21	775.44	771 -	780	775.31	2.48E+01	31.13	1.22E+02	.....
	22	795.52	790 -	800	795.38	6.49E+01	31.63	9.82E+01	CS-134
	23	856.34	843 -	865	856.17	7.30E+01	46.42	1.38E+02	.....
	24	911.98	908 -	917	911.79	8.81E+01	35.47	1.28E+02	LU-172 AC-228
	25	936.33	934 -	940	936.13	1.50E+01	17.06	4.20E+01	.....
M	26	965.76	962 -	975	965.54	2.59E+01	29.19	1.22E+02	.....
m	27	969.68	962 -	975	969.46	7.26E+01	30.53	9.99E+01	AC-228
	28	1011.14	999 -	1020	1010.90	5.86E+01	38.95	9.69E+01	.....
	29	1025.36	1021 -	1031	1025.11	2.13E+01	23.25	6.14E+01	.....
	30	1053.08	1050 -	1057	1052.82	1.97E+01	20.49	5.86E+01	.....
M	31	1117.70	1116 -	1126	1117.41	1.18E+01	7.94	1.41E+01	.....
m	32	1121.46	1116 -	1126	1121.18	5.53E+01	24.90	6.01E+01	TA-182 SC-46
	33	1182.27	1179 -	1185	1181.96	2.22E+01	18.85	4.77E+01	.....
	34	1238.49	1236 -	1241	1238.16	2.33E+01	20.42	6.74E+01	CO-56
	35	1311.95	1308 -	1314	1311.58	1.07E+01	13.93	2.67E+01	V-48
M	36	1402.72	1399 -	1411	1402.32	1.49E+01	13.03	2.88E+01	.....
m	37	1408.86	1399 -	1411	1408.46	1.18E+01	12.72	1.85E+01	EU-152
	38	1461.67	1454 -	1467	1461.25	4.27E+02	44.96	3.47E+01	K-40
	39	1599.19	1597 -	1601	1598.71	7.00E+00	5.29	0.00E+00	.....
	40	1621.54	1617 -	1626	1621.06	1.22E+01	9.22	5.67E+00	BI-212
	41	1730.20	1726 -	1732	1729.68	9.50E+00	8.75	7.00E+00	.....
	42	1764.98	1760 -	1767	1764.45	3.60E+01	13.86	8.00E+00	BI-214
	43	1847.27	1842 -	1850	1846.71	1.05E+01	10.02	9.00E+00	.....
	44	1959.17	1955 -	1961	1958.57	7.00E+00	5.29	0.00E+00	.....
	45	1985.59	1981 -	1987	1984.98	6.19E+00	6.65	3.63E+00	.....

Analysis Report for 1606040-03
CP-5023 00-02

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
46	2103.97	2100 -	2107	2103.33	1.27E+01	8.72	4.53E+00	.....
47	2204.15	2198 -	2207	2203.48	1.34E+01	9.43	5.25E+00	BI-214
48	2265.01	2260 -	2267	2264.32	8.20E+00	7.48	3.60E+00	.....
49	2615.69	2610 -	2618	2614.91	5.36E+01	15.63	4.89E+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 : 6/15/2016 4:50:34PM

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty	
	1	63.75	1.76E+02	81.14	2.17E-02	1.72E-03
	2	76.93	1.03E+03	129.05	2.38E-02	2.16E-03
m	3	87.94	2.44E+02	65.80	2.44E-02	2.52E-03
m	4	90.95	1.30E+02	65.74	2.44E-02	2.46E-03
	5	186.85	2.15E+02	82.87	1.82E-02	1.42E-03
	6	210.22	8.41E+01	67.71	1.68E-02	1.31E-03
M	7	239.29	6.79E+02	66.31	1.52E-02	1.18E-03
m	8	242.51	1.44E+02	71.93	1.50E-02	1.16E-03
	9	270.84	6.41E+01	48.70	1.38E-02	1.03E-03
	10	295.95	1.36E+02	54.30	1.28E-02	9.73E-04
M	11	336.10	1.94E+01	8.17	1.15E-02	9.16E-04
m	12	339.10	1.48E+02	42.13	1.14E-02	9.12E-04
M	13	352.67	3.36E+02	46.55	1.10E-02	8.93E-04
m	14	356.33	2.34E+01	44.87	1.09E-02	8.87E-04
	15	378.16	2.06E+01	24.40	1.04E-02	8.56E-04
	16	438.70	2.37E+01	25.65	9.15E-03	7.90E-04
	17	463.50	5.95E+01	57.52	8.72E-03	7.66E-04
m	18	513.82	2.14E+01	32.63	7.97E-03	7.15E-04
	19	583.90	1.88E+02	42.15	7.13E-03	6.45E-04
	20	610.04	1.66E+02	42.57	6.86E-03	6.19E-04
	21	775.44	2.48E+01	31.13	5.57E-03	4.75E-04
	22	795.52	6.49E+01	31.63	5.45E-03	4.58E-04
	23	856.34	7.30E+01	46.42	5.12E-03	4.09E-04
	24	911.98	8.81E+01	35.47	4.85E-03	3.72E-04
	25	936.33	1.50E+01	17.06	4.74E-03	3.68E-04
M	26	965.76	2.59E+01	29.19	4.62E-03	3.62E-04

Analysis Report for 1606040-03
CP-5023 00-02

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
m	27	969.68	7.26E+01	30.53	4.60E-03	3.61E-04
	28	1011.14	5.86E+01	38.95	4.44E-03	3.54E-04
	29	1025.36	2.13E+01	23.25	4.39E-03	3.51E-04
	30	1053.08	1.97E+01	20.49	4.29E-03	3.46E-04
M	31	1117.70	1.18E+01	7.94	4.08E-03	3.34E-04
m	32	1121.46	5.53E+01	24.90	4.07E-03	3.33E-04
	33	1182.27	2.22E+01	18.85	3.90E-03	3.21E-04
	34	1238.49	2.33E+01	20.42	3.75E-03	3.09E-04
	35	1311.95	1.07E+01	13.93	3.58E-03	2.93E-04
M	36	1402.72	1.49E+01	13.03	3.40E-03	2.78E-04
m	37	1408.86	1.18E+01	12.72	3.39E-03	2.77E-04
	38	1461.67	4.27E+02	44.96	3.29E-03	2.69E-04
	39	1599.19	7.00E+00	5.29	3.07E-03	2.49E-04
	40	1621.54	1.22E+01	9.22	3.04E-03	2.45E-04
	41	1730.20	9.50E+00	8.75	2.90E-03	2.29E-04
	42	1764.98	3.60E+01	13.86	2.86E-03	2.24E-04
	43	1847.27	1.05E+01	10.02	2.77E-03	2.13E-04
	44	1959.17	7.00E+00	5.29	2.66E-03	2.13E-04
	45	1985.59	6.19E+00	6.65	2.63E-03	2.13E-04
	46	2103.97	1.27E+01	8.72	2.54E-03	2.13E-04
	47	2204.15	1.34E+01	9.43	2.46E-03	2.13E-04
	48	2265.01	8.20E+00	7.48	2.42E-03	2.13E-04
	49	2615.69	5.36E+01	15.63	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 : 6/15/2016 4:50:34PM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000038678.CNF

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	1	63.75	1.76E+02	81.14	4.47E+01	1.66E+01	1.31E+02	8.28E+01
	2	76.93	1.03E+03	129.05	6.70E+00	3.28E+00	1.02E+03	1.29E+02
m	3	87.94	2.44E+02	65.80	1.07E+01	3.99E+00	2.33E+02	6.59E+01
m	4	90.95	1.30E+02	65.74			1.30E+02	6.57E+01
	5	186.85	2.15E+02	82.87	3.45E+01	5.92E+00	1.80E+02	8.31E+01
	6	210.22	8.41E+01	67.71			8.41E+01	6.77E+01
M	7	239.29	6.79E+02	66.31	1.33E+01	5.09E+00	6.66E+02	6.65E+01

Analysis Report for 1606040-03

CP-5023 00-02

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
m	8	242.51	1.44E+02	71.93			1.44E+02	7.19E+01
	9	270.84	6.41E+01	48.70			6.41E+01	4.87E+01
	10	295.95	1.36E+02	54.30	1.94E+00	4.39E+00	1.34E+02	5.45E+01
M	11	336.10	1.94E+01	8.17			1.94E+01	8.17E+00
m	12	339.10	1.48E+02	42.13			1.48E+02	4.21E+01
M	13	352.67	3.36E+02	46.55	4.00E+00	3.58E+00	3.32E+02	4.67E+01
m	14	356.33	2.34E+01	44.87			2.34E+01	4.49E+01
	15	378.16	2.06E+01	24.40			2.06E+01	2.44E+01
	16	438.70	2.37E+01	25.65	0.00E+00	0.00E+00	2.37E+01	2.57E+01
	17	463.50	5.95E+01	57.52			5.95E+01	5.75E+01
m	18	513.82	2.14E+01	32.63			2.14E+01	3.26E+01
	19	583.90	1.88E+02	42.15	5.50E+00	3.61E+00	1.83E+02	4.23E+01
	20	610.04	1.66E+02	42.57	5.07E+00	3.83E+00	1.61E+02	4.27E+01
	21	775.44	2.48E+01	31.13			2.48E+01	3.11E+01
	22	795.52	6.49E+01	31.63			6.49E+01	3.16E+01
	23	856.34	7.30E+01	46.42			7.30E+01	4.64E+01
	24	911.98	8.81E+01	35.47			8.81E+01	3.55E+01
	25	936.33	1.50E+01	17.06			1.50E+01	1.71E+01
M	26	965.76	2.59E+01	29.19			2.59E+01	2.92E+01
m	27	969.68	7.26E+01	30.53			7.26E+01	3.05E+01
	28	1011.14	5.86E+01	38.95			5.86E+01	3.89E+01
	29	1025.36	2.13E+01	23.25			2.13E+01	2.33E+01
	30	1053.08	1.97E+01	20.49			1.97E+01	2.05E+01
M	31	1117.70	1.18E+01	7.94			1.18E+01	7.94E+00
m	32	1121.46	5.53E+01	24.90	1.09E+00	2.08E+00	5.42E+01	2.50E+01
	33	1182.27	2.22E+01	18.85			2.22E+01	1.89E+01
	34	1238.49	2.33E+01	20.42			2.33E+01	2.04E+01
	35	1311.95	1.07E+01	13.93			1.07E+01	1.39E+01
M	36	1402.72	1.49E+01	13.03			1.49E+01	1.30E+01
m	37	1408.86	1.18E+01	12.72			1.18E+01	1.27E+01
	38	1461.67	4.27E+02	44.96	4.33E+00	2.02E+00	4.22E+02	4.50E+01
	39	1599.19	7.00E+00	5.29			7.00E+00	5.29E+00
	40	1621.54	1.22E+01	9.22			1.22E+01	9.22E+00
	41	1730.20	9.50E+00	8.75			9.50E+00	8.75E+00
	42	1764.98	3.60E+01	13.86			3.60E+01	1.39E+01
	43	1847.27	1.05E+01	10.02			1.05E+01	1.00E+01
	44	1959.17	7.00E+00	5.29			7.00E+00	5.29E+00
	45	1985.59	6.19E+00	6.65			6.19E+00	6.65E+00
	46	2103.97	1.27E+01	8.72			1.27E+01	8.72E+00
	47	2204.15	1.34E+01	9.43			1.34E+01	9.43E+00
	48	2265.01	8.20E+00	7.48			8.20E+00	7.48E+00
	49	2615.69	5.36E+01	15.63	2.52E+00	1.44E+00	5.10E+01	1.57E+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 1606040-03

CP-5023 00-02

AREA CORRECTION REPORT REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 6/15/2016 4:50:34PM
 Ref. Peak Energy : 0.00 Reference Date :
 Peak Ratio : 0.00 Uncertainty : 0.00
 Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000038678.CNF

Corrected Area is: Original * Peak Ratio - Background

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	1	63.75	1.76E+02	81.14	4.47E+01	1.66E+01	1.31E+02	8.28E+01
	2	76.93	1.03E+03	129.05	6.70E+00	3.28E+00	1.02E+03	1.29E+02
m	3	87.94	2.44E+02	65.80	1.07E+01	3.99E+00	2.33E+02	6.59E+01
m	4	90.95	1.30E+02	65.74			1.30E+02	6.57E+01
	5	186.85	2.15E+02	82.87	3.45E+01	5.92E+00	1.80E+02	8.31E+01
	6	210.22	8.41E+01	67.71			8.41E+01	6.77E+01
M	7	239.29	6.79E+02	66.31	1.33E+01	5.09E+00	6.66E+02	6.65E+01
m	8	242.51	1.44E+02	71.93			1.44E+02	7.19E+01
	9	270.84	6.41E+01	48.70			6.41E+01	4.87E+01
	10	295.95	1.36E+02	54.30	1.94E+00	4.39E+00	1.34E+02	5.45E+01
M	11	336.10	1.94E+01	8.17			1.94E+01	8.17E+00
m	12	339.10	1.48E+02	42.13			1.48E+02	4.21E+01
M	13	352.67	3.36E+02	46.55	4.00E+00	3.58E+00	3.32E+02	4.67E+01
m	14	356.33	2.34E+01	44.87			2.34E+01	4.49E+01
	15	378.16	2.06E+01	24.40			2.06E+01	2.44E+01
	16	438.70	2.37E+01	25.65	0.00E+00	0.00E+00	2.37E+01	2.57E+01
	17	463.50	5.95E+01	57.52			5.95E+01	5.75E+01
m	18	513.82	2.14E+01	32.63			2.14E+01	3.26E+01
	19	583.90	1.88E+02	42.15	5.50E+00	3.61E+00	1.83E+02	4.23E+01
	20	610.04	1.66E+02	42.57	5.07E+00	3.83E+00	1.61E+02	4.27E+01
	21	775.44	2.48E+01	31.13			2.48E+01	3.11E+01
	22	795.52	6.49E+01	31.63			6.49E+01	3.16E+01
	23	856.34	7.30E+01	46.42			7.30E+01	4.64E+01
	24	911.98	8.81E+01	35.47			8.81E+01	3.55E+01
	25	936.33	1.50E+01	17.06			1.50E+01	1.71E+01
M	26	965.76	2.59E+01	29.19			2.59E+01	2.92E+01
m	27	969.68	7.26E+01	30.53			7.26E+01	3.05E+01
	28	1011.14	5.86E+01	38.95			5.86E+01	3.89E+01
	29	1025.36	2.13E+01	23.25			2.13E+01	2.33E+01
	30	1053.08	1.97E+01	20.49			1.97E+01	2.05E+01
M	31	1117.70	1.18E+01	7.94			1.18E+01	7.94E+00
m	32	1121.46	5.53E+01	24.90	1.09E+00	2.08E+00	5.42E+01	2.50E+01
	33	1182.27	2.22E+01	18.85			2.22E+01	1.89E+01
	34	1238.49	2.33E+01	20.42			2.33E+01	2.04E+01
	35	1311.95	1.07E+01	13.93			1.07E+01	1.39E+01
M	36	1402.72	1.49E+01	13.03			1.49E+01	1.30E+01
m	37	1408.86	1.18E+01	12.72			1.18E+01	1.27E+01
	38	1461.67	4.27E+02	44.96	4.33E+00	2.02E+00	4.22E+02	4.50E+01
	39	1599.19	7.00E+00	5.29			7.00E+00	5.29E+00
	40	1621.54	1.22E+01	9.22			1.22E+01	9.22E+00
	41	1730.20	9.50E+00	8.75			9.50E+00	8.75E+00

Analysis Report for 1606040-03

CP-5023 00-02

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
42	1764.98	3.60E+01	13.86			3.60E+01	1.39E+01
43	1847.27	1.05E+01	10.02			1.05E+01	1.00E+01
44	1959.17	7.00E+00	5.29			7.00E+00	5.29E+00
45	1985.59	6.19E+00	6.65			6.19E+00	6.65E+00
46	2103.97	1.27E+01	8.72			1.27E+01	8.72E+00
47	2204.15	1.34E+01	9.43			1.34E+01	9.43E+00
48	2265.01	8.20E+00	7.48			8.20E+00	7.48E+00
49	2615.69	5.36E+01	15.63	2.52E+00	1.44E+00	5.10E+01	1.57E+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	0.889	1460.81 *	10.67	2.16E+01	2.94E+00
KR-85	0.995	513.99 *	0.43	1.11E+01	1.70E+01
SR-85	0.995	513.99 *	99.27	5.59E-02	8.55E-02
CD-109	0.999	88.03 *	3.72	4.71E+00	1.44E+00
SN-126	0.978	87.57 *	37.00	4.64E-01	1.40E-01
ND-147	0.667	91.11 *	28.90	7.57E-01	3.91E-01
		531.02	13.10		
PB-212	0.834	238.63 *	44.60	1.77E+00	2.23E-01
		300.09	3.41		
BI-214	0.685	609.31 *	46.30	9.11E-01	2.55E-01
		1120.29	15.10		
		1764.49 *	15.80	1.43E+00	5.63E-01
		2204.22 *	4.98	1.96E+00	1.39E+00
PB-214	0.915	295.21 *	19.19	9.83E-01	4.06E-01
		351.92 *	37.19	1.45E+00	2.36E-01
RA-226	0.937	186.21 *	3.28	5.42E+00	1.02E+01
AC-228	0.903	338.32 *	11.40	2.04E+00	6.04E-01
		911.07 *	27.70	1.18E+00	4.83E-01
		969.11 *	16.60	1.71E+00	7.31E-01
TH-234	0.966	63.29 *	3.80	2.86E+00	1.82E+00

Analysis Report for 1606040-03

CP-5023 00-02

* = Energy line found in the spectrum.

- = Manually added nuclide.

? = Manually edited nuclide.

Energy Tolerance : 1.000 keV

Nuclide confidence index threshold = 0.30

Errors quoted at 2.000sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 6/15/2016 4:50:34PM
 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	76.93	2.84230E-01		
	6	210.22	2.33593E-02		
m	8	242.51	3.98998E-02		CM-243
	9	270.84	1.77995E-02		
M	11	336.10	5.38777E-03		
m	14	356.33	6.49507E-03		BA-133
	15	378.16	5.72330E-03		
	16	438.70	6.59634E-03	D-Esc	
	17	463.50	1.65345E-02	Tol.	SB-125
	19	583.90	5.07216E-02	Tol.	TL-208
	21	775.44	6.87661E-03		
	22	795.52	1.80239E-02		
	23	856.34	2.02778E-02	Tol.	CS-134
	25	936.33	4.16667E-03		
M	26	965.76	7.19268E-03		
	28	1011.14	1.62708E-02		
	29	1025.36	5.91079E-03		
	30	1053.08	5.47052E-03		
M	31	1117.70	3.26457E-03		
m	32	1121.46	1.50500E-02		
				Tol.	SC-46 TA-182
	33	1182.27	6.15338E-03	D-Esc	
	34	1238.49	6.46930E-03		
	35	1311.95	2.96296E-03		
M	36	1402.72	4.14017E-03	Tol.	V-48
m	37	1408.86	3.26771E-03		
	39	1599.19	1.94444E-03		
	40	1621.54	3.37963E-03		
	41	1730.20	2.63889E-03	Tol.	EU-152
	43	1847.27	2.91667E-03		
	44	1959.17	1.94444E-03		
	45	1985.59	1.71875E-03		
	46	2103.97	3.53704E-03		
	48	2265.01	2.27778E-03	Sum	BI-212

Analysis Report for 1606040-03
CP-5023 00-02

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
49	2615.69	1.41758E-02	15.38		

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	0.88	1460.81 *	10.67	2.16E+01	2.94E+00
KR-85	0.99	513.99 *	0.43	1.11E+01	1.70E+01
SR-85	0.99	513.99 *	99.27	5.59E-02	8.55E-02
CD-109	0.99	88.03 *	3.72	4.71E+00	1.44E+00
SN-126	0.97	87.57 *	37.00	4.64E-01	1.40E-01
ND-147	0.66	91.11 *	28.90	7.57E-01	3.91E-01
		531.02	13.10		
PB-212	0.83	238.63 *	44.60	1.77E+00	2.23E-01
		300.09	3.41		
BI-214	0.68	609.31 *	46.30	9.11E-01	2.55E-01
		1120.29	15.10		
		1764.49 *	15.80	1.43E+00	5.63E-01
		2204.22 *	4.98	1.96E+00	1.39E+00
PB-214	0.91	295.21 *	19.19	9.83E-01	4.06E-01
		351.92 *	37.19	1.45E+00	2.36E-01
RA-226	0.93	186.21 *	3.28	5.42E+00	1.02E+01
AC-228	0.90	338.32 *	11.40	2.04E+00	6.04E-01
		911.07 *	27.70	1.18E+00	4.83E-01
		969.11 *	16.60	1.71E+00	7.31E-01
TH-234	0.96	63.29 *	3.80	2.86E+00	1.82E+00

Analysis Report for 1606040-03
CP-5023 00-02

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

INTERFERENCE CORRECTED REPORT

<i>Nuclide Name</i>	<i>Nuclide Id Confidence</i>	<i>Wt mean Activity (pCi/grams)</i>	<i>Wt mean Activity Uncertainty</i>	<i>Comments</i>	
	K-40	0.889	2.16E+01	2.94E+00	
?	KR-85	0.995	1.11E+01	1.70E+01	
?	SR-85	0.995	5.59E-02	8.55E-02	
?	CD-109	0.999	4.71E+00	1.44E+00	
?	SN-126	0.978	4.64E-01	1.40E-01	
	ND-147	0.667	7.57E-01	3.91E-01	
	PB-212	0.834	1.77E+00	2.23E-01	
	BI-214	0.685	1.03E+00	2.29E-01	
	PB-214	0.915	1.33E+00	2.04E-01	
	RA-226	0.937	5.42E+00	1.02E+01	
	AC-228	0.903	1.56E+00	3.35E-01	
	TH-234	0.966	2.86E+00	1.82E+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 1606040-03
CP-5023 00-02

UNIDENTIFIED PEAKS

Peak Locate Performed on : 6/15/2016 4:50:34PM
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	76.93	2.84230E-01		
	6	210.22	2.33593E-02	Tol.	CM-243
m	8	242.51	3.98998E-02		
	9	270.84	1.77995E-02		
M	11	336.10	5.38777E-03		
m	14	356.33	6.49507E-03	Tol.	BA-133
	15	378.16	5.72330E-03		
	16	438.70	6.59634E-03	D-Esc	
	17	463.50	1.65345E-02	Tol.	SB-125
	19	583.90	5.07216E-02	Tol.	TL-208
	21	775.44	6.87661E-03		
	22	795.52	1.80239E-02	Tol.	CS-134
	23	856.34	2.02778E-02		
	25	936.33	4.16667E-03		
M	26	965.76	7.19268E-03		
	28	1011.14	1.62708E-02		
	29	1025.36	5.91079E-03		
	30	1053.08	5.47052E-03		
M	31	1117.70	3.26457E-03		
m	32	1121.46	1.50500E-02	Tol.	SC-46 TA-182
	33	1182.27	6.15338E-03	D-Esc	
	34	1238.49	6.46930E-03		
	35	1311.95	2.96296E-03	Tol.	V-48
M	36	1402.72	4.14017E-03		
m	37	1408.86	3.26771E-03	Tol.	EU-152
	39	1599.19	1.94444E-03		
	40	1621.54	3.37963E-03	Tol.	BI-212
	41	1730.20	2.63889E-03		
	43	1847.27	2.91667E-03		
	44	1959.17	1.94444E-03		
	45	1985.59	1.71875E-03		
	46	2103.97	3.53704E-03	Sum	
	48	2265.01	2.27778E-03		
	49	2615.69	1.41758E-02		

Analysis Report for 1606040-03
CP-5023 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	4.78E-01	1.12E+00	1.12E+00
+ NA-22	1274.54	99.94	-1.24E-03	1.44E-01	1.44E-01
+ NA-24	1368.53	99.99	-1.74E+05	4.72E+04	2.21E+05
	2754.09	99.86	0.00E+00		4.72E+04
+ AL-26	1808.65	99.76	2.57E-02	9.64E-02	9.64E-02
+ K-40	1460.81	* 10.67	2.16E+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	2.78E-02	9.46E-02	9.46E-02
	78.34	96.00	3.28E-01		1.20E-01
+ SC-46	889.25	99.98	-5.52E-02	1.31E-01	1.31E-01
	1120.51	99.99	2.87E-01		2.30E-01
+ V-48	983.52	99.98	4.32E-02	2.19E-01	2.19E-01
	1312.10	97.50	-7.51E-02		2.41E-01
+ CR-51	320.08	9.83	2.21E-02	1.23E+00	1.23E+00
+ MN-54	834.83	99.97	1.05E-02	1.31E-01	1.31E-01
+ CO-56	846.75	99.96	4.53E-02	1.23E-01	1.23E-01
	1037.75	14.03	-1.16E-01		1.00E+00
	1238.25	67.00	-4.67E-03		3.13E-01
	1771.40	15.51	-7.15E-01		4.92E-01
	2598.48	16.90	1.06E-01		4.94E-01
+ CO-57	122.06	85.51	-8.94E-03	7.96E-02	7.96E-02
	136.48	10.60	-7.29E-02		6.46E-01
+ CO-58	810.76	99.40	7.43E-02	1.43E-01	1.43E-01
+ FE-59	1099.22	56.50	-5.00E-02	2.73E-01	2.73E-01
	1291.56	43.20	8.57E-02		4.62E-01
+ CO-60	1173.22	100.00	1.45E-01	1.50E-01	1.74E-01
	1332.49	100.00	2.61E-02		1.50E-01
+ ZN-65	1115.52	50.75	1.45E-02	2.92E-01	2.92E-01
+ GA-67	93.31	35.70	8.08E+00	4.15E+00	4.15E+00
	208.95	2.24	4.48E+01		6.84E+01
	300.22	16.00	1.80E+00		1.06E+01
+ SE-75	121.11	16.70	-7.00E-02	1.22E-01	4.25E-01

Analysis Report for 1606040-03
CP-5023 00-02

Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	SE-75	136.00	59.20	2.31E-02	1.22E-01
		264.65	59.80	-9.37E-02	1.43E-01
		279.53	25.20	1.12E-01	3.96E-01
		400.65	11.40	-4.17E-02	9.37E-01
+	RB-82	776.52	13.00	7.32E-01	1.44E+00
+	RB-83	520.41	46.00	1.22E-01	2.41E-01
		529.64	30.30	-1.36E-01	3.44E-01
		552.65	16.40	8.11E-02	6.96E-01
+	KR-85	513.99	* 0.43	1.11E+01	4.14E+01
+	SR-85	513.99	* 99.27	5.59E-02	2.08E-01
+	Y-88	898.02	93.40	-1.23E-02	9.30E-02
		1836.01	99.38	-4.73E-03	9.30E-02
+	NB-93M	16.57	9.43	-5.28E+01	1.14E+02
+	NB-94	702.63	100.00	1.63E-02	1.08E-01
		871.10	100.00	-3.09E-02	1.08E-01
+	NB-95	765.79	99.81	3.32E-02	1.68E-01
+	NB-95M	235.69	25.00	7.05E-01	6.68E+00
+	ZR-95	724.18	43.70	-2.88E-01	2.32E-01
		756.72	55.30	-1.03E-01	2.32E-01
+	MO-99	181.06	6.20	1.50E+00	2.44E+01
		739.58	12.80	6.50E-01	2.44E+01
		778.00	4.50	-3.88E+01	7.07E+01
+	RU-103	497.08	89.00	3.88E-02	1.37E-01
+	RU-106	621.84	9.80	-2.96E-01	1.01E+00
+	AG-108M	433.93	89.90	-1.76E-02	9.82E-02
		614.37	90.40	-1.33E-02	1.47E-01
		722.95	90.50	-1.29E-01	1.21E-01
+	CD-109	88.03	* 3.72	4.71E+00	4.42E+00
+	AG-110M	657.75	93.14	-1.21E-01	1.14E-01
		677.61	10.53	5.65E-02	1.02E+00
		706.67	16.46	3.47E-01	7.49E-01
		763.93	21.98	-2.54E-02	5.96E-01
		884.67	71.63	-5.07E-02	1.79E-01
		1384.27	23.94	4.39E-02	5.68E-01
+	CD-113M	263.70	0.02	-2.96E+02	3.42E+02
+	SN-113	255.12	1.93	-1.00E+00	1.65E-01
		391.69	64.90	4.17E-02	1.65E-01
+	TE123M	159.00	84.10	-3.99E-03	8.96E-02
+	SB-124	602.71	97.87	5.57E-02	1.37E-01
		645.85	7.26	7.29E-01	1.80E+00
		722.78	11.10	-1.22E+00	1.14E+00
		1691.02	49.00	6.22E-02	2.41E-01
+	I-125	35.49	6.49	-1.89E-01	3.22E+00
+	SB-125	176.33	6.89	1.13E-01	3.36E-01
		427.89	29.33	7.69E-02	3.36E-01
		463.38	10.35	6.44E-01	1.14E+00
		600.56	17.80	-2.53E-01	6.18E-01
		635.90	11.32	5.75E-01	1.01E+00

Analysis Report for 1606040-03

CP-5023 00-02

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	SB-126	414.70	83.30	-1.77E-01	2.28E-01	2.28E-01
		666.33	99.60	5.76E-02		2.53E-01
		695.00	99.60	7.62E-02		2.64E-01
		720.50	53.80	-1.45E-01		4.06E-01
+	SN-126	87.57	* 37.00	4.64E-01	4.35E-01	4.35E-01
+	SB-127	473.00	25.00	-6.42E-01	3.57E+00	3.72E+00
		685.20	35.70	9.54E-01		3.57E+00
		783.80	14.70	-3.56E-01		8.84E+00
+	I-129	29.78	57.00	-5.66E-02	5.61E-01	5.61E-01
		33.60	13.20	-1.12E-01		1.60E+00
		39.58	7.52	6.00E-01		1.88E+00
+	I-131	284.30	6.05	-5.20E-01	3.39E-01	4.34E+00
		364.48	81.20	7.68E-02		3.39E-01
		636.97	7.26	1.93E+00		4.71E+00
		722.89	1.80	-2.01E+01		1.88E+01
+	TE-132	49.72	13.10	-1.45E+01	1.71E+00	1.27E+01
		228.16	88.00	3.80E-01		1.71E+00
+	BA-133	81.00	33.00	-9.94E-01	2.41E-01	2.43E-01
		302.84	17.80	1.45E-01		5.47E-01
		356.01	60.00	4.52E-01		2.41E-01
+	I-133	529.87	86.30	-1.57E+03	3.96E+03	3.96E+03
+	XE-133	81.00	38.00	-4.89E+00	1.19E+00	1.19E+00
+	CS-134	563.23	8.38	2.14E-02	1.19E-01	1.29E+00
		569.32	15.43	-1.35E-01		6.73E-01
		604.70	97.60	4.06E-02		1.19E-01
		795.84	85.40	1.95E-01		1.81E-01
		801.93	8.73	3.00E-02		1.36E+00
+	CS-135	268.24	16.00	9.05E-03	6.13E-01	6.13E-01
+	I-135	1131.51	22.50	-1.99E+13	1.05E+14	1.40E+14
		1260.41	28.60	-5.57E+13		1.05E+14
		1678.03	9.54	2.05E+12		2.16E+14
+	CS-136	153.22	7.46	-5.63E-01	2.13E-01	1.81E+00
		163.89	4.61	-9.10E-01		2.90E+00
		176.55	13.56	3.86E-01		1.04E+00
		273.65	12.66	-5.58E-01		1.55E+00
		340.57	48.50	1.01E+00		5.38E-01
		818.50	99.70	-3.96E-02		2.13E-01
		1048.07	79.60	3.14E-02		2.99E-01
		1235.34	19.70	9.69E-02		1.88E+00
+	CS-137	661.65	85.12	1.63E-04	1.39E-01	1.39E-01
+	LA-138	788.74	34.00	2.09E-02	1.92E-01	3.55E-01
		1435.80	66.00	2.49E-02		1.92E-01
+	CE-139	165.85	80.35	-2.30E-02	8.98E-02	8.98E-02
+	BA-140	162.64	6.70	2.28E-01	8.17E-01	2.10E+00
		304.84	4.50	-1.93E+00		4.16E+00
		423.70	3.20	-1.96E+00		6.31E+00
		437.55	2.00	1.39E+00		9.31E+00
		537.32	25.00	-1.96E-01		8.17E-01
+	LA-140	328.77	20.50	8.85E-02	3.00E-01	9.50E-01

Analysis Report for 1606040-03
CP-5023 00-02

Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
LA-140	487.03	45.50	2.59E-01	3.00E-01	4.37E-01
	815.85	23.50	-5.65E-01		8.72E-01
	1596.49	95.49	5.61E-02		3.00E-01
+ CE-141	145.44	48.40	4.35E-02	1.96E-01	1.96E-01
+ CE-143	57.36	11.80	2.58E+02	1.98E+02	5.92E+02
	293.26	42.00	-1.05E+01		1.98E+02
	664.55	5.20	9.15E+02		1.80E+03
+ CE-144	133.54	10.80	-2.63E-01	6.38E-01	6.38E-01
+ PM-144	476.78	42.00	1.91E-01	1.07E-01	2.44E-01
	618.01	98.60	-2.94E-03		1.07E-01
	696.49	99.49	2.61E-03		1.25E-01
+ PM-145	36.85	21.70	-1.89E-01	4.04E-01	7.57E-01
	37.36	39.70	5.92E-02		4.04E-01
	42.30	15.10	-2.50E-01		7.90E-01
	72.40	2.31	-3.66E-01		4.16E+00
+ PM-146	453.90	39.94	-1.80E-01	2.42E-01	2.42E-01
	735.90	14.01	1.52E-01		8.36E-01
	747.13	13.10	1.68E-01		8.91E-01
+ ND-147	91.11	* 28.90	7.57E-01	1.27E+00	1.27E+00
	531.02	13.10	-1.03E-01		1.73E+00
+ PM-149	285.90	3.10	-7.71E+01	1.58E+02	1.58E+02
+ EU-152	121.78	20.50	-3.61E-02	3.21E-01	3.21E-01
	244.69	5.40	-5.38E+00		1.88E+00
	344.27	19.13	-1.74E-02		4.92E-01
	778.89	9.20	-1.06E-01		1.22E+00
	964.01	10.40	-1.78E+00		1.54E+00
	1085.78	7.22	4.66E-01		1.66E+00
	1112.02	9.60	-3.20E-01		1.38E+00
	1407.95	14.94	-2.33E-01		9.07E-01
+ GD-153	97.43	31.30	1.20E-01	2.21E-01	2.21E-01
	103.18	22.20	-2.74E-01		2.88E-01
+ EU-154	123.07	40.50	-3.87E-02	1.64E-01	1.64E-01
	723.30	19.70	-5.93E-01		5.56E-01
	873.19	11.50	2.20E-01		1.00E+00
	996.32	10.30	-1.90E-01		9.74E-01
	1004.76	17.90	1.12E-01		6.91E-01
	1274.45	35.50	-3.46E-03		4.02E-01
+ EU-155	86.50	30.90	3.62E-01	2.95E-01	2.95E-01
	105.30	20.70	9.82E-02		3.08E-01
+ EU-156	811.77	10.40	1.19E+00	2.17E+00	2.17E+00
	1153.47	7.20	3.61E-01		3.59E+00
	1230.71	8.90	-2.71E-01		3.31E+00
+ HO-166M	184.41	72.60	1.66E-01	1.27E-01	1.27E-01
	280.45	29.60	2.06E-01		3.16E-01
	410.94	11.10	-3.41E-01		8.65E-01
	711.69	54.10	1.34E-02		2.11E-01
+ TM-171	66.72	0.14	1.06E+01	6.74E+01	6.74E+01
+ HF-172	81.75	4.52	-8.19E+00	6.01E-01	1.66E+00
	125.81	11.30	-2.20E-01		6.01E-01

Analysis Report for 1606040-03
CP-5023 00-02

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	LU-172	181.53	20.60	-1.44E-01	8.75E-01	1.30E+00
		810.06	16.63	4.64E-01		2.82E+00
		912.12	15.25	9.32E+00		5.41E+00
		1093.66	62.50	1.61E-01		8.75E-01
+	LU-173	100.72	5.24	3.47E-01	4.87E-01	1.27E+00
		272.11	21.20	4.79E-01		4.87E-01
+	HF-175	343.40	84.00	1.71E-02	1.48E-01	1.48E-01
+	LU-176	88.34	13.30	4.64E-01	9.76E-02	6.94E-01
		201.83	86.00	5.95E-02		1.03E-01
		306.78	94.00	-7.70E-03		9.76E-02
+	TA-182	67.75	41.20	6.91E-02	2.35E-01	2.35E-01
		1121.30	34.90	7.23E-01		6.24E-01
		1189.05	16.23	1.03E-01		9.22E-01
		1221.41	26.98	-1.35E-02		6.64E-01
		1231.02	11.44	6.28E-01		1.55E+00
+	IR-192	308.46	29.68	9.22E-02	2.11E-01	3.48E-01
		468.07	48.10	-2.69E-01		2.11E-01
+	HG-203	279.19	77.30	8.81E-02	1.48E-01	1.48E-01
+	BI-207	569.67	97.72	-1.46E-02	1.04E-01	1.04E-01
		1063.62	74.90	1.65E-02		1.73E-01
+	TL-208	583.14	30.22	1.58E+00	6.37E-01	6.37E-01
		860.37	4.48	2.22E+00		3.00E+00
		2614.66	35.85	1.22E+00		8.40E-01
+	BI-210M	262.00	45.00	-5.10E-02	1.75E-01	1.75E-01
		300.00	23.00	7.67E-02		4.53E-01
+	PB-210	46.50	4.25	5.42E+00	2.89E+00	2.89E+00
+	PB-211	404.84	2.90	-4.42E-01	3.38E+00	3.38E+00
		831.96	2.90	-3.62E+00		4.01E+00
+	BI-212	727.17	11.80	4.57E-01	1.09E+00	1.09E+00
		1620.62	2.75	9.52E-01		4.32E+00
+	PB-212	238.63	* 44.60	1.77E+00	3.22E-01	3.22E-01
		300.09	3.41	5.18E-01		3.05E+00
+	BI-214	609.31	* 46.30	9.11E-01	3.35E-01	3.35E-01
		1120.29	15.10	1.71E+00		1.37E+00
		1764.49	* 15.80	1.43E+00		5.62E-01
		2204.22	* 4.98	1.96E+00		1.83E+00
+	PB-214	295.21	* 19.19	9.83E-01	3.60E-01	6.14E-01
		351.92	* 37.19	1.45E+00		3.60E-01
+	RN-219	401.80	6.50	-2.59E-01	1.50E+00	1.50E+00
+	RA-223	323.87	3.88	-1.16E+00	2.23E+00	2.23E+00
+	RA-224	240.98	3.95	2.27E+01	4.43E+00	4.43E+00
+	RA-225	40.00	31.00	2.63E-01	8.22E-01	8.22E-01
+	RA-226	186.21	* 3.28	5.42E+00	3.97E+00	3.97E+00
+	TH-227	50.10	8.40	-1.37E+00	1.17E+00	1.20E+00
		236.00	11.50	1.23E-01		1.17E+00
		256.20	6.30	3.49E-01		1.36E+00
+	AC-228	338.32	* 11.40	2.04E+00	6.99E-01	1.04E+00
		911.07	* 27.70	1.18E+00		6.99E-01

Analysis Report for 1606040-03
CP-5023 00-02

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	AC-228	969.11	*	16.60	1.71E+00	6.99E-01	1.57E+00
+	TH-230	48.44		16.90	8.08E-01	6.80E-01	6.80E-01
		62.85		4.60	2.71E+00		2.23E+00
		67.67		0.37	7.11E+00		2.42E+01
+	PA-231	283.67		1.60	-6.32E-01	4.22E+00	5.28E+00
		302.67		2.30	1.12E+00		4.22E+00
+	TH-231	25.64		14.70	1.68E-01	1.19E+00	4.16E+00
		84.21		6.40	-2.11E+00		1.19E+00
+	PA-233	311.98		38.60	-8.85E-03	3.18E-01	3.18E-01
+	PA-234	131.20		20.40	1.81E-01	3.47E-01	3.47E-01
		733.99		8.80	-4.45E-01		1.28E+00
		946.00		12.00	-3.15E-01		9.76E-01
+	PA-234M	1001.03		0.92	7.70E+00	1.32E+01	1.32E+01
+	TH-234	63.29	*	3.80	2.86E+00	2.91E+00	2.91E+00
+	U-235	143.76		10.50	4.86E-01	6.97E-01	6.97E-01
		163.35		4.70	-4.46E-01		1.42E+00
		205.31		4.70	1.81E-01		1.80E+00
+	NP-237	86.50		12.60	8.84E-01	7.20E-01	7.20E-01
+	NP-239	106.10		22.70	1.48E+00	1.33E+01	1.33E+01
		228.18		10.70	9.13E+00		4.11E+01
		277.60		14.10	1.60E+01		3.16E+01
+	AM-241	59.54		35.90	1.10E-01	2.56E-01	2.56E-01
+	AM-243	74.67		66.00	-3.42E-02	1.74E-01	1.74E-01
+	CM-243	209.75		3.29	3.21E+00	6.67E-01	2.89E+00
		228.14		10.60	1.93E-01		8.71E-01
		277.60		14.00	3.38E-01		6.67E-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

: 00357

Analysis Report for 1606040-03

CP-5023 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	1.12E+00	1.12E+00	4.78E-01	5.28E-01
NA-22	1274.54	99.94	1.44E-01	1.44E-01	-1.24E-03	6.52E-02
NA-24	1368.53	99.99	2.21E+05	4.72E+04	-1.74E+05	9.56E+04
	2754.09	99.86	4.72E+04		0.00E+00	0.00E+00
AL-26	1808.65	99.76	9.64E-02	9.64E-02	2.57E-02	3.95E-02
+ K-40	1460.81	*	10.67	1.68E+00	2.16E+01	7.72E-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	9.46E-02	9.46E-02	2.78E-02	4.61E-02
	78.34	96.00	1.20E-01		3.28E-01	5.92E-02
SC-46	889.25	99.98	1.31E-01	1.31E-01	-5.52E-02	6.03E-02
	1120.51	99.99	2.30E-01		2.87E-01	1.09E-01
V-48	983.52	99.98	2.19E-01	2.19E-01	4.32E-02	1.00E-01
	1312.10	97.50	2.41E-01		-7.51E-02	1.08E-01
CR-51	320.08	9.83	1.23E+00	1.23E+00	2.21E-02	5.88E-01
MN-54	834.83	99.97	1.31E-01	1.31E-01	1.05E-02	6.05E-02
CO-56	846.75	99.96	1.23E-01	1.23E-01	4.53E-02	5.60E-02
	1037.75	14.03	1.00E+00		-1.16E-01	4.56E-01
	1238.25	67.00	3.13E-01		-4.67E-03	1.46E-01
	1771.40	15.51	4.92E-01		-7.15E-01	1.84E-01
	2598.48	16.90	4.94E-01		1.06E-01	1.75E-01
CO-57	122.06	85.51	7.96E-02	7.96E-02	-8.94E-03	3.85E-02
	136.48	10.60	6.46E-01		-7.29E-02	3.12E-01
CO-58	810.76	99.40	1.43E-01	1.43E-01	7.43E-02	6.62E-02
FE-59	1099.22	56.50	2.73E-01	2.73E-01	-5.00E-02	1.24E-01
	1291.56	43.20	4.62E-01		8.57E-02	2.12E-01
CO-60	1173.22	100.00	1.74E-01	1.50E-01	1.45E-01	8.08E-02
	1332.49	100.00	1.50E-01		2.61E-02	6.82E-02
ZN-65	1115.52	50.75	2.92E-01	2.92E-01	1.45E-02	1.34E-01
GA-67	93.31	35.70	4.15E+00	4.15E+00	8.08E+00	2.03E+00
	208.95	2.24	6.84E+01		4.48E+01	3.32E+01
	300.22	16.00	1.06E+01		1.80E+00	5.11E+00
SE-75	121.11	16.70	4.25E-01	1.22E-01	-7.00E-02	2.06E-01
	136.00	59.20	1.22E-01		2.31E-02	5.89E-02
	264.65	59.80	1.43E-01		-9.37E-02	6.85E-02
	279.53	25.20	3.96E-01		1.12E-01	1.90E-01
	400.65	11.40	9.37E-01		-4.17E-02	4.45E-01
RB-82	776.52	13.00	1.44E+00	1.44E+00	7.32E-01	6.71E-01
RB-83	520.41	46.00	2.41E-01	2.41E-01	1.22E-01	1.13E-01
	529.64	30.30	3.44E-01		-1.36E-01	1.61E-01
	552.65	16.40	6.96E-01		8.11E-02	3.26E-01
+ KR-85	513.99	*	0.43	4.14E+01	1.11E+01	2.00E+01
+ SR-85	513.99	*	99.27	2.08E-01	5.59E-02	1.00E-01
Y-88	898.02	93.40	1.39E-01	9.30E-02	-1.23E-02	6.36E-02
	1836.01	99.38	9.30E-02		-4.73E-03	3.69E-02
NB-93M	16.57	9.43	1.14E+02	1.14E+02	-5.28E+01	5.54E+01
NB-94	702.63	100.00	1.20E-01	1.08E-01	1.63E-02	5.60E-02
	871.10	100.00	1.08E-01		-3.09E-02	4.91E-02
NB-95	765.79	99.81	1.68E-01	1.68E-01	3.32E-02	7.83E-02
NB-95M	235.69	25.00	6.68E+00	6.68E+00	7.05E-01	3.26E+00
ZR-95	724.18	43.70	2.98E-01	2.32E-01	-2.88E-01	1.38E-01
	756.72	55.30	2.32E-01		-1.03E-01	1.07E-01

Analysis Report for 1606040-03
CP-5023 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	3.10E+01	2.44E+01	1.50E+00	1.49E+01
	739.58	12.80	2.44E+01		6.50E-01	1.13E+01
	778.00	4.50	7.07E+01		-3.88E+01	3.27E+01
RU-103	497.08	89.00	1.37E-01	1.37E-01	3.88E-02	6.41E-02
RU-106	621.84	9.80	1.01E+00	1.01E+00	-2.96E-01	4.67E-01
AG-108M	433.93	89.90	9.82E-02	9.82E-02	-1.76E-02	4.62E-02
	614.37	90.40	1.47E-01		-1.33E-02	6.95E-02
	722.95	90.50	1.21E-01		-1.29E-01	5.57E-02
+ CD-109	88.03	* 3.72	4.42E+00	4.42E+00	4.71E+00	2.18E+00
AG-110M	657.75	93.14	1.14E-01	1.14E-01	-1.21E-01	5.27E-02
	677.61	10.53	1.02E+00		5.65E-02	4.70E-01
	706.67	16.46	7.49E-01		3.47E-01	3.49E-01
	763.93	21.98	5.96E-01		-2.54E-02	2.77E-01
	884.67	71.63	1.79E-01		-5.07E-02	8.25E-02
	1384.27	23.94	5.68E-01		4.39E-02	2.53E-01
CD-113M	263.70	0.02	3.42E+02	3.42E+02	-2.96E+02	1.63E+02
SN-113	255.12	1.93	4.73E+00	1.65E-01	-1.00E+00	2.27E+00
	391.69	64.90	1.65E-01		4.17E-02	7.85E-02
TE123M	159.00	84.10	8.96E-02	8.96E-02	-3.99E-03	4.33E-02
SB-124	602.71	97.87	1.37E-01	1.37E-01	5.57E-02	6.45E-02
	645.85	7.26	1.80E+00		7.29E-01	8.40E-01
	722.78	11.10	1.14E+00		-1.22E+00	5.29E-01
	1691.02	49.00	2.41E-01		6.22E-02	1.01E-01
I-125	35.49	6.49	3.22E+00	3.22E+00	-1.89E-01	1.56E+00
SB-125	176.33	6.89	9.96E-01	3.36E-01	1.13E-01	4.79E-01
	427.89	29.33	3.36E-01		7.69E-02	1.59E-01
	463.38	10.35	1.14E+00		6.44E-01	5.43E-01
	600.56	17.80	6.18E-01		-2.53E-01	2.89E-01
	635.90	11.32	1.01E+00		5.75E-01	4.75E-01
SB-126	414.70	83.30	2.28E-01	2.28E-01	-1.77E-01	1.08E-01
	666.33	99.60	2.53E-01		5.76E-02	1.18E-01
	695.00	99.60	2.64E-01		7.62E-02	1.24E-01
	720.50	53.80	4.06E-01		-1.45E-01	1.87E-01
+ SN-126	87.57	* 37.00	4.35E-01	4.35E-01	4.64E-01	2.15E-01
SB-127	473.00	25.00	3.72E+00	3.57E+00	-6.42E-01	1.74E+00
	685.20	35.70	3.57E+00		9.54E-01	1.67E+00
	783.80	14.70	8.84E+00		-3.56E-01	4.10E+00
I-129	29.78	57.00	5.61E-01	5.61E-01	-5.66E-02	2.71E-01
	33.60	13.20	1.60E+00		-1.12E-01	7.75E-01
	39.58	7.52	1.88E+00		6.00E-01	9.08E-01
I-131	284.30	6.05	4.34E+00	3.39E-01	-5.20E-01	2.08E+00
	364.48	81.20	3.39E-01		7.68E-02	1.61E-01
	636.97	7.26	4.71E+00		1.93E+00	2.20E+00
	722.89	1.80	1.88E+01		-2.01E+01	8.69E+00
TE-132	49.72	13.10	1.27E+01	1.71E+00	-1.45E+01	6.16E+00
	228.16	88.00	1.71E+00		3.80E-01	8.28E-01
BA-133	81.00	33.00	2.43E-01	2.41E-01	-9.94E-01	1.18E-01
	302.84	17.80	5.47E-01		1.45E-01	2.63E-01
	356.01	60.00	2.41E-01		4.52E-01	1.17E-01
I-133	529.87	86.30	3.96E+03	3.96E+03	-1.57E+03	1.85E+03
XE-133	81.00	38.00	1.19E+00	1.19E+00	-4.89E+00	5.82E-01
CS-134	563.23	8.38	1.29E+00	1.19E-01	2.14E-02	6.06E-01
	569.32	15.43	6.73E-01		-1.35E-01	3.15E-01

Analysis Report for 1606040-03
CP-5023 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	1.19E-01	1.19E-01	4.06E-02	5.61E-02	
	795.84	85.40	1.81E-01		1.95E-01	8.53E-02	
	801.93	8.73	1.36E+00		3.00E-02	6.27E-01	
CS-135	268.24	16.00	6.13E-01	6.13E-01	9.05E-03	2.96E-01	
	I-135	1131.51	22.50	1.40E+14	1.05E+14	-1.99E+13	6.41E+13
CS-136	1260.41	28.60	1.05E+14		-5.57E+13	4.73E+13	
	1678.03	9.54	2.16E+14		2.05E+12	8.85E+13	
	153.22	7.46	1.81E+00	2.13E-01	-5.63E-01	8.75E-01	
	163.89	4.61	2.90E+00		-9.10E-01	1.40E+00	
	176.55	13.56	1.04E+00		3.86E-01	5.01E-01	
	273.65	12.66	1.55E+00		-5.58E-01	7.48E-01	
	340.57	48.50	5.38E-01		1.01E+00	2.60E-01	
	818.50	99.70	2.13E-01		-3.96E-02	9.71E-02	
CS-137	1048.07	79.60	2.99E-01		3.14E-02	1.36E-01	
	1235.34	19.70	1.88E+00		9.69E-02	8.73E-01	
LA-138	661.65	85.12	1.39E-01	1.39E-01	1.63E-04	6.48E-02	
	1435.80	66.00	1.92E-01	1.92E-01	2.09E-02	1.65E-01	
CE-139	165.85	80.35	8.98E-02	8.98E-02	-2.30E-02	4.33E-02	
	BA-140	162.64	6.70	2.10E+00	8.17E-01	2.28E-01	1.01E+00
CE-139	304.84	4.50	4.16E+00		-1.93E+00	1.99E+00	
	423.70	3.20	6.31E+00		-1.96E+00	2.99E+00	
	437.55	2.00	9.31E+00		1.39E+00	4.38E+00	
	537.32	25.00	8.17E-01		-1.96E-01	3.82E-01	
	LA-140	328.77	20.50	9.50E-01	3.00E-01	8.85E-02	4.54E-01
	487.03	45.50	4.37E-01		2.59E-01	2.05E-01	
CE-141	815.85	23.50	8.72E-01		-5.65E-01	3.96E-01	
	1596.49	95.49	3.00E-01		5.61E-02	1.33E-01	
CE-143	145.44	48.40	1.96E-01	1.96E-01	4.35E-02	9.50E-02	
CE-143	57.36	11.80	5.92E+02	1.98E+02	2.58E+02	2.88E+02	
	293.26	42.00	1.98E+02		-1.05E+01	9.58E+01	
	664.55	5.20	1.80E+03		9.15E+02	8.47E+02	
CE-144	133.54	10.80	6.38E-01	6.38E-01	-2.63E-01	3.09E-01	
PM-144	476.78	42.00	2.44E-01	1.07E-01	1.91E-01	1.15E-01	
	618.01	98.60	1.07E-01		-2.94E-03	4.96E-02	
	696.49	99.49	1.25E-01		2.61E-03	5.85E-02	
PM-145	36.85	21.70	7.57E-01	4.04E-01	-1.89E-01	3.66E-01	
	37.36	39.70	4.04E-01		5.92E-02	1.96E-01	
	42.30	15.10	7.90E-01		-2.50E-01	3.82E-01	
	72.40	2.31	4.16E+00		-3.66E-01	2.03E+00	
PM-146	453.90	39.94	2.42E-01	2.42E-01	-1.80E-01	1.14E-01	
	735.90	14.01	8.36E-01		1.52E-01	3.88E-01	
	747.13	13.10	8.91E-01		1.68E-01	4.13E-01	
+ ND-147	91.11	* 28.90	1.27E+00	1.27E+00	7.57E-01	6.28E-01	
PM-149	531.02	13.10	1.73E+00		-1.03E-01	8.12E-01	
	285.90	3.10	1.58E+02	1.58E+02	-7.71E+01	7.51E+01	
EU-152	121.78	20.50	3.21E-01	3.21E-01	-3.61E-02	1.56E-01	
	244.69	5.40	1.88E+00		-5.38E+00	9.09E-01	
	344.27	19.13	4.92E-01		-1.74E-02	2.35E-01	
	778.89	9.20	1.22E+00		-1.06E-01	5.63E-01	
	964.01	10.40	1.54E+00		-1.78E+00	7.18E-01	
	1085.78	7.22	1.66E+00		4.66E-01	7.47E-01	
	1112.02	9.60	1.38E+00		-3.20E-01	6.29E-01	

Analysis Report for 1606040-03

CP-5023 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	9.07E-01	3.21E-01	-2.33E-01	4.06E-01
GD-153	97.43	31.30	2.21E-01	2.21E-01	1.20E-01	1.07E-01
	103.18	22.20	2.88E-01		-2.74E-01	1.39E-01
EU-154	123.07	40.50	1.64E-01	1.64E-01	-3.87E-02	7.93E-02
	723.30	19.70	5.56E-01		-5.93E-01	2.57E-01
	873.19	11.50	1.00E+00		2.20E-01	4.58E-01
	996.32	10.30	9.74E-01		-1.90E-01	4.34E-01
	1004.76	17.90	6.91E-01		1.12E-01	3.15E-01
	1274.45	35.50	4.02E-01		-3.46E-03	1.82E-01
EU-155	86.50	30.90	2.95E-01	2.95E-01	3.62E-01	1.44E-01
	105.30	20.70	3.08E-01		9.82E-02	1.49E-01
EU-156	811.77	10.40	2.17E+00	2.17E+00	1.19E+00	1.00E+00
	1153.47	7.20	3.59E+00		3.61E-01	1.64E+00
	1230.71	8.90	3.31E+00		-2.71E-01	1.52E+00
HO-166M	184.41	72.60	1.27E-01	1.27E-01	1.66E-01	6.18E-02
	280.45	29.60	3.16E-01		2.06E-01	1.52E-01
	410.94	11.10	8.65E-01		-3.41E-01	4.10E-01
	711.69	54.10	2.11E-01		1.34E-02	9.81E-02
TM-171	66.72	0.14	6.74E+01	6.74E+01	1.06E+01	3.29E+01
HF-172	81.75	4.52	1.66E+00	6.01E-01	-8.19E+00	8.09E-01
	125.81	11.30	6.01E-01		-2.20E-01	2.91E-01
LU-172	181.53	20.60	1.30E+00	8.75E-01	-1.44E-01	6.27E-01
	810.06	16.63	2.82E+00		4.64E-01	1.30E+00
	912.12	15.25	5.41E+00		9.32E+00	2.58E+00
	1093.66	62.50	8.75E-01		1.61E-01	4.01E-01
LU-173	100.72	5.24	1.27E+00	4.87E-01	3.47E-01	6.14E-01
	272.11	21.20	4.87E-01		4.79E-01	2.35E-01
HF-175	343.40	84.00	1.48E-01	1.48E-01	1.71E-02	7.08E-02
LU-176	88.34	13.30	6.94E-01	9.76E-02	4.64E-01	3.39E-01
	201.83	86.00	1.03E-01		5.95E-02	4.98E-02
	306.78	94.00	9.76E-02		-7.70E-03	4.67E-02
TA-182	67.75	41.20	2.35E-01	2.35E-01	6.91E-02	1.15E-01
	1121.30	34.90	6.24E-01		7.23E-01	2.94E-01
	1189.05	16.23	9.22E-01		1.03E-01	4.19E-01
	1221.41	26.98	6.64E-01		-1.35E-02	3.06E-01
	1231.02	11.44	1.55E+00		6.28E-01	7.12E-01
IR-192	308.46	29.68	3.48E-01	2.11E-01	9.22E-02	1.67E-01
	468.07	48.10	2.11E-01		-2.69E-01	9.91E-02
HG-203	279.19	77.30	1.48E-01	1.48E-01	8.81E-02	7.12E-02
BI-207	569.67	97.72	1.04E-01	1.04E-01	-1.46E-02	4.88E-02
	1063.62	74.90	1.73E-01		1.65E-02	7.88E-02
TL-208	583.14	30.22	6.37E-01	6.37E-01	1.58E+00	3.07E-01
	860.37	4.48	3.00E+00		2.22E+00	1.40E+00
	2614.66	35.85	8.40E-01		1.22E+00	3.90E-01
BI-210M	262.00	45.00	1.75E-01	1.75E-01	-5.10E-02	8.34E-02
	300.00	23.00	4.53E-01		7.67E-02	2.18E-01
PB-210	46.50	4.25	2.89E+00	2.89E+00	5.42E+00	1.41E+00
PB-211	404.84	2.90	3.38E+00	3.38E+00	-4.42E-01	1.60E+00
	831.96	2.90	4.01E+00		-3.62E+00	1.84E+00
BI-212	727.17	11.80	1.09E+00	1.09E+00	4.57E-01	5.10E-01
	1620.62	2.75	4.32E+00		9.52E-01	1.87E+00
+ PB-212	238.63	* 44.60	3.22E-01	3.22E-01	1.77E+00	1.57E-01
	300.09	3.41	3.05E+00		5.18E-01	1.47E+00

Analysis Report for 1606040-03
CP-5023 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	3.35E-01	3.35E-01	9.11E-01	1.60E-01
		1120.29		15.10	1.37E+00		1.71E+00	6.45E-01
		1764.49	*	15.80	5.62E-01		1.43E+00	2.27E-01
		2204.22	*	4.98	1.83E+00		1.96E+00	7.18E-01
+	PB-214	295.21	*	19.19	6.14E-01	3.60E-01	9.83E-01	2.97E-01
		351.92	*	37.19	3.60E-01		1.45E+00	1.74E-01
	RN-219	401.80		6.50	1.50E+00	1.50E+00	-2.59E-01	7.14E-01
	RA-223	323.87		3.88	2.23E+00	2.23E+00	-1.16E+00	1.06E+00
	RA-224	240.98		3.95	4.43E+00	4.43E+00	2.27E+01	2.17E+00
	RA-225	40.00		31.00	8.22E-01	8.22E-01	2.63E-01	3.98E-01
+	RA-226	186.21	*	3.28	3.97E+00	3.97E+00	5.42E+00	1.94E+00
	TH-227	50.10		8.40	1.20E+00	1.17E+00	-1.37E+00	5.82E-01
		236.00		11.50	1.17E+00		1.23E-01	5.70E-01
		256.20		6.30	1.36E+00		3.49E-01	6.54E-01
+	AC-228	338.32	*	11.40	1.04E+00	6.99E-01	2.04E+00	5.04E-01
		911.07	*	27.70	6.99E-01		1.18E+00	3.31E-01
		969.11	*	16.60	1.57E+00		1.71E+00	7.55E-01
	TH-230	48.44		16.90	6.80E-01	6.80E-01	8.08E-01	3.31E-01
		62.85		4.60	2.23E+00		2.71E+00	1.09E+00
		67.67		0.37	2.42E+01		7.11E+00	1.18E+01
	PA-231	283.67		1.60	5.28E+00	4.22E+00	-6.32E-01	2.53E+00
		302.67		2.30	4.22E+00		1.12E+00	2.03E+00
	TH-231	25.64		14.70	4.16E+00	1.19E+00	1.68E-01	2.02E+00
		84.21		6.40	1.19E+00		-2.11E+00	5.80E-01
	PA-233	311.98		38.60	3.18E-01	3.18E-01	-8.85E-03	1.52E-01
	PA-234	131.20		20.40	3.47E-01	3.47E-01	1.81E-01	1.68E-01
		733.99		8.80	1.28E+00		-4.45E-01	5.92E-01
		946.00		12.00	9.76E-01		-3.15E-01	4.45E-01
	PA-234M	1001.03		0.92	1.32E+01	1.32E+01	7.70E+00	6.00E+00
+	TH-234	63.29	*	3.80	2.91E+00	2.91E+00	2.86E+00	1.43E+00
	U-235	143.76		10.50	6.97E-01	6.97E-01	4.86E-01	3.38E-01
		163.35		4.70	1.42E+00		-4.46E-01	6.86E-01
		205.31		4.70	1.80E+00		1.81E-01	8.72E-01
	NP-237	86.50		12.60	7.20E-01	7.20E-01	8.84E-01	3.52E-01
	NP-239	106.10		22.70	1.33E+01	1.33E+01	1.48E+00	6.45E+00
		228.18		10.70	4.11E+01		9.13E+00	1.99E+01
		277.60		14.10	3.16E+01		1.60E+01	1.52E+01
	AM-241	59.54		35.90	2.56E-01	2.56E-01	1.10E-01	1.25E-01
	AM-243	74.67		66.00	1.74E-01	1.74E-01	-3.42E-02	8.55E-02
	CM-243	209.75		3.29	2.89E+00	6.67E-01	3.21E+00	1.40E+00
		228.14		10.60	8.71E-01		1.93E-01	4.21E-01
		277.60		14.00	6.67E-01		3.38E-01	3.21E-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 1606040-03
CP-5023 00-02

No Action Level results available for reporting purposes.

DATA REVIEW COMMENTS REPORT

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

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

Sample Title: CP-5023 00-02

Elapsed Live time: 3600

Elapsed Real Time: 3664

Channel	1	2	3	4	5	6	7	8	9
1:	0	0	0	0	0	0	0	0	0
9:	2	203	219	115	115	129	94	100	
17:	104	75	78	82	65	60	79	68	
25:	62	68	69	55	54	54	78	61	
33:	57	55	63	62	49	66	62	71	
41:	57	62	64	47	72	62	142	115	
49:	68	58	76	70	75	73	85	86	
57:	83	99	92	101	82	108	119	206	
65:	147	104	104	121	115	109	104	112	
73:	99	129	241	294	252	450	164	100	
81:	92	86	64	94	135	86	94	216	
89:	138	111	135	90	169	222	130	62	
97:	60	70	83	80	67	56	50	72	
105:	50	71	70	47	61	68	54	74	
113:	77	49	54	72	68	49	72	66	
121:	60	58	54	70	67	64	63	48	
129:	62	90	65	62	57	57	62	55	
137:	54	61	50	53	65	48	68	61	
145:	79	73	54	45	58	60	41	49	
153:	54	53	64	54	57	48	54	52	
161:	55	46	55	48	48	38	54	47	
169:	55	47	50	37	46	36	49	42	
177:	42	51	53	33	52	41	47	45	
185:	54	102	141	73	48	48	43	36	
193:	44	42	41	42	37	46	39	52	
201:	47	51	45	44	35	34	36	34	
209:	60	69	55	48	40	40	30	45	
217:	38	39	44	44	29	41	44	28	
225:	49	33	38	45	35	35	47	35	
233:	43	38	41	30	39	65	323	285	
241:	85	81	85	36	28	26	24	26	
249:	34	35	26	24	32	36	29	32	
257:	19	23	30	29	25	16	17	20	
265:	24	29	28	28	34	33	70	42	
273:	24	25	29	27	22	36	43	28	
281:	24	31	19	25	25	19	21	18	
289:	16	27	18	29	24	17	47	111	
297:	52	39	18	35	36	30	20	24	
305:	29	22	22	25	21	27	26	24	
313:	20	15	17	21	20	27	14	16	
321:	22	20	23	22	20	15	15	29	
329:	30	28	21	26	28	20	12	28	
337:	18	44	89	67	29	23	22	21	
345:	19	18	14	14	19	14	33	108	
353:	191	51	21	22	26	13	11	16	
361:	14	15	25	14	8	16	22	17	

369: 12 18 10 13 10 20 13 12

Sample Title: CP-5023 00-02

Channel	1	2	3	4	5	6	7	8
377:	16	21	20	8	13	11	15	15
385:	15	10	17	17	17	21	19	22
393:	11	21	18	20	12	19	18	19
401:	17	17	22	12	15	24	17	12
409:	14	22	21	14	16	12	18	17
417:	14	7	17	19	20	20	12	17
425:	15	20	8	18	19	16	11	16
433:	10	14	10	12	11	16	19	14
441:	7	9	14	15	16	12	12	12
449:	20	28	7	17	11	17	12	15
457:	14	16	14	14	10	25	34	35
465:	11	6	12	17	10	9	11	4
473:	9	13	10	14	13	13	11	18
481:	10	8	10	14	11	11	7	15
489:	9	17	6	9	10	12	11	12
497:	14	11	8	11	11	8	10	14
505:	15	7	10	14	15	36	55	47
513:	19	22	11	11	7	6	17	9
521:	11	11	17	13	7	13	6	13
529:	13	7	6	13	8	14	12	12
537:	6	13	9	8	12	14	11	8
545:	11	10	9	10	8	9	11	13
553:	11	9	11	10	7	14	11	13
561:	10	9	15	12	8	11	9	11
569:	13	10	9	7	10	14	9	11
577:	11	11	9	11	7	14	59	109
585:	43	8	7	8	12	7	8	8
593:	9	13	10	8	12	6	15	10
601:	11	8	6	16	21	9	6	14
609:	64	97	53	11	7	11	6	8
617:	9	12	8	8	9	9	8	7
625:	3	6	10	8	8	4	11	8
633:	10	13	13	9	12	5	9	5
641:	5	7	11	14	10	6	9	5
649:	12	8	8	5	11	9	5	11
657:	8	5	10	7	7	15	16	7
665:	9	15	11	6	10	11	5	8
673:	9	5	7	6	7	7	9	10
681:	5	8	6	10	11	8	15	11
689:	2	16	8	9	11	13	6	14
697:	10	12	3	10	11	4	13	11
705:	6	11	8	11	6	11	3	7
713:	8	13	10	9	4	2	10	7
721:	9	7	8	5	10	5	11	24
729:	9	8	7	9	10	7	7	5
737:	8	12	8	8	5	8	8	8
745:	6	10	9	6	8	8	4	8
753:	8	7	6	10	12	3	8	3
761:	12	8	9	11	11	9	3	12
769:	11	7	7	9	13	13	11	4
777:	4	8	13	4	7	7	9	8
785:	9	12	4	13	3	7	7	8
793:	8	12	20	19	9	9	11	4

801: 4 6 10 9 5 9 3 6

Sample Title: CP-5023 00-02

Channel	1	2	3	4	5	6	7	8	9
809:	12	11	6	8	5	7	5	4	
817:	6	4	3	10	6	6	7	5	
825:	11	8	9	12	6	12	5	4	
833:	7	6	5	9	13	10	7	5	
841:	12	6	0	3	4	3	10	5	
849:	9	4	4	5	10	10	4	4	
857:	5	7	7	6	12	12	9	5	
865:	4	2	5	7	4	5	7	4	
873:	3	5	8	8	5	3	8	11	
881:	8	8	7	5	9	4	5	9	
889:	5	3	7	8	5	12	4	6	
897:	7	5	8	6	5	6	3	4	
905:	7	2	8	6	3	8	40	59	
913:	20	3	4	4	5	7	2	3	
921:	3	7	4	6	7	5	7	8	
929:	6	3	5	4	4	2	10	6	
937:	8	3	3	4	2	10	2	5	
945:	9	7	2	6	5	8	6	3	
953:	3	6	6	4	11	3	6	6	
961:	13	4	8	8	11	19	5	10	
969:	40	34	8	3	6	7	5	5	
977:	4	4	4	2	6	7	9	3	
985:	4	7	6	4	5	8	7	8	
993:	3	3	6	3	1	5	2	2	
1001:	5	7	5	9	2	4	4	5	
1009:	7	3	7	5	9	9	4	5	
1017:	1	6	4	2	0	4	7	7	
1025:	6	5	3	3	5	8	4	5	
1033:	4	7	7	3	7	4	4	4	
1041:	6	6	5	3	6	5	4	7	
1049:	1	2	6	7	9	8	6	6	
1057:	5	6	7	6	2	8	8	4	
1065:	3	5	4	3	4	6	7	3	
1073:	4	4	7	5	3	4	10	4	
1081:	2	3	5	3	2	4	5	3	
1089:	7	6	1	6	4	10	8	6	
1097:	6	4	3	6	2	5	4	2	
1105:	8	3	6	6	4	0	8	9	
1113:	3	6	5	2	10	6	7	15	
1121:	25	16	11	5	6	1	7	2	
1129:	7	7	9	6	5	2	8	7	
1137:	8	1	8	7	1	3	5	7	
1145:	5	5	4	3	1	8	4	3	
1153:	5	2	7	9	8	7	4	7	
1161:	6	5	3	8	6	4	6	4	
1169:	6	6	7	9	11	9	2	13	
1177:	2	3	5	3	10	13	8	5	
1185:	2	4	6	6	5	4	5	4	
1193:	7	3	9	6	5	5	5	5	
1201:	6	9	10	8	4	5	5	12	
1209:	7	7	7	9	8	5	5	7	
1217:	4	10	7	3	6	8	7	7	
1225:	10	6	6	2	4	3	11	10	

1233: 9 7 4 2 12 16 13 10

Sample Title: CP-5023 00-02

Channel	1	2	3	4	5	6	7	8	9
1241:	4	11	8	6	9	4	7	7	
1249:	7	3	5	9	4	8	5	5	
1257:	10	3	2	6	5	1	1	5	
1265:	8	3	3	4	2	6	4	4	
1273:	0	4	4	2	4	4	3	5	
1281:	11	5	2	4	3	3	3	3	
1289:	6	5	2	6	5	3	9	4	
1297:	6	3	3	8	1	2	1	7	
1305:	1	2	4	2	1	5	5	6	
1313:	4	1	1	1	6	6	4	4	
1321:	4	5	2	2	5	3	1	4	
1329:	0	6	3	6	4	4	3	3	
1337:	5	3	3	3	4	2	1	3	
1345:	4	1	5	3	3	4	4	5	
1353:	1	0	2	4	3	5	0	1	
1361:	2	2	4	2	2	3	1	1	
1369:	0	4	1	0	6	1	4	2	
1377:	1	5	2	4	2	3	3	2	
1385:	2	0	4	3	2	1	4	1	
1393:	2	1	2	3	2	2	3	0	
1401:	2	8	3	4	1	2	3	6	
1409:	3	3	1	1	1	3	2	1	
1417:	2	3	1	0	2	0	1	2	
1425:	1	0	2	1	2	0	2	4	
1433:	2	3	1	2	2	1	3	4	
1441:	1	4	1	2	2	0	1	2	
1449:	1	1	0	2	2	0	3	3	
1457:	1	4	16	63	171	136	31	8	
1465:	4	2	2	1	4	2	0	0	
1473:	2	0	0	1	0	0	1	3	
1481:	1	1	3	2	0	0	3	2	
1489:	1	1	1	2	2	3	1	2	
1497:	0	1	0	2	2	1	0	2	
1505:	0	1	5	4	2	4	3	2	
1513:	1	0	3	2	1	2	2	3	
1521:	0	1	1	2	0	3	1	2	
1529:	2	1	0	2	0	2	0	1	
1537:	2	1	2	1	1	0	1	2	
1545:	2	2	1	0	1	3	1	2	
1553:	0	1	1	0	2	2	0	4	
1561:	0	3	0	1	2	0	1	2	
1569:	1	1	0	2	3	0	2	3	
1577:	2	1	1	2	1	2	4	0	
1585:	0	0	0	5	1	2	1	6	
1593:	3	4	1	0	0	4	1	2	
1601:	0	0	1	1	1	1	3	1	
1609:	2	0	2	0	0	1	2	0	
1617:	0	0	3	3	2	3	2	1	
1625:	1	0	1	1	1	1	2	2	
1633:	1	0	1	1	1	2	2	2	
1641:	1	1	2	2	1	0	1	1	
1649:	1	0	0	1	1	2	2	3	
1657:	2	1	0	2	1	4	2	0	

1665: 2 1 1 3 1 0 0 4

Sample Title: CP-5023 00-02

Channel								
1673:	0	0	3	0	1	1	0	0
1681:	2	0	0	0	1	1	0	1
1689:	2	1	0	0	1	0	4	1
1697:	0	0	1	3	0	1	0	0
1705:	0	0	1	0	1	0	0	0
1713:	4	0	1	1	1	1	1	1
1721:	0	1	0	1	1	0	2	0
1729:	3	4	4	0	1	1	1	1
1737:	1	0	2	0	2	0	1	1
1745:	0	0	0	1	1	0	0	1
1753:	0	0	2	1	1	0	1	0
1761:	1	3	4	13	10	9	0	1
1769:	1	0	0	0	1	0	0	2
1777:	0	1	1	2	0	1	3	2
1785:	0	1	2	0	0	2	0	1
1793:	1	1	0	0	2	0	0	1
1801:	0	1	0	0	1	0	0	0
1809:	1	0	3	2	0	0	1	1
1817:	2	1	0	1	0	2	1	0
1825:	2	0	1	1	1	1	0	1
1833:	0	2	0	0	1	1	0	0
1841:	1	0	0	1	3	3	4	1
1849:	3	0	1	1	2	0	3	1
1857:	2	2	0	2	2	0	0	0
1865:	0	2	1	1	1	1	1	0
1873:	0	1	0	1	1	0	2	0
1881:	1	0	3	0	2	1	0	1
1889:	0	0	0	0	3	0	0	0
1897:	1	0	1	1	1	2	0	0
1905:	0	3	0	0	1	3	0	1
1913:	1	1	1	1	1	1	3	2
1921:	0	2	2	0	3	0	1	1
1929:	0	0	2	0	1	1	2	0
1937:	0	2	0	0	1	2	0	1
1945:	0	2	1	0	0	1	0	0
1953:	0	0	0	0	1	3	1	2
1961:	0	0	0	0	1	0	1	0
1969:	1	1	2	1	0	0	1	0
1977:	0	1	1	0	1	1	0	0
1985:	2	4	0	0	0	0	0	1
1993:	0	1	0	1	0	0	1	0
2001:	0	2	1	0	2	0	1	1
2009:	1	0	0	0	2	2	1	0
2017:	1	1	0	0	0	1	0	1
2025:	2	1	0	1	1	1	1	0
2033:	1	0	0	1	0	1	3	2
2041:	1	1	0	1	1	0	1	2
2049:	1	0	0	0	1	0	1	0
2057:	0	1	0	2	0	1	0	1
2065:	0	0	0	0	0	1	1	1
2073:	0	0	2	0	0	0	0	0
2081:	2	0	0	1	0	0	0	0
2089:	0	0	0	0	1	0	1	1

2097: 1 0 0 0 1 2 5 4

Sample Title: CP-5023 00-02

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

2529: 0 0 1 0 1 2 0 0

Sample Title: CP-5023 00-02

Channel	1	2	3	4	5	6	7	8
2537:	0	0	0	0	0	1	0	0
2545:	0	0	0	2	0	0	0	0
2553:	0	0	0	0	0	0	1	0
2561:	0	1	2	0	0	1	1	1
2569:	1	0	1	2	0	0	0	0
2577:	0	0	1	0	2	0	0	0
2585:	0	2	0	0	0	0	0	0
2593:	0	0	0	0	0	1	0	0
2601:	1	0	0	0	0	0	0	0
2609:	1	0	0	0	4	17	20	11
2617:	4	0	0	0	0	0	1	0
2625:	0	0	1	0	0	1	0	0
2633:	0	0	0	0	0	1	0	1
2641:	0	1	0	0	0	0	1	0
2649:	0	0	0	0	0	0	0	0
2657:	0	0	0	0	0	0	0	0
2665:	0	1	0	1	0	1	1	0
2673:	0	0	0	1	0	0	1	0
2681:	0	0	0	0	0	0	0	0
2689:	0	0	0	0	1	0	0	0
2697:	0	1	0	0	0	0	0	0
2705:	1	0	0	0	0	1	0	0
2713:	0	0	0	0	0	0	0	0
2721:	1	0	0	0	0	0	1	0
2729:	0	0	0	0	0	0	0	0
2737:	0	1	1	1	1	0	0	0
2745:	1	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:	1	0	0	1	0	0	0	0
2777:	0	0	0	1	2	1	0	0
2785:	0	0	1	0	0	0	1	1
2793:	0	0	1	0	0	0	1	0
2801:	0	1	1	0	0	0	0	0
2809:	1	0	0	0	0	0	0	0
2817:	0	0	0	0	1	0	1	0
2825:	0	0	0	0	0	0	0	0
2833:	0	0	0	0	0	0	0	0
2841:	1	0	0	0	0	0	0	0
2849:	0	0	0	0	0	1	0	1
2857:	0	0	0	0	1	0	0	0
2865:	0	1	0	0	1	0	1	0
2873:	0	1	0	0	0	1	0	0
2881:	0	0	1	0	0	0	0	0
2889:	1	0	0	2	0	1	0	0
2897:	0	0	0	0	0	1	1	0
2905:	0	0	0	0	0	0	0	0
2913:	0	0	0	0	0	0	0	0
2921:	2	0	0	1	0	0	0	0
2929:	0	0	0	1	1	0	0	1
2937:	0	0	0	0	0	0	0	0
2945:	0	1	2	0	0	1	0	0
2953:	0	0	1	0	0	0	0	1

2961: 0 0 0 0 0 0 0 0 0

Sample Title: CP-5023 00-02

Channel								
2969:	0	0	0	0	0	1	0	0
2977:	0	0	0	0	0	0	0	0
2985:	0	0	0	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	0	1	0	0	0
3017:	1	0	0	1	0	0	0	0
3025:	0	0	0	0	0	0	1	0
3033:	0	0	0	0	0	0	0	0
3041:	1	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:	1	0	0	0	1	0	0	0
3073:	1	0	0	0	0	0	1	1
3081:	0	0	0	0	0	0	0	0
3089:	0	0	0	0	0	0	0	0
3097:	0	1	0	0	0	0	0	0
3105:	0	0	0	0	1	0	1	1
3113:	0	0	0	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	1	0	0	0	0
3145:	0	0	0	0	0	0	0	0
3153:	0	0	0	0	0	0	0	1
3161:	0	0	0	0	0	0	0	0
3169:	1	1	0	1	0	0	0	0
3177:	1	0	0	0	0	0	1	0
3185:	0	0	0	0	0	0	0	0
3193:	0	0	0	0	0	0	0	1
3201:	0	0	0	0	0	1	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	1	1	0	1	1
3241:	0	0	0	0	0	0	0	0
3249:	0	0	0	0	0	0	0	0
3257:	0	0	0	1	0	0	0	0
3265:	0	0	0	0	0	0	0	0
3273:	0	0	0	0	1	0	1	0
3281:	0	0	0	0	0	0	1	0
3289:	0	0	0	0	0	0	0	0
3297:	0	0	0	0	1	0	0	0
3305:	0	0	1	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	2	0	0	0	0	0	0
3337:	0	0	0	0	0	0	0	0
3345:	0	1	0	0	0	0	0	1
3353:	0	0	0	0	0	0	0	0
3361:	0	0	0	1	0	1	0	0
3369:	0	0	1	1	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 0 0 0 0 0 0 1

Sample Title: CP-5023 00-02

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

3825: 1 0 0 0 1 0 0 0

Sample Title: CP-5023 00-02

Channel								
3833:	0	0	0	1	0	1	0	0
3841:	0	0	0	0	0	0	1	0
3849:	0	0	0	0	0	0	0	0
3857:	0	0	0	0	0	0	0	0
3865:	1	0	0	0	0	0	0	1
3873:	0	0	0	0	0	0	0	0
3881:	0	0	0	1	0	0	0	0
3889:	0	0	0	0	0	0	0	0
3897:	1	0	0	0	1	0	0	0
3905:	2	0	0	0	0	0	0	0
3913:	0	0	0	0	0	0	2	1
3921:	0	0	1	0	0	0	1	0
3929:	0	0	0	0	0	0	0	0
3937:	0	0	0	0	0	0	0	0
3945:	0	0	0	0	0	0	0	0
3953:	0	0	0	0	0	0	0	0
3961:	0	0	0	1	0	1	0	0
3969:	0	0	0	0	0	0	0	0
3977:	0	0	1	0	0	0	1	0
3985:	0	0	0	0	0	0	0	0
3993:	0	0	0	0	0	1	0	0
4001:	0	0	0	1	0	0	0	0
4009:	0	0	1	0	0	0	0	0
4017:	0	0	0	0	0	0	0	0
4025:	0	0	0	0	0	0	0	0
4033:	0	0	0	0	0	0	0	1
4041:	0	0	0	0	0	0	0	0
4049:	0	0	0	0	0	1	1	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

K.B.
6/15/16Analysis Report for 1606040-04
CP-5023 00-02

GAMMA SPECTRUM ANALYSIS

Sample Identification : 1606040-04
Sample Description : CP-5023 00-02
Sample Type : SOIL

Sample Size : 4.176E+02 grams
Facility : Countroom

Sample Taken On : 6/2/2016 1:08:55PM
Acquisition Started : 6/15/2016 4:50:46PM

Procedure : GAS-1402 pCi
Operator : Administrator
Detector Name : GE3
Geometry : GAS-1402
Live Time : 3600.0 seconds
Real Time : 3622.1 seconds

Dead Time : 0.61 %

Peak Locate Threshold : 2.50
Peak Locate Range (in channels) : 1 - 4096
Peak Area Range (in channels) : 10 - 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 : 38946

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
6/16/16

Analysis Report for 1606040-04
CP-5023 00-02

PEAK LOCATE REPORT

Peak Locate Performed on : 6/15/2016 5:51:10PM
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	63.49	63.71	0.0000	0.00
2	76.76	76.97	0.0000	0.00
3	93.16	93.37	0.0000	0.00
4	130.10	130.28	0.0000	0.00
5	186.85	187.00	0.0000	0.00
6	209.53	209.68	0.0000	0.00
7	239.28	239.41	0.0000	0.00
8	242.37	242.50	0.0000	0.00
9	271.06	271.17	0.0000	0.00
10	280.55	280.66	0.0000	0.00
11	295.87	295.96	0.0000	0.00
12	301.18	301.27	0.0000	0.00
13	310.16	310.25	0.0000	0.00
14	338.88	338.96	0.0000	0.00
15	352.62	352.69	0.0000	0.00
16	417.90	417.94	0.0000	0.00
17	478.93	478.93	0.0000	0.00
18	511.76	511.75	0.0000	0.00
19	557.12	557.09	0.0000	0.00
20	584.25	584.20	0.0000	0.00
21	605.86	605.80	0.0000	0.00
22	610.21	610.15	0.0000	0.00
23	643.65	643.58	0.0000	0.00
24	728.91	728.80	0.0000	0.00
25	774.11	773.98	0.0000	0.00
26	796.92	796.78	0.0000	0.00
27	861.41	861.24	0.0000	0.00
28	911.93	911.73	0.0000	0.00
29	965.76	965.54	0.0000	0.00
30	969.68	969.46	0.0000	0.00
31	1014.00	1013.76	0.0000	0.00
32	1054.56	1054.30	0.0000	0.00
33	1074.64	1074.37	0.0000	0.00
34	1120.14	1119.86	0.0000	0.00
35	1155.45	1155.15	0.0000	0.00
36	1238.33	1238.00	0.0000	0.00
37	1242.34	1242.00	0.0000	0.00
38	1247.90	1247.56	0.0000	0.00
39	1333.20	1332.82	0.0000	0.00
40	1377.95	1377.56	0.0000	0.00
41	1440.51	1440.10	0.0000	0.00
42	1461.71	1461.28	0.0000	0.00

Analysis Report for 1606040-04
CP-5023 00-02

<i>Peak No.</i>	<i>Energy (keV)</i>	<i>Centroid Channel</i>	<i>Centroid Uncertainty</i>	<i>Peak Significance</i>
43	1509.31	1508.87	0.0000	0.00
44	1565.10	1564.64	0.0000	0.00
45	1765.16	1764.63	0.0000	0.00
46	1849.09	1848.53	0.0000	0.00
47	1901.18	1900.60	0.0000	0.00
48	2080.56	2079.93	0.0000	0.00
49	2106.01	2105.37	0.0000	0.00
50	2206.94	2206.27	0.0000	0.00
51	2615.76	2614.98	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

00376A

Analysis Report for 1606040-04
CP-5023 00-02

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 6/15/2016 5:51:10PM

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	63.49	60 -	66	63.71	1.25E+02	91.53	1.43E+03	1.31	
2	76.76	71 -	83	76.97	8.50E+02	160.87	2.62E+03	3.24	
3	93.16	90 -	97	93.37	3.35E+02	99.78	1.35E+03	1.88	
4	130.10	127 -	133	130.28	6.11E+01	67.41	7.84E+02	1.61	
5	186.85	183 -	191	187.00	1.94E+02	75.65	7.62E+02	1.66	
6	209.53	206 -	213	209.68	7.65E+01	58.99	5.31E+02	2.00	
M	7	239.28	234 -	248	239.41	7.29E+02	66.88	3.55E+02	2.07
m	8	242.37	234 -	248	242.50	1.33E+02	71.50	3.49E+02	2.29
9	271.06	268 -	273	271.17	6.74E+01	39.27	2.49E+02	2.45	
10	280.55	275 -	286	280.66	8.03E+01	66.30	5.07E+02	7.90	
11	295.87	292 -	299	295.96	1.67E+02	55.21	3.98E+02	1.36	
12	301.18	299 -	304	301.27	4.16E+01	39.37	2.69E+02	1.40	
13	310.16	305 -	315	310.25	5.18E+01	53.22	3.44E+02	7.60	
14	338.88	335 -	343	338.96	1.31E+02	52.34	3.37E+02	1.69	
15	352.62	347 -	357	352.69	3.18E+02	62.55	3.52E+02	2.10	
16	417.90	416 -	421	417.94	2.29E+01	28.72	1.46E+02	1.52	
17	478.93	474 -	484	478.93	4.08E+01	43.96	2.34E+02	5.86	
18	511.76	507 -	517	511.75	1.48E+02	49.87	2.53E+02	2.35	
19	557.12	555 -	559	557.09	1.65E+01	19.83	7.30E+01	2.49	
20	584.25	580 -	588	584.20	1.94E+02	43.28	1.64E+02	1.65	
M	21	605.86	603 -	620	605.80	1.70E+01	26.35	9.63E+01	2.20
m	22	610.21	603 -	620	610.15	2.02E+02	34.21	7.85E+01	1.89
23	643.65	640 -	647	643.58	2.65E+01	25.22	8.90E+01	5.10	
24	728.91	725 -	734	728.80	5.39E+01	29.93	9.02E+01	1.82	
25	774.11	771 -	778	773.98	3.25E+01	26.61	9.71E+01	2.19	
26	796.92	793 -	802	796.78	4.00E+01	27.44	8.40E+01	4.51	
27	861.41	857 -	865	861.24	3.13E+01	27.23	9.53E+01	2.36	
28	911.93	907 -	918	911.73	1.19E+02	39.90	1.45E+02	2.38	
M	29	965.76	958 -	975	965.54	2.96E+01	25.85	7.04E+01	2.61
m	30	969.68	958 -	975	969.46	6.97E+01	27.28	5.77E+01	2.66
31	1014.00	1008 -	1019	1013.76	2.18E+01	26.68	7.84E+01	2.79	
32	1054.56	1051 -	1058	1054.30	2.30E+01	16.85	3.20E+01	3.23	
33	1074.64	1066 -	1083	1074.37	3.62E+01	40.39	1.36E+02	12.89	
34	1120.14	1115 -	1125	1119.86	5.76E+01	30.50	9.28E+01	2.10	
35	1155.45	1148 -	1160	1155.15	2.90E+01	31.56	1.02E+02	1.17	
M	36	1238.33	1234 -	1257	1238.00	3.63E+01	19.87	4.56E+01	2.32
m	37	1242.34	1234 -	1257	1242.00	1.73E+01	18.41	4.23E+01	2.32
m	38	1247.90	1234 -	1257	1247.56	1.51E+01	18.87	4.54E+01	2.82
39	1333.20	1327 -	1338	1332.82	2.32E+01	20.69	4.16E+01	2.74	
40	1377.95	1373 -	1381	1377.56	2.39E+01	15.53	2.22E+01	4.51	

Analysis Report for 1606040-04

CP-5023 00-02

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
41	1440.51	1437 - 1442		1440.10	9.00E+00	9.80	1.20E+01	1.22
42	1461.71	1454 - 1466		1461.28	4.68E+02	45.79	2.74E+01	2.35
43	1509.31	1505 - 1511		1508.87	1.40E+01	11.53	1.40E+01	1.70
44	1565.10	1561 - 1567		1564.64	7.28E+00	6.95	3.44E+00	2.66
45	1765.16	1760 - 1768		1764.63	2.77E+01	11.84	4.53E+00	3.56
46	1849.09	1845 - 1853		1848.53	7.50E+00	9.41	9.00E+00	1.01
47	1901.18	1896 - 1903		1900.60	6.00E+00	8.49	8.00E+00	1.02
48	2080.56	2075 - 2085		2079.93	1.01E+01	9.07	5.77E+00	6.53
49	2106.01	2101 - 2110		2105.37	1.28E+01	12.45	1.44E+01	1.94
50	2206.94	2199 - 2213		2206.27	2.20E+01	9.38	0.00E+00	9.32
51	2615.76	2610 - 2618		2614.98	6.20E+01	15.75	0.00E+00	3.22

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 : 6/15/2016 5:51:10PM

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	63.49	60 -	66	1.25E+02	91.53	1.43E+03	7.30E+01	
2	76.76	71 -	83	8.50E+02	160.87	2.62E+03	1.23E+02	
3	93.16	90 -	97	3.35E+02	99.78	1.35E+03	7.63E+01	
4	130.10	127 -	133	6.11E+01	67.41	7.84E+02	5.39E+01	
5	186.85	183 -	191	1.94E+02	75.65	7.62E+02	5.78E+01	
6	209.53	206 -	213	7.65E+01	58.99	5.31E+02	4.63E+01	
M	7	239.28	234 -	248	7.29E+02	66.88	3.55E+02	3.10E+01
m	8	242.37	234 -	248	1.33E+02	71.50	3.49E+02	3.07E+01
9	271.06	268 -	273	6.74E+01	39.27	2.49E+02	2.93E+01	
10	280.55	275 -	286	8.03E+01	66.30	5.07E+02	5.25E+01	
11	295.87	292 -	299	1.67E+02	55.21	3.98E+02	4.01E+01	
12	301.18	299 -	304	4.16E+01	39.37	2.69E+02	3.06E+01	
13	310.16	305 -	315	5.18E+01	53.22	3.44E+02	4.21E+01	
14	338.88	335 -	343	1.31E+02	52.34	3.37E+02	3.87E+01	
15	352.62	347 -	357	3.18E+02	62.55	3.52E+02	4.22E+01	
16	417.90	416 -	421	2.29E+01	28.72	1.46E+02	2.23E+01	
17	478.93	474 -	484	4.08E+01	43.96	2.34E+02	3.46E+01	

: 00378

Analysis Report for 1606040-04
 CP-5023 00-02

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
18	511.76	507 -	517	1.48E+02	49.87	2.53E+02	3.58E+01
19	557.12	555 -	559	1.65E+01	19.83	7.30E+01	1.49E+01
20	584.25	580 -	588	1.94E+02	43.28	1.64E+02	2.72E+01
M 21	605.86	603 -	620	1.70E+01	26.35	9.63E+01	1.61E+01
m 22	610.21	603 -	620	2.02E+02	34.21	7.85E+01	1.46E+01
23	643.65	640 -	647	2.65E+01	25.22	8.90E+01	1.89E+01
24	728.91	725 -	734	5.39E+01	29.93	9.02E+01	2.14E+01
25	774.11	771 -	778	3.25E+01	26.61	9.71E+01	1.98E+01
26	796.92	793 -	802	4.00E+01	27.44	8.40E+01	2.00E+01
27	861.41	857 -	865	3.13E+01	27.23	9.53E+01	2.04E+01
28	911.93	907 -	918	1.19E+02	39.90	1.45E+02	2.75E+01
M 29	965.76	958 -	975	2.96E+01	25.85	7.04E+01	1.38E+01
m 30	969.68	958 -	975	6.97E+01	27.28	5.77E+01	1.25E+01
31	1014.00	1008 -	1019	2.18E+01	26.68	7.84E+01	2.05E+01
32	1054.56	1051 -	1058	2.30E+01	16.85	3.20E+01	1.14E+01
33	1074.64	1066 -	1083	3.62E+01	40.39	1.36E+02	3.17E+01
34	1120.14	1115 -	1125	5.76E+01	30.50	9.28E+01	2.17E+01
35	1155.45	1148 -	1160	2.90E+01	31.56	1.02E+02	2.44E+01
M 36	1238.33	1234 -	1257	3.63E+01	19.87	4.56E+01	1.11E+01
m 37	1242.34	1234 -	1257	1.73E+01	18.41	4.23E+01	1.07E+01
m 38	1247.90	1234 -	1257	1.51E+01	18.87	4.54E+01	1.11E+01
39	1333.20	1327 -	1338	2.32E+01	20.69	4.16E+01	1.50E+01
40	1377.95	1373 -	1381	2.39E+01	15.53	2.22E+01	9.92E+00
41	1440.51	1437 -	1442	9.00E+00	9.80	1.20E+01	6.37E+00
42	1461.71	1454 -	1466	4.68E+02	45.79	2.74E+01	1.23E+01
43	1509.31	1505 -	1511	1.40E+01	11.53	1.40E+01	7.21E+00
44	1565.10	1561 -	1567	7.28E+00	6.95	3.44E+00	3.60E+00
45	1765.16	1760 -	1768	2.77E+01	11.84	4.53E+00	4.45E+00
46	1849.09	1845 -	1853	7.50E+00	9.41	9.00E+00	6.29E+00
47	1901.18	1896 -	1903	6.00E+00	8.49	8.00E+00	5.70E+00
48	2080.56	2075 -	2085	1.01E+01	9.07	5.77E+00	5.31E+00
49	2106.01	2101 -	2110	1.28E+01	12.45	1.44E+01	8.37E+00
50	2206.94	2199 -	2213	2.20E+01	9.38	0.00E+00	0.00E+00
51	2615.76	2610 -	2618	6.20E+01	15.75	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 1606040-04

CP-5023 00-02

PEAK WITH NID REPORT

Peak Analysis Performed on : 6/15/2016 5:51:10PM

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	63.49	60 -	66	63.71	1.25E+02	91.53	1.43E+03	TH-234 TH-230
2	76.76	71 -	83	76.97	8.50E+02	160.87	2.62E+03	.....
3	93.16	90 -	97	93.37	3.35E+02	99.78	1.35E+03	GA-67
4	130.10	127 -	133	130.28	6.11E+01	67.41	7.84E+02	.....
5	186.85	183 -	191	187.00	1.94E+02	75.65	7.62E+02	RA-226
6	209.53	206 -	213	209.68	7.65E+01	58.99	5.31E+02	CM-243 GA-67
M m 7	239.28	234 -	248	239.41	7.29E+02	66.88	3.55E+02	PB-212
8	242.37	234 -	248	242.50	1.33E+02	71.50	3.49E+02	.....
9	271.06	268 -	273	271.17	6.74E+01	39.27	2.49E+02	.....
10	280.55	275 -	286	280.66	8.03E+01	66.30	5.07E+02	HO-166M
11	295.87	292 -	299	295.96	1.67E+02	55.21	3.98E+02	PB-214
12	301.18	299 -	304	301.27	4.16E+01	39.37	2.69E+02	GA-67
13	310.16	305 -	315	310.25	5.18E+01	53.22	3.44E+02	.....
14	338.88	335 -	343	338.96	1.31E+02	52.34	3.37E+02	AC-228
15	352.62	347 -	357	352.69	3.18E+02	62.55	3.52E+02	PB-214
16	417.90	416 -	421	417.94	2.29E+01	28.72	1.46E+02	.....
17	478.93	474 -	484	478.93	4.08E+01	43.96	2.34E+02	.....
18	511.76	507 -	517	511.75	1.48E+02	49.87	2.53E+02	.....
19	557.12	555 -	559	557.09	1.65E+01	19.83	7.30E+01	.....
20	584.25	580 -	588	584.20	1.94E+02	43.28	1.64E+02	.....
M m 21	605.86	603 -	620	605.80	1.70E+01	26.35	9.63E+01	.....
22	610.21	603 -	620	610.15	2.02E+02	34.21	7.85E+01	BI-214
23	643.65	640 -	647	643.58	2.65E+01	25.22	8.90E+01	.....
24	728.91	725 -	734	728.80	5.39E+01	29.93	9.02E+01	.....
25	774.11	771 -	778	773.98	3.25E+01	26.61	9.71E+01	.....
26	796.92	793 -	802	796.78	4.00E+01	27.44	8.40E+01	.....
27	861.41	857 -	865	861.24	3.13E+01	27.23	9.53E+01	.....
28	911.93	907 -	918	911.73	1.19E+02	39.90	1.45E+02	LU-172 AC-228
M m 29	965.76	958 -	975	965.54	2.96E+01	25.85	7.04E+01	.....
30	969.68	958 -	975	969.46	6.97E+01	27.28	5.77E+01	AC-228
31	1014.00	1008 -	1019	1013.76	2.18E+01	26.68	7.84E+01	.....
32	1054.56	1051 -	1058	1054.30	2.30E+01	16.85	3.20E+01	.....
33	1074.64	1066 -	1083	1074.37	3.62E+01	40.39	1.36E+02	.....
34	1120.14	1115 -	1125	1119.86	5.76E+01	30.50	9.28E+01	BI-214 SC-46
35	1155.45	1148 -	1160	1155.15	2.90E+01	31.56	1.02E+02	.....
M m 36	1238.33	1234 -	1257	1238.00	3.63E+01	19.87	4.56E+01	CO-56
37	1242.34	1234 -	1257	1242.00	1.73E+01	18.41	4.23E+01	.....

Analysis Report for 1606040-04

CP-5023 00-02

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
m	38	1247.90	1234 -	1257	1247.56	1.51E+01	18.87	4.54E+01	.....
	39	1333.20	1327 -	1338	1332.82	2.32E+01	20.69	4.16E+01	CO-60
	40	1377.95	1373 -	1381	1377.56	2.39E+01	15.53	2.22E+01	.....
	41	1440.51	1437 -	1442	1440.10	9.00E+00	9.80	1.20E+01	.....
	42	1461.71	1454 -	1466	1461.28	4.68E+02	45.79	2.74E+01	K-40
	43	1509.31	1505 -	1511	1508.87	1.40E+01	11.53	1.40E+01	.....
	44	1565.10	1561 -	1567	1564.64	7.28E+00	6.95	3.44E+00	.....
	45	1765.16	1760 -	1768	1764.63	2.77E+01	11.84	4.53E+00	BI-214
	46	1849.09	1845 -	1853	1848.53	7.50E+00	9.41	9.00E+00	.....
	47	1901.18	1896 -	1903	1900.60	6.00E+00	8.49	8.00E+00	.....
	48	2080.56	2075 -	2085	2079.93	1.01E+01	9.07	5.77E+00	.....
	49	2106.01	2101 -	2110	2105.37	1.28E+01	12.45	1.44E+01	.....
	50	2206.94	2199 -	2213	2206.27	2.20E+01	9.38	0.00E+00	.....
	51	2615.76	2610 -	2618	2614.98	6.20E+01	15.75	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 : 6/15/2016 5:51:10PM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	63.49	1.25E+02	91.53	2.16E-02	1.71E-03
	2	76.76	8.50E+02	160.87	2.38E-02	2.15E-03
	3	93.16	3.35E+02	99.78	2.44E-02	2.40E-03
	4	130.10	6.11E+01	67.41	2.24E-02	1.69E-03
	5	186.85	1.94E+02	75.65	1.82E-02	1.42E-03
	6	209.53	7.65E+01	58.99	1.68E-02	1.31E-03
M	7	239.28	7.29E+02	66.88	1.52E-02	1.18E-03
m	8	242.37	1.33E+02	71.50	1.50E-02	1.16E-03
	9	271.06	6.74E+01	39.27	1.38E-02	1.03E-03
	10	280.55	8.03E+01	66.30	1.34E-02	9.95E-04
	11	295.87	1.67E+02	55.21	1.28E-02	9.73E-04
	12	301.18	4.16E+01	39.37	1.26E-02	9.66E-04
	13	310.16	5.18E+01	53.22	1.23E-02	9.53E-04
	14	338.88	1.31E+02	52.34	1.14E-02	9.12E-04
	15	352.62	3.18E+02	62.55	1.10E-02	8.93E-04
	16	417.90	2.29E+01	28.72	9.54E-03	8.11E-04

Analysis Report for 1606040-04
CP-5023 00-02

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	17	478.93	4.08E+01	43.96	8.48E-03	7.50E-04
	18	511.76	1.48E+02	49.87	8.00E-03	7.17E-04
	19	557.12	1.65E+01	19.83	7.43E-03	6.72E-04
	20	584.25	1.94E+02	43.28	7.13E-03	6.45E-04
M	21	605.86	1.70E+01	26.35	6.91E-03	6.24E-04
m	22	610.21	2.02E+02	34.21	6.86E-03	6.19E-04
	23	643.65	2.65E+01	25.22	6.55E-03	5.86E-04
	24	728.91	5.39E+01	29.93	5.88E-03	5.13E-04
	25	774.11	3.25E+01	26.61	5.58E-03	4.76E-04
	26	796.92	4.00E+01	27.44	5.44E-03	4.57E-04
	27	861.41	3.13E+01	27.23	5.09E-03	4.05E-04
	28	911.93	1.19E+02	39.90	4.85E-03	3.72E-04
M	29	965.76	2.96E+01	25.85	4.62E-03	3.62E-04
m	30	969.68	6.97E+01	27.28	4.60E-03	3.61E-04
	31	1014.00	2.18E+01	26.68	4.43E-03	3.53E-04
	32	1054.56	2.30E+01	16.85	4.29E-03	3.46E-04
	33	1074.64	3.62E+01	40.39	4.22E-03	3.42E-04
	34	1120.14	5.76E+01	30.50	4.08E-03	3.33E-04
	35	1155.45	2.90E+01	31.56	3.97E-03	3.27E-04
M	36	1238.33	3.63E+01	19.87	3.75E-03	3.09E-04
m	37	1242.34	1.73E+01	18.41	3.75E-03	3.08E-04
m	38	1247.90	1.51E+01	18.87	3.73E-03	3.07E-04
	39	1333.20	2.32E+01	20.69	3.54E-03	2.88E-04
	40	1377.95	2.39E+01	15.53	3.45E-03	2.82E-04
	41	1440.51	9.00E+00	9.80	3.33E-03	2.72E-04
	42	1461.71	4.68E+02	45.79	3.29E-03	2.69E-04
	43	1509.31	1.40E+01	11.53	3.21E-03	2.62E-04
	44	1565.10	7.28E+00	6.95	3.12E-03	2.54E-04
	45	1765.16	2.77E+01	11.84	2.86E-03	2.24E-04
	46	1849.09	7.50E+00	9.41	2.76E-03	2.13E-04
	47	1901.18	6.00E+00	8.49	2.71E-03	2.13E-04
	48	2080.56	1.01E+01	9.07	2.55E-03	2.13E-04
	49	2106.01	1.28E+01	12.45	2.53E-03	2.13E-04
	50	2206.94	2.20E+01	9.38	2.46E-03	2.13E-04
	51	2615.76	6.20E+01	15.75	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 : 6/15/2016 5:51:10PM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000038678.CNF

: 00382

Analysis Report for 1606040-04

CP-5023 00-02

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.	
1	63.49	1.25E+02	91.53	4.47E+01	1.66E+01	8.02E+01	9.30E+01	
2	76.76	8.50E+02	160.87	6.70E+00	3.28E+00	8.43E+02	1.61E+02	
3	93.16	3.35E+02	99.78	8.20E+01	2.30E+01	2.53E+02	1.02E+02	
4	130.10	6.11E+01	67.41			6.11E+01	6.74E+01	
5	186.85	1.94E+02	75.65	3.45E+01	5.92E+00	1.60E+02	7.59E+01	
6	209.53	7.65E+01	58.99			7.65E+01	5.90E+01	
M	7	239.28	7.29E+02	66.88	1.33E+01	5.09E+00	7.15E+02	6.71E+01
m	8	242.37	1.33E+02	71.50			1.33E+02	7.15E+01
	9	271.06	6.74E+01	39.27			6.74E+01	3.93E+01
	10	280.55	8.03E+01	66.30			8.03E+01	6.63E+01
	11	295.87	1.67E+02	55.21	1.94E+00	4.39E+00	1.65E+02	5.54E+01
	12	301.18	4.16E+01	39.37			4.16E+01	3.94E+01
	13	310.16	5.18E+01	53.22			5.18E+01	5.32E+01
	14	338.88	1.31E+02	52.34			1.31E+02	5.23E+01
	15	352.62	3.18E+02	62.55	4.00E+00	3.58E+00	3.14E+02	6.26E+01
	16	417.90	2.29E+01	28.72			2.29E+01	2.87E+01
	17	478.93	4.08E+01	43.96			4.08E+01	4.40E+01
	18	511.76	1.48E+02	49.87	6.05E+01	4.93E+00	8.70E+01	5.01E+01
	19	557.12	1.65E+01	19.83			1.65E+01	1.98E+01
	20	584.25	1.94E+02	43.28	5.50E+00	3.61E+00	1.89E+02	4.34E+01
M	21	605.86	1.70E+01	26.35			1.70E+01	2.64E+01
m	22	610.21	2.02E+02	34.21	5.07E+00	3.83E+00	1.97E+02	3.44E+01
	23	643.65	2.65E+01	25.22			2.65E+01	2.52E+01
	24	728.91	5.39E+01	29.93			5.39E+01	2.99E+01
	25	774.11	3.25E+01	26.61			3.25E+01	2.66E+01
	26	796.92	4.00E+01	27.44			4.00E+01	2.74E+01
	27	861.41	3.13E+01	27.23			3.13E+01	2.72E+01
	28	911.93	1.19E+02	39.90			1.19E+02	3.99E+01
M	29	965.76	2.96E+01	25.85			2.96E+01	2.58E+01
m	30	969.68	6.97E+01	27.28			6.97E+01	2.73E+01
	31	1014.00	2.18E+01	26.68			2.18E+01	2.67E+01
	32	1054.56	2.30E+01	16.85			2.30E+01	1.69E+01
	33	1074.64	3.62E+01	40.39			3.62E+01	4.04E+01
	34	1120.14	5.76E+01	30.50	1.09E+00	2.08E+00	5.65E+01	3.06E+01
	35	1155.45	2.90E+01	31.56			2.90E+01	3.16E+01
M	36	1238.33	3.63E+01	19.87			3.63E+01	1.99E+01
m	37	1242.34	1.73E+01	18.41			1.73E+01	1.84E+01
m	38	1247.90	1.51E+01	18.87			1.51E+01	1.89E+01
	39	1333.20	2.32E+01	20.69	3.99E+00	2.37E+00	1.92E+01	2.08E+01
	40	1377.95	2.39E+01	15.53			2.39E+01	1.55E+01
	41	1440.51	9.00E+00	9.80			9.00E+00	9.80E+00
	42	1461.71	4.68E+02	45.79	4.33E+00	2.02E+00	4.64E+02	4.58E+01
	43	1509.31	1.40E+01	11.53			1.40E+01	1.15E+01
	44	1565.10	7.28E+00	6.95			7.28E+00	6.95E+00
	45	1765.16	2.77E+01	11.84			2.77E+01	1.18E+01
	46	1849.09	7.50E+00	9.41			7.50E+00	9.41E+00
	47	1901.18	6.00E+00	8.49			6.00E+00	8.49E+00
	48	2080.56	1.01E+01	9.07			1.01E+01	9.07E+00
	49	2106.01	1.28E+01	12.45			1.28E+01	1.24E+01
	50	2206.94	2.20E+01	9.38			2.20E+01	9.38E+00
	51	2615.76	6.20E+01	15.75	2.52E+00	1.44E+00	5.95E+01	1.58E+01

Analysis Report for 1606040-04

CP-5023 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 : 6/15/2016 5:51:10PM
 Ref. Peak Energy : 0.00 Reference Date :
 Peak Ratio : 0.00 Uncertainty : 0.00
 Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000038678.CNF

Corrected Area is: Original * Peak Ratio - Background

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.	
1	63.49	1.25E+02	91.53	4.47E+01	1.66E+01	8.02E+01	9.30E+01	
2	76.76	8.50E+02	160.87	6.70E+00	3.28E+00	8.43E+02	1.61E+02	
3	93.16	3.35E+02	99.78	8.20E+01	2.30E+01	2.53E+02	1.02E+02	
4	130.10	6.11E+01	67.41			6.11E+01	6.74E+01	
5	186.85	1.94E+02	75.65	3.45E+01	5.92E+00	1.60E+02	7.59E+01	
6	209.53	7.65E+01	58.99			7.65E+01	5.90E+01	
M	7	239.28	7.29E+02	66.88	1.33E+01	5.09E+00	7.15E+02	6.71E+01
m	8	242.37	1.33E+02	71.50			1.33E+02	7.15E+01
9	271.06	6.74E+01	39.27			6.74E+01	3.93E+01	
10	280.55	8.03E+01	66.30			8.03E+01	6.63E+01	
11	295.87	1.67E+02	55.21	1.94E+00	4.39E+00	1.65E+02	5.54E+01	
12	301.18	4.16E+01	39.37			4.16E+01	3.94E+01	
13	310.16	5.18E+01	53.22			5.18E+01	5.32E+01	
14	338.88	1.31E+02	52.34			1.31E+02	5.23E+01	
15	352.62	3.18E+02	62.55	4.00E+00	3.58E+00	3.14E+02	6.26E+01	
16	417.90	2.29E+01	28.72			2.29E+01	2.87E+01	
17	478.93	4.08E+01	43.96			4.08E+01	4.40E+01	
18	511.76	1.48E+02	49.87	6.05E+01	4.93E+00	8.70E+01	5.01E+01	
19	557.12	1.65E+01	19.83			1.65E+01	1.98E+01	
20	584.25	1.94E+02	43.28	5.50E+00	3.61E+00	1.89E+02	4.34E+01	
M	21	605.86	1.70E+01	26.35		1.70E+01	2.64E+01	
m	22	610.21	2.02E+02	34.21	5.07E+00	3.83E+00	1.97E+02	3.44E+01
23	643.65	2.65E+01	25.22			2.65E+01	2.52E+01	
24	728.91	5.39E+01	29.93			5.39E+01	2.99E+01	
25	774.11	3.25E+01	26.61			3.25E+01	2.66E+01	
26	796.92	4.00E+01	27.44			4.00E+01	2.74E+01	
27	861.41	3.13E+01	27.23			3.13E+01	2.72E+01	
28	911.93	1.19E+02	39.90			1.19E+02	3.99E+01	
M	29	965.76	2.96E+01	25.85		2.96E+01	2.58E+01	
m	30	969.68	6.97E+01	27.28		6.97E+01	2.73E+01	
31	1014.00	2.18E+01	26.68			2.18E+01	2.67E+01	
32	1054.56	2.30E+01	16.85			2.30E+01	1.69E+01	

Analysis Report for 1606040-04

CP-5023 00-02

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	33	1074.64	3.62E+01	40.39			3.62E+01	4.04E+01
	34	1120.14	5.76E+01	30.50	1.09E+00	2.08E+00	5.65E+01	3.06E+01
	35	1155.45	2.90E+01	31.56			2.90E+01	3.16E+01
M	36	1238.33	3.63E+01	19.87			3.63E+01	1.99E+01
m	37	1242.34	1.73E+01	18.41			1.73E+01	1.84E+01
m	38	1247.90	1.51E+01	18.87			1.51E+01	1.89E+01
	39	1333.20	2.32E+01	20.69	3.99E+00	2.37E+00	1.92E+01	2.08E+01
	40	1377.95	2.39E+01	15.53			2.39E+01	1.55E+01
	41	1440.51	9.00E+00	9.80			9.00E+00	9.80E+00
	42	1461.71	4.68E+02	45.79	4.33E+00	2.02E+00	4.64E+02	4.58E+01
	43	1509.31	1.40E+01	11.53			1.40E+01	1.15E+01
	44	1565.10	7.28E+00	6.95			7.28E+00	6.95E+00
	45	1765.16	2.77E+01	11.84			2.77E+01	1.18E+01
	46	1849.09	7.50E+00	9.41			7.50E+00	9.41E+00
	47	1901.18	6.00E+00	8.49			6.00E+00	8.49E+00
	48	2080.56	1.01E+01	9.07			1.01E+01	9.07E+00
	49	2106.01	1.28E+01	12.45			1.28E+01	1.24E+01
	50	2206.94	2.20E+01	9.38			2.20E+01	9.38E+00
	51	2615.76	6.20E+01	15.75	2.52E+00	1.44E+00	5.95E+01	1.58E+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	0.879	1460.81 *	10.67	2.38E+01	3.09E+00
GA-67	0.879	93.31 *	35.70	8.57E+00	1.79E+01
		208.95 *	2.24	6.01E+01	1.13E+02
		300.22 *	16.00	6.11E+00	1.38E+01
		238.63 *	44.60	1.90E+00	2.31E-01
PB-212	0.834	300.09	3.41		
		609.31 *	46.30	1.12E+00	2.19E-01
BI-214	0.849	1120.29 *	15.10	1.65E+00	9.03E-01
		1764.49 *	15.80	1.10E+00	4.80E-01
		2204.22	4.98		
PB-214	0.928	295.21 *	19.19	1.21E+00	4.16E-01
		351.92 *	37.19	1.38E+00	2.96E-01

: 00385

Analysis Report for 1606040-04
CP-5023 00-02

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
RA-226	0.937	186.21 *	3.28	4.80E+00	9.07E+00
AC-228	0.919	338.32 *	11.40	1.81E+00	7.37E-01
		911.07 *	27.70	1.59E+00	5.48E-01
		969.11 *	16.60	1.64E+00	6.55E-01
TH-234	0.993	63.29 *	3.80	1.75E+00	2.04E+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 : 6/15/2016 5:51:10PM
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	76.76	2.34256E-01	9.54		
4	130.10	1.69711E-02	55.17		
m 8	242.37	3.70103E-02	26.83		
9	271.06	1.87297E-02	29.12		
10	280.55	2.23104E-02	41.28	Sum	
13	310.16	1.43936E-02	51.35		
16	417.90	6.34838E-03	62.84		
17	478.93	1.13265E-02	53.91	Sum	
18	511.76	2.41685E-02	28.80		
19	557.12	4.57809E-03	60.16		
20	584.25	5.24252E-02	11.51		
M 21	605.86	4.72508E-03	77.46		
23	643.65	7.36698E-03	47.55		
24	728.91	1.49691E-02	27.77		
25	774.11	9.01577E-03	40.99		
26	796.92	1.11043E-02	34.32	Sum	
27	861.41	8.70605E-03	43.43		
M 29	965.76	8.21319E-03	43.71		
31	1014.00	6.05419E-03	61.21		
32	1054.56	6.38889E-03	36.64		
33	1074.64	1.00521E-02	55.80		
35	1155.45	8.04167E-03	54.51		
M 36	1238.33	1.00825E-02	27.38		
m 37	1242.34	4.79589E-03	53.32		

Analysis Report for 1606040-04
 CP-5023 00-02

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
m 38	1247.90	4.19561E-03	62.46	Totl.	CO-60
39	1333.20	5.33716E-03	54.19		
40	1377.95	6.63889E-03	32.49		
41	1440.51	2.50000E-03	54.43		
43	1509.31	3.88889E-03	41.19		
44	1565.10	2.02160E-03	47.72		
46	1849.09	2.08333E-03	62.72		
47	1901.18	1.66667E-03	70.71		
48	2080.56	2.80983E-03	44.83		
49	2106.01	3.56250E-03	48.54		
50	2206.94	6.11111E-03	21.32		
51	2615.76	1.65220E-02	13.29		

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	0.87	1460.81 *	10.67	2.38E+01	3.09E+00
GA-67	0.87	93.31 *	35.70	8.57E+00	1.79E+01
		208.95 *	2.24	6.01E+01	1.13E+02
		300.22 *	16.00	6.11E+00	1.38E+01
PB-212	0.83	238.63 *	44.60	1.90E+00	2.31E-01
		300.09	3.41		
BI-214	0.84	609.31 *	46.30	1.12E+00	2.19E-01
		1120.29 *	15.10	1.65E+00	9.03E-01
		1764.49 *	15.80	1.10E+00	4.80E-01
PB-214	0.92	2204.22	4.98		
		295.21 *	19.19	1.21E+00	4.16E-01
		351.92 *	37.19	1.38E+00	2.96E-01
RA-226	0.93	186.21 *	3.28	4.80E+00	9.07E+00
AC-228	0.91	338.32 *	11.40	1.81E+00	7.37E-01
		911.07 *	27.70	1.59E+00	5.48E-01
		969.11 *	16.60	1.64E+00	6.55E-01

Analysis Report for 1606040-04
CP-5023 00-02

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
TH-234	0.99	63.29 *	3.80	1.75E+00	2.04E+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	0.879	2.38E+01	3.09E+00	
GA-67	0.879	8.27E+00	1.57E+01	
PB-212	0.834	1.90E+00	2.31E-01	
BI-214	0.849	1.14E+00	1.95E-01	
PB-214	0.928	1.32E+00	2.41E-01	
RA-226	0.937	4.80E+00	9.07E+00	
AC-228	0.919	1.66E+00	3.65E-01	
TH-234	0.993	1.75E+00	2.04E+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 1606040-04
CP-5023 00-02

UNIDENTIFIED PEAKS

Peak Locate Performed on : 6/15/2016 5:51:10PM
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	76.76	2.34256E-01		
	4	130.10	1.69711E-02		
m	8	242.37	3.70103E-02		
	9	271.06	1.87297E-02		
	10	280.55	2.23104E-02	Sum	
	13	310.16	1.43936E-02		
	16	417.90	6.34838E-03		
	17	478.93	1.13265E-02	Sum	
	18	511.76	2.41685E-02		
	19	557.12	4.57809E-03		
	20	584.25	5.24252E-02		
M	21	605.86	4.72508E-03		
	23	643.65	7.36698E-03		
	24	728.91	1.49691E-02		
	25	774.11	9.01577E-03		
	26	796.92	1.11043E-02	Sum	
	27	861.41	8.70605E-03		
M	29	965.76	8.21319E-03		
	31	1014.00	6.05419E-03		
	32	1054.56	6.38889E-03		
	33	1074.64	1.00521E-02		
	35	1155.45	8.04167E-03		
M	36	1238.33	1.00825E-02		
m	37	1242.34	4.79589E-03		
m	38	1247.90	4.19561E-03		
	39	1333.20	5.33716E-03	ToI.	CO-60
	40	1377.95	6.63889E-03		
	41	1440.51	2.50000E-03		
	43	1509.31	3.88889E-03		
	44	1565.10	2.02160E-03		
	46	1849.09	2.08333E-03		
	47	1901.18	1.66667E-03		
	48	2080.56	2.80983E-03		
	49	2106.01	3.56250E-03		
	50	2206.94	6.11111E-03		

Analysis Report for 1606040-04
 CP-5023 00-02

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
51	2615.76	1.65220E-02	13.29		

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	3.30E-01	1.23E+00	1.23E+00
+	NA-22	1274.54	99.94	-4.20E-03	1.46E-01	1.46E-01
+	NA-24	1368.53	99.99	-3.83E+04	1.70E+05	2.88E+05
		2754.09	99.86	-1.83E+04		1.70E+05
+	AL-26	1808.65	99.76	5.78E-02	1.21E-01	1.21E-01
+	K-40	1460.81	* 10.67	2.38E+01	1.46E+00	1.46E+00
+	@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88	94.40	1.69E-02	9.29E-02	9.29E-02
		78.34	96.00	2.52E-01		1.17E-01
+	SC-46	889.25	99.98	5.75E-02	1.37E-01	1.37E-01
		1120.51	99.99	2.40E-01		2.23E-01
+	V-48	983.52	99.98	-5.02E-02	2.15E-01	2.15E-01
		1312.10	97.50	-3.12E-02		2.61E-01
+	CR-51	320.08	9.83	4.27E-01	1.23E+00	1.23E+00
+	MN-54	834.83	99.97	-3.97E-02	1.23E-01	1.23E-01
+	CO-56	846.75	99.96	-5.73E-02	1.13E-01	1.13E-01
		1037.75	14.03	-7.10E-02		9.05E-01
		1238.25	67.00	2.11E-01		3.16E-01
		1771.40	15.51	-3.35E-01		7.25E-01
		2598.48	16.90	3.55E-02		5.72E-01
+	CO-57	122.06	85.51	9.50E-03	7.59E-02	7.59E-02
		136.48	10.60	1.57E-01		6.58E-01
+	CO-58	810.76	99.40	-1.01E-02	1.23E-01	1.23E-01
+	FE-59	1099.22	56.50	2.85E-02	2.92E-01	2.92E-01
		1291.56	43.20	1.45E-02		4.20E-01
+	CO-60	1173.22	100.00	4.85E-02	1.58E-01	1.65E-01
		1332.49	100.00	8.48E-02		1.58E-01
+	ZN-65	1115.52	50.75	-6.29E-02	2.50E-01	2.50E-01

Analysis Report for 1606040-04
CP-5023 00-02

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	GA-67	93.31	*	35.70	8.57E+00	5.52E+00	5.52E+00
		208.95	*	2.24	6.01E+01		7.50E+01
		300.22	*	16.00	6.11E+00		9.37E+00
+	SE-75	121.11		16.70	9.07E-02	1.23E-01	4.03E-01
		136.00		59.20	-5.64E-03		1.23E-01
		264.65		59.80	9.91E-03		1.50E-01
		279.53		25.20	1.51E-01		4.04E-01
		400.65		11.40	8.76E-02		8.97E-01
+	RB-82	776.52		13.00	9.29E-01	1.52E+00	1.52E+00
+	RB-83	520.41		46.00	2.94E-03	2.32E-01	2.32E-01
		529.64		30.30	-8.19E-02		3.81E-01
		552.65		16.40	9.17E-02		6.96E-01
+	KR-85	513.99		0.43	6.45E+01	3.68E+01	3.68E+01
+	SR-85	513.99		99.27	3.24E-01	1.85E-01	1.85E-01
+	Y-88	898.02		93.40	6.27E-02	1.24E-01	1.42E-01
		1836.01		99.38	1.75E-02		1.24E-01
+	NB-93M	16.57		9.43	-2.00E+01	1.12E+02	1.12E+02
+	NB-94	702.63		100.00	-3.06E-04	1.06E-01	1.17E-01
		871.10		100.00	1.74E-02		1.06E-01
+	NB-95	765.79		99.81	7.39E-02	1.61E-01	1.61E-01
+	NB-95M	235.69		25.00	1.06E-01	6.80E+00	6.80E+00
+	ZR-95	724.18		43.70	-2.59E-02	2.59E-01	3.01E-01
		756.72		55.30	7.51E-02		2.59E-01
+	MO-99	181.06		6.20	1.11E+00	2.63E+01	3.09E+01
		739.58		12.80	3.35E+00		2.63E+01
		778.00		4.50	-1.21E+01		7.27E+01
+	RU-103	497.08		89.00	-2.21E-02	1.34E-01	1.34E-01
+	RU-106	621.84		9.80	-1.67E-01	1.05E+00	1.05E+00
+	AG-108M	433.93		89.90	2.84E-03	1.02E-01	1.02E-01
		614.37		90.40	-2.90E-01		1.46E-01
		722.95		90.50	-1.75E-02		1.22E-01
+	CD-109	88.03		3.72	-1.54E-01	2.49E+00	2.49E+00
+	AG-110M	657.75		93.14	-3.88E-02	1.24E-01	1.24E-01
		677.61		10.53	1.42E-01		1.12E+00
		706.67		16.46	-5.13E-01		6.68E-01
		763.93		21.98	-4.83E-01		5.04E-01
		884.67		71.63	-2.05E-02		1.64E-01
		1384.27		23.94	-4.94E-02		5.68E-01
+	CD-113M	263.70		0.02	-6.30E+00	3.67E+02	3.67E+02
+	SN-113	255.12		1.93	-5.59E-01	1.57E-01	4.89E+00
		391.69		64.90	5.71E-03		1.57E-01
+	TE123M	159.00		84.10	-2.05E-02	9.00E-02	9.00E-02
+	SB-124	602.71		97.87	1.74E-02	1.27E-01	1.27E-01
		645.85		7.26	-9.77E-02		1.76E+00
		722.78		11.10	-1.66E-01		1.15E+00
		1691.02		49.00	-6.76E-02		1.74E-01
+	I-125	35.49		6.49	2.12E-01	3.21E+00	3.21E+00
+	SB-125	176.33		6.89	-1.67E-01	3.02E-01	1.00E+00

Analysis Report for 1606040-04
CP-5023 00-02

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	SB-125	427.89	29.33	-1.18E-01	3.02E-01	3.02E-01
		463.38	10.35	6.46E-01		1.03E+00
		600.56	17.80	1.10E-01		5.72E-01
		635.90	11.32	3.09E-01		9.67E-01
+	SB-126	414.70	83.30	-1.04E-01	2.35E-01	2.49E-01
		666.33	99.60	8.25E-02		2.49E-01
		695.00	99.60	2.62E-02		2.35E-01
		720.50	53.80	-2.35E-02		4.41E-01
+	SN-126	87.57	37.00	-1.51E-02	2.45E-01	2.45E-01
+	SB-127	473.00	25.00	1.78E-01	3.29E+00	4.17E+00
		685.20	35.70	-1.15E+00		3.29E+00
		783.80	14.70	5.40E-01		8.68E+00
+	I-129	29.78	57.00	-1.75E-01	5.33E-01	5.33E-01
		33.60	13.20	-6.39E-01		1.53E+00
		39.58	7.52	-3.74E-01		1.88E+00
+	I-131	284.30	6.05	-6.45E-01	3.38E-01	4.60E+00
		364.48	81.20	9.36E-03		3.38E-01
		636.97	7.26	2.74E+00		4.52E+00
		722.89	1.80	-2.74E+00		1.90E+01
+	TE-132	49.72	13.10	-1.22E+01	1.56E+00	1.27E+01
		228.16	88.00	-4.85E-01		1.56E+00
+	BA-133	81.00	33.00	-9.79E-01	2.31E-01	2.45E-01
		302.84	17.80	7.91E-02		5.40E-01
		356.01	60.00	3.38E-02		2.31E-01
+	I-133	529.87	86.30	-9.75E+02	4.54E+03	4.54E+03
+	XE-133	81.00	38.00	-4.84E+00	1.21E+00	1.21E+00
+	CS-134	563.23	8.38	-4.40E-01	1.10E-01	1.14E+00
		569.32	15.43	3.90E-02		6.60E-01
		604.70	97.60	-6.90E-01		1.10E-01
		795.84	85.40	9.40E-02		1.62E-01
		801.93	8.73	-3.79E-01		1.18E+00
+	CS-135	268.24	16.00	1.75E-01	5.79E-01	5.79E-01
+	I-135	1131.51	22.50	9.92E+13	1.18E+14	1.72E+14
		1260.41	28.60	3.41E+13		1.18E+14
		1678.03	9.54	-5.91E+13		2.09E+14
+	CS-136	153.22	7.46	-7.15E-02	2.02E-01	1.88E+00
		163.89	4.61	6.88E-01		2.99E+00
		176.55	13.56	4.02E-02		1.02E+00
		273.65	12.66	-7.69E-01		1.42E+00
		340.57	48.50	7.77E-01		5.00E-01
		818.50	99.70	-3.13E-02		2.02E-01
		1048.07	79.60	-5.22E-02		2.72E-01
		1235.34	19.70	-6.37E-02		1.63E+00
+	CS-137	661.65	85.12	7.89E-02	1.45E-01	1.45E-01
+	LA-138	788.74	34.00	1.94E-01	1.83E-01	3.67E-01
		1435.80	66.00	3.47E-02		1.83E-01
+	CE-139	165.85	80.35	-2.88E-02	8.87E-02	8.87E-02
+	BA-140	162.64	6.70	1.34E-01	8.73E-01	2.11E+00
		304.84	4.50	-4.04E+00		4.00E+00

Analysis Report for 1606040-04
 CP-5023 00-02

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	BA-140	423.70	3.20	3.12E+00	8.73E-01	5.96E+00
		437.55	2.00	4.09E-01		9.48E+00
		537.32	25.00	1.02E-01		8.73E-01
+	LA-140	328.77	20.50	1.37E-01	3.36E-01	9.63E-01
		487.03	45.50	1.78E-02		4.23E-01
		815.85	23.50	-6.78E-01		8.00E-01
		1596.49	95.49	2.30E-01		3.36E-01
+	CE-141	145.44	48.40	-7.39E-02	1.78E-01	1.78E-01
+	CE-143	57.36	11.80	-3.68E+02	2.12E+02	5.86E+02
		293.26	42.00	-1.53E+01		2.12E+02
		664.55	5.20	5.09E+02		1.81E+03
+	CE-144	133.54	10.80	-1.83E-02	6.44E-01	6.44E-01
+	PM-144	476.78	42.00	2.50E-02	1.12E-01	2.62E-01
		618.01	98.60	4.90E-02		1.12E-01
		696.49	99.49	-1.02E-02		1.17E-01
+	PM-145	36.85	21.70	-2.15E-01	4.07E-01	7.48E-01
		37.36	39.70	1.70E-01		4.07E-01
		42.30	15.10	-6.45E-02		8.00E-01
		72.40	2.31	-8.24E+00		4.17E+00
+	PM-146	453.90	39.94	4.54E-02	2.43E-01	2.43E-01
		735.90	14.01	1.95E-02		7.65E-01
		747.13	13.10	-1.83E-02		9.06E-01
+	ND-147	91.11	28.90	-5.79E-01	7.26E-01	7.26E-01
		531.02	13.10	-7.61E-01		1.78E+00
+	PM-149	285.90	3.10	3.56E+00	1.78E+02	1.78E+02
+	EU-152	121.78	20.50	3.83E-02	3.06E-01	3.06E-01
		244.69	5.40	-4.96E+00		1.84E+00
		344.27	19.13	-3.79E-02		4.57E-01
		778.89	9.20	-6.08E-03		1.31E+00
		964.01	10.40	-1.06E+00		1.52E+00
		1085.78	7.22	2.71E-01		1.80E+00
		1112.02	9.60	2.74E-01		1.35E+00
		1407.95	14.94	1.54E-01		8.18E-01
+	GD-153	97.43	31.30	6.16E-02	2.19E-01	2.19E-01
		103.18	22.20	-2.06E-01		3.00E-01
+	EU-154	123.07	40.50	3.78E-02	1.57E-01	1.57E-01
		723.30	19.70	-8.06E-02		5.61E-01
		873.19	11.50	-7.17E-01		8.24E-01
		996.32	10.30	1.19E-01		1.24E+00
		1004.76	17.90	1.97E-01		7.33E-01
		1274.45	35.50	-1.17E-02		4.08E-01
+	EU-155	86.50	30.90	1.73E-01	2.98E-01	2.98E-01
		105.30	20.70	1.61E-01		3.30E-01
+	EU-156	811.77	10.40	1.00E-01	1.87E+00	1.87E+00
		1153.47	7.20	2.73E+00		4.22E+00
		1230.71	8.90	1.00E+00		3.10E+00
+	HO-166M	184.41	72.60	1.49E-01	1.23E-01	1.23E-01
		280.45	29.60	1.67E-01		3.19E-01
		410.94	11.10	1.76E-01		8.94E-01

Analysis Report for 1606040-04
CP-5023 00-02

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	HO-166M	711.69	54.10	7.56E-02	1.23E-01	2.24E-01
+	TM-171	66.72	0.14	2.20E+00	6.51E+01	6.51E+01
+	HF-172	81.75	4.52	-8.97E+00	5.57E-01	1.68E+00
		125.81	11.30	3.56E-02		5.57E-01
+	LU-172	181.53	20.60	4.52E-02	8.06E-01	1.31E+00
		810.06	16.63	-2.06E-02		2.59E+00
		912.12	15.25	1.25E+01		5.89E+00
		1093.66	62.50	-2.29E-01		8.06E-01
+	LU-173	100.72	5.24	-2.81E-01	4.44E-01	1.25E+00
		272.11	21.20	2.35E-01		4.44E-01
+	HF-175	343.40	84.00	-9.80E-03	1.30E-01	1.30E-01
+	LU-176	88.34	13.30	1.13E-01	9.37E-02	7.05E-01
		201.83	86.00	1.77E-02		9.95E-02
		306.78	94.00	1.27E-02		9.37E-02
+	TA-182	67.75	41.20	4.19E-02	2.31E-01	2.31E-01
		1121.30	34.90	4.10E-01		6.14E-01
		1189.05	16.23	2.72E-01		9.58E-01
		1221.41	26.98	2.19E-01		5.82E-01
		1231.02	11.44	3.15E-01		1.40E+00
+	IR-192	308.46	29.68	1.97E-02	2.37E-01	3.35E-01
		468.07	48.10	-4.95E-02		2.37E-01
+	HG-203	279.19	77.30	6.31E-02	1.46E-01	1.46E-01
+	BI-207	569.67	97.72	2.82E-03	1.04E-01	1.04E-01
		1063.62	74.90	6.79E-02		1.54E-01
+	TL-208	583.14	30.22	1.46E+00	6.43E-01	6.43E-01
		860.37	4.48	1.89E+00		3.23E+00
		2614.66	35.85	1.33E+00		8.81E-01
+	BI-210M	262.00	45.00	-7.05E-03	1.87E-01	1.87E-01
		300.00	23.00	-3.73E-01		4.69E-01
+	PB-210	46.50	4.25	2.14E+00	2.75E+00	2.75E+00
+	PB-211	404.84	2.90	-1.19E+00	3.33E+00	3.33E+00
		831.96	2.90	-8.35E-01		4.13E+00
+	BI-212	727.17	11.80	9.59E-01	1.19E+00	1.19E+00
		1620.62	2.75	1.74E+00		4.19E+00
+	PB-212	238.63	* 44.60	1.90E+00	3.76E-01	3.76E-01
		300.09	3.41	-2.52E+00		3.16E+00
+	BI-214	609.31	* 46.30	1.12E+00	4.62E-01	4.62E-01
		1120.29	* 15.10	1.65E+00		1.36E+00
		1764.49	* 15.80	1.10E+00		4.63E-01
		2204.22	4.98	1.69E+00		3.12E+00
+	PB-214	295.21	* 19.19	1.21E+00	3.84E-01	6.11E-01
		351.92	* 37.19	1.38E+00		3.84E-01
+	RN-219	401.80	6.50	-4.12E-01	1.45E+00	1.45E+00
+	RA-223	323.87	3.88	-1.48E+00	2.33E+00	2.33E+00
+	RA-224	240.98	3.95	2.32E+01	4.48E+00	4.48E+00
+	RA-225	40.00	31.00	-1.64E-01	8.23E-01	8.23E-01
+	RA-226	186.21	* 3.28	4.80E+00	3.62E+00	3.62E+00
+	TH-227	50.10	8.40	-1.14E+00	1.18E+00	1.19E+00

Analysis Report for 1606040-04
CP-5023 00-02

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	TH-227	236.00	11.50	1.84E-02	1.18E+00	1.18E+00
		256.20	6.30	2.34E-01		1.40E+00
+	AC-228	338.32	* 11.40	1.81E+00	7.72E-01	1.11E+00
		911.07	* 27.70	1.59E+00		7.72E-01
		969.11	* 16.60	1.64E+00		1.52E+00
+	TH-230	48.44	16.90	4.76E-01	6.61E-01	6.61E-01
		62.85	4.60	2.95E+00		2.20E+00
		67.67	0.37	4.32E+00		2.37E+01
+	PA-231	283.67	1.60	-7.81E-01	4.17E+00	5.58E+00
		302.67	2.30	6.10E-01		4.17E+00
+	TH-231	25.64	14.70	-8.40E-01	1.26E+00	4.03E+00
		84.21	6.40	-4.74E-01		1.26E+00
+	PA-233	311.98	38.60	-6.29E-02	3.06E-01	3.06E-01
+	PA-234	131.20	20.40	2.65E-01	3.56E-01	3.56E-01
		733.99	8.80	4.25E-02		1.15E+00
		946.00	12.00	-1.90E-01		1.01E+00
+	PA-234M	1001.03	0.92	1.18E+01	1.60E+01	1.60E+01
+	TH-234	63.29	* 3.80	1.75E+00	3.34E+00	3.34E+00
+	U-235	143.76	10.50	9.16E-03	6.34E-01	6.34E-01
		163.35	4.70	3.37E-01		1.46E+00
		205.31	4.70	6.71E-02		1.79E+00
+	NP-237	86.50	12.60	4.22E-01	7.26E-01	7.26E-01
+	NP-239	106.10	22.70	2.99E+00	1.46E+01	1.46E+01
		228.18	10.70	-1.17E+01		3.77E+01
		277.60	14.10	1.51E+01		3.11E+01
+	AM-241	59.54	35.90	-3.99E-02	2.58E-01	2.58E-01
+	AM-243	74.67	66.00	-7.48E-02	1.72E-01	1.72E-01
+	CM-243	209.75	3.29	2.05E+00	6.48E-01	2.75E+00
		228.14	10.60	-2.44E-01		7.88E-01
		277.60	14.00	3.15E-01		6.48E-01

+ = Nuclide identified during the nuclide identification

* = Energy line found in the spectrum

> = MDA value not calculated

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

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

Analysis Report for 1606040-04

CP-5023 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	1.23E+00	1.23E+00	3.30E-01	5.82E-01
NA-22	1274.54	99.94	1.46E-01	1.46E-01	-4.20E-03	6.62E-02
NA-24	1368.53	99.99	2.88E+05	1.70E+05	-3.83E+04	1.28E+05
	2754.09	99.86	1.70E+05		-1.83E+04	6.01E+04
AL-26	1808.65	99.76	1.21E-01	1.21E-01	5.78E-02	5.17E-02
+ K-40	1460.81	* 10.67	1.46E+00	1.46E+00	2.38E+01	6.60E-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	9.29E-02	9.29E-02	1.69E-02	4.53E-02
	78.34	96.00	1.17E-01		2.52E-01	5.76E-02
SC-46	889.25	99.98	1.37E-01	1.37E-01	5.75E-02	6.32E-02
	1120.51	99.99	2.23E-01		2.40E-01	1.05E-01
V-48	983.52	99.98	2.15E-01	2.15E-01	-5.02E-02	9.78E-02
	1312.10	97.50	2.61E-01		-3.12E-02	1.18E-01
CR-51	320.08	9.83	1.23E+00	1.23E+00	4.27E-01	5.84E-01
MN-54	834.83	99.97	1.23E-01	1.23E-01	-3.97E-02	5.65E-02
CO-56	846.75	99.96	1.13E-01	1.13E-01	-5.73E-02	5.15E-02
	1037.75	14.03	9.05E-01		-7.10E-02	4.08E-01
	1238.25	67.00	3.16E-01		2.11E-01	1.47E-01
	1771.40	15.51	7.25E-01		-3.35E-01	3.01E-01
	2598.48	16.90	5.72E-01		3.55E-02	2.14E-01
CO-57	122.06	85.51	7.59E-02	7.59E-02	9.50E-03	3.67E-02
	136.48	10.60	6.58E-01		1.57E-01	3.18E-01
CO-58	810.76	99.40	1.23E-01	1.23E-01	-1.01E-02	5.65E-02
FE-59	1099.22	56.50	2.92E-01	2.92E-01	2.85E-02	1.33E-01
	1291.56	43.20	4.20E-01		1.45E-02	1.91E-01
CO-60	1173.22	100.00	1.65E-01	1.58E-01	4.85E-02	7.65E-02
	1332.49	100.00	1.58E-01		8.48E-02	7.22E-02
ZN-65	1115.52	50.75	2.50E-01	2.50E-01	-6.29E-02	1.13E-01
+ GA-67	93.31	* 35.70	5.52E+00	5.52E+00	8.57E+00	2.72E+00
	208.95	* 2.24	7.50E+01		6.01E+01	3.64E+01
	300.22	* 16.00	9.37E+00		6.11E+00	4.48E+00
SE-75	121.11	16.70	4.03E-01	1.23E-01	9.07E-02	1.95E-01
	136.00	59.20	1.23E-01		-5.64E-03	5.93E-02
	264.65	59.80	1.50E-01		9.91E-03	7.20E-02
	279.53	25.20	4.04E-01		1.51E-01	1.94E-01
	400.65	11.40	8.97E-01		8.76E-02	4.25E-01
RB-82	776.52	13.00	1.52E+00	1.52E+00	9.29E-01	7.11E-01
RB-83	520.41	46.00	2.32E-01	2.32E-01	2.94E-03	1.09E-01
	529.64	30.30	3.81E-01		-8.19E-02	1.79E-01
	552.65	16.40	6.96E-01		9.17E-02	3.26E-01
KR-85	513.99	0.43	3.68E+01	3.68E+01	6.45E+01	1.77E+01
SR-85	513.99	99.27	1.85E-01	1.85E-01	3.24E-01	8.88E-02
Y-88	898.02	93.40	1.42E-01	1.24E-01	6.27E-02	6.51E-02
	1836.01	99.38	1.24E-01		1.75E-02	5.22E-02
NB-93M	16.57	9.43	1.12E+02	1.12E+02	-2.00E+01	5.46E+01

Analysis Report for 1606040-04
CP-5023 00-02

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
NB-94	702.63	100.00	1.17E-01	1.06E-01	-3.06E-04	5.47E-02
	871.10	100.00	1.06E-01		1.74E-02	4.84E-02
NB-95	765.79	99.81	1.61E-01	1.61E-01	7.39E-02	7.48E-02
NB-95M	235.69	25.00	6.80E+00	6.80E+00	1.06E-01	3.32E+00
ZR-95	724.18	43.70	3.01E-01	2.59E-01	-2.59E-02	1.40E-01
	756.72	55.30	2.59E-01		7.51E-02	1.21E-01
MO-99	181.06	6.20	3.09E+01	2.63E+01	1.11E+00	1.49E+01
	739.58	12.80	2.63E+01		3.35E+00	1.23E+01
	778.00	4.50	7.27E+01		-1.21E+01	3.37E+01
RU-103	497.08	89.00	1.34E-01	1.34E-01	-2.21E-02	6.25E-02
RU-106	621.84	9.80	1.05E+00	1.05E+00	-1.67E-01	4.89E-01
AG-108M	433.93	89.90	1.02E-01	1.02E-01	2.84E-03	4.81E-02
	614.37	90.40	1.46E-01		-2.90E-01	6.88E-02
	722.95	90.50	1.22E-01		-1.75E-02	5.63E-02
CD-109	88.03	3.72	2.49E+00	2.49E+00	-1.54E-01	1.22E+00
AG-110M	657.75	93.14	1.24E-01	1.24E-01	-3.88E-02	5.80E-02
	677.61	10.53	1.12E+00		1.42E-01	5.22E-01
	706.67	16.46	6.68E-01		-5.13E-01	3.09E-01
	763.93	21.98	5.04E-01		-4.83E-01	2.32E-01
	884.67	71.63	1.64E-01		-2.05E-02	7.50E-02
	1384.27	23.94	5.68E-01		-4.94E-02	2.53E-01
CD-113M	263.70	0.02	3.67E+02	3.67E+02	-6.30E+00	1.76E+02
SN-113	255.12	1.93	4.89E+00	1.57E-01	-5.59E-01	2.35E+00
	391.69	64.90	1.57E-01		5.71E-03	7.45E-02
TE123M	159.00	84.10	9.00E-02	9.00E-02	-2.05E-02	4.35E-02
SB-124	602.71	97.87	1.27E-01	1.27E-01	1.74E-02	5.96E-02
	645.85	7.26	1.76E+00		-9.77E-02	8.21E-01
	722.78	11.10	1.15E+00		-1.66E-01	5.34E-01
	1691.02	49.00	1.74E-01		-6.76E-02	6.74E-02
	35.49	6.49	3.21E+00	3.21E+00	2.12E-01	1.55E+00
SB-125	176.33	6.89	1.00E+00	3.02E-01	-1.67E-01	4.82E-01
	427.89	29.33	3.02E-01		-1.18E-01	1.42E-01
	463.38	10.35	1.03E+00		6.46E-01	4.86E-01
	600.56	17.80	5.72E-01		1.10E-01	2.66E-01
	635.90	11.32	9.67E-01		3.09E-01	4.51E-01
SB-126	414.70	83.30	2.49E-01	2.35E-01	-1.04E-01	1.18E-01
	666.33	99.60	2.49E-01		8.25E-02	1.16E-01
	695.00	99.60	2.35E-01		2.62E-02	1.09E-01
	720.50	53.80	4.41E-01		-2.35E-02	2.05E-01
SN-126	87.57	37.00	2.45E-01	2.45E-01	-1.51E-02	1.20E-01
SB-127	473.00	25.00	4.17E+00	3.29E+00	1.78E-01	1.96E+00
	685.20	35.70	3.29E+00		-1.15E+00	1.53E+00
	783.80	14.70	8.68E+00		5.40E-01	4.02E+00
I-129	29.78	57.00	5.33E-01	5.33E-01	-1.75E-01	2.57E-01
	33.60	13.20	1.53E+00		-6.39E-01	7.41E-01
	39.58	7.52	1.88E+00		-3.74E-01	9.08E-01
I-131	284.30	6.05	4.60E+00	3.38E-01	-6.45E-01	2.21E+00
	364.48	81.20	3.38E-01		9.36E-03	1.60E-01
	636.97	7.26	4.52E+00		2.74E+00	2.10E+00
	722.89	1.80	1.90E+01		-2.74E+00	8.81E+00
TE-132	49.72	13.10	1.27E+01	1.56E+00	-1.22E+01	6.18E+00
	228.16	88.00	1.56E+00		-4.85E-01	7.53E-01
BA-133	81.00	33.00	2.45E-01	2.31E-01	-9.79E-01	1.20E-01

Analysis Report for 1606040-04
CP-5023 00-02

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
BA-133	302.84	17.80	5.40E-01	2.31E-01	7.91E-02	2.59E-01
	356.01	60.00	2.31E-01		3.38E-02	1.12E-01
I-133	529.87	86.30	4.54E+03	4.54E+03	-9.75E+02	2.13E+03
XE-133	81.00	38.00	1.21E+00	1.21E+00	-4.84E+00	5.91E-01
CS-134	563.23	8.38	1.14E+00	1.10E-01	-4.40E-01	5.32E-01
	569.32	15.43	6.60E-01		3.90E-02	3.08E-01
	604.70	97.60	1.10E-01		-6.90E-01	5.13E-02
	795.84	85.40	1.62E-01		9.40E-02	7.56E-02
	801.93	8.73	1.18E+00		-3.79E-01	5.37E-01
CS-135	268.24	16.00	5.79E-01	5.79E-01	1.75E-01	2.78E-01
I-135	1131.51	22.50	1.72E+14	1.18E+14	9.92E+13	7.92E+13
	1260.41	28.60	1.18E+14		3.41E+13	5.35E+13
	1678.03	9.54	2.09E+14		-5.91E+13	8.31E+13
CS-136	153.22	7.46	1.88E+00	2.02E-01	-7.15E-02	9.07E-01
	163.89	4.61	2.99E+00		6.88E-01	1.44E+00
	176.55	13.56	1.02E+00		4.02E-02	4.91E-01
	273.65	12.66	1.42E+00		-7.69E-01	6.84E-01
	340.57	48.50	5.00E-01		7.77E-01	2.41E-01
	818.50	99.70	2.02E-01		-3.13E-02	9.21E-02
	1048.07	79.60	2.72E-01		-5.22E-02	1.22E-01
	1235.34	19.70	1.63E+00		-6.37E-02	7.49E-01
CS-137	661.65	85.12	1.45E-01	1.45E-01	7.89E-02	6.79E-02
LA-138	788.74	34.00	3.67E-01	1.83E-01	1.94E-01	1.71E-01
	1435.80	66.00	1.83E-01		3.47E-02	8.06E-02
CE-139	165.85	80.35	8.87E-02	8.87E-02	-2.88E-02	4.27E-02
BA-140	162.64	6.70	2.11E+00	8.73E-01	1.34E-01	1.02E+00
	304.84	4.50	4.00E+00		-4.04E+00	1.91E+00
	423.70	3.20	5.96E+00		3.12E+00	2.82E+00
	437.55	2.00	9.48E+00		4.09E-01	4.47E+00
	537.32	25.00	8.73E-01		1.02E-01	4.11E-01
	LA-140	328.77	20.50	9.63E-01	3.36E-01	1.37E-01	4.61E-01
CE-141	487.03	45.50	4.23E-01		1.78E-02	1.98E-01
	815.85	23.50	8.00E-01		-6.78E-01	3.61E-01
	1596.49	95.49	3.36E-01		2.30E-01	1.51E-01
CE-143	145.44	48.40	1.78E-01	1.78E-01	-7.39E-02	8.61E-02
CE-143	57.36	11.80	5.86E+02	2.12E+02	-3.68E+02	2.85E+02
	293.26	42.00	2.12E+02		-1.53E+01	1.03E+02
	664.55	5.20	1.81E+03		5.09E+02	8.49E+02
CE-144	133.54	10.80	6.44E-01	6.44E-01	-1.83E-02	3.12E-01
PM-144	476.78	42.00	2.62E-01	1.12E-01	2.50E-02	1.24E-01
	618.01	98.60	1.12E-01		4.90E-02	5.21E-02
	696.49	99.49	1.17E-01		-1.02E-02	5.46E-02
PM-145	36.85	21.70	7.48E-01	4.07E-01	-2.15E-01	3.62E-01
	37.36	39.70	4.07E-01		1.70E-01	1.97E-01
	42.30	15.10	8.00E-01		-6.45E-02	3.87E-01
	72.40	2.31	4.17E+00		-8.24E+00	2.04E+00
PM-146	453.90	39.94	2.43E-01	2.43E-01	4.54E-02	1.15E-01
	735.90	14.01	7.65E-01		1.95E-02	3.53E-01
	747.13	13.10	9.06E-01		-1.83E-02	4.21E-01
ND-147	91.11	28.90	7.26E-01	7.26E-01	-5.79E-01	3.55E-01
	531.02	13.10	1.78E+00		-7.61E-01	8.36E-01
PM-149	285.90	3.10	1.78E+02	1.78E+02	3.56E+00	8.54E+01
EU-152	121.78	20.50	3.06E-01	3.06E-01	3.83E-02	1.48E-01

Analysis Report for 1606040-04

CP-5023 00-02

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
EU-152	244.69	5.40	1.84E+00	3.06E-01	-4.96E+00	8.88E-01
	344.27	19.13	4.57E-01		-3.79E-02	2.17E-01
	778.89	9.20	1.31E+00		-6.08E-03	6.09E-01
	964.01	10.40	1.52E+00		-1.06E+00	7.08E-01
	1085.78	7.22	1.80E+00		2.71E-01	8.21E-01
	1112.02	9.60	1.35E+00		2.74E-01	6.11E-01
	1407.95	14.94	8.18E-01		1.54E-01	3.61E-01
GD-153	97.43	31.30	2.19E-01	2.19E-01	6.16E-02	1.06E-01
	103.18	22.20	3.00E-01		-2.06E-01	1.45E-01
EU-154	123.07	40.50	1.57E-01	1.57E-01	3.78E-02	7.57E-02
	723.30	19.70	5.61E-01		-8.06E-02	2.59E-01
	873.19	11.50	8.24E-01		-7.17E-01	3.70E-01
	996.32	10.30	1.24E+00		1.19E-01	5.65E-01
	1004.76	17.90	7.33E-01		1.97E-01	3.36E-01
EU-155	1274.45	35.50	4.08E-01		-1.17E-02	1.85E-01
	86.50	30.90	2.98E-01	2.98E-01	1.73E-01	1.46E-01
EU-156	105.30	20.70	3.30E-01		1.61E-01	1.60E-01
	811.77	10.40	1.87E+00	1.87E+00	1.00E-01	8.55E-01
HO-166M	1153.47	7.20	4.22E+00		2.73E+00	1.96E+00
	1230.71	8.90	3.10E+00		1.00E+00	1.42E+00
	184.41	72.60	1.23E-01	1.23E-01	1.49E-01	5.96E-02
	280.45	29.60	3.19E-01		1.67E-01	1.53E-01
TM-171	410.94	11.10	8.94E-01		1.76E-01	4.25E-01
	711.69	54.10	2.24E-01		7.56E-02	1.05E-01
	66.72	0.14	6.51E+01	6.51E+01	2.20E+00	3.17E+01
HF-172	81.75	4.52	1.68E+00	5.57E-01	-8.97E+00	8.19E-01
	125.81	11.30	5.57E-01		3.56E-02	2.69E-01
LU-172	181.53	20.60	1.31E+00	8.06E-01	4.52E-02	6.29E-01
	810.06	16.63	2.59E+00		-2.06E-02	1.19E+00
	912.12	15.25	5.89E+00		1.25E+01	2.81E+00
LU-173	1093.66	62.50	8.06E-01		-2.29E-01	3.67E-01
	100.72	5.24	1.25E+00	4.44E-01	-2.81E-01	6.03E-01
HF-175	272.11	21.20	4.44E-01		2.35E-01	2.13E-01
	343.40	84.00	1.30E-01	1.30E-01	-9.80E-03	6.21E-02
LU-176	88.34	13.30	7.05E-01	9.37E-02	1.13E-01	3.45E-01
	201.83	86.00	9.95E-02		1.77E-02	4.81E-02
	306.78	94.00	9.37E-02		1.27E-02	4.48E-02
TA-182	67.75	41.20	2.31E-01	2.31E-01	4.19E-02	1.12E-01
	1121.30	34.90	6.14E-01		4.10E-01	2.89E-01
	1189.05	16.23	9.58E-01		2.72E-01	4.37E-01
	1221.41	26.98	5.82E-01		2.19E-01	2.65E-01
	1231.02	11.44	1.40E+00		3.15E-01	6.38E-01
IR-192	308.46	29.68	3.35E-01	2.37E-01	1.97E-02	1.60E-01
	468.07	48.10	2.37E-01		-4.95E-02	1.12E-01
HG-203	279.19	77.30	1.46E-01	1.46E-01	6.31E-02	7.02E-02
BI-207	569.67	97.72	1.04E-01	1.04E-01	2.82E-03	4.85E-02
	1063.62	74.90	1.54E-01		6.79E-02	6.95E-02
TL-208	583.14	30.22	6.43E-01	6.43E-01	1.46E+00	3.10E-01
	860.37	4.48	3.23E+00		1.89E+00	1.51E+00
	2614.66	35.85	8.81E-01		1.33E+00	4.10E-01
BI-210M	262.00	45.00	1.87E-01	1.87E-01	-7.05E-03	8.97E-02
	300.00	23.00	4.69E-01		-3.73E-01	2.26E-01
PB-210	46.50	4.25	2.75E+00	2.75E+00	2.14E+00	1.34E+00

Analysis Report for 1606040-04
CP-5023 00-02

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
PB-211	404.84	2.90	3.33E+00	3.33E+00	-1.19E+00	1.58E+00
	831.96	2.90	4.13E+00		-8.35E-01	1.91E+00
BI-212	727.17	11.80	1.19E+00	1.19E+00	9.59E-01	5.58E-01
	1620.62	2.75	4.19E+00		1.74E+00	1.80E+00
+ PB-212	238.63 *	44.60	3.76E-01	3.76E-01	1.90E+00	1.85E-01
	300.09	3.41	3.16E+00		-2.52E+00	1.52E+00
+ BI-214	609.31 *	46.30	4.62E-01	4.62E-01	1.12E+00	2.23E-01
	1120.29 *	15.10	1.36E+00		1.65E+00	6.39E-01
	1764.49 *	15.80	4.63E-01		1.10E+00	1.77E-01
	2204.22	4.98	3.12E+00		1.69E+00	1.36E+00
+ PB-214	295.21 *	19.19	6.11E-01	3.84E-01	1.21E+00	2.95E-01
	351.92 *	37.19	3.84E-01		1.38E+00	1.86E-01
RN-219	401.80	6.50	1.45E+00	1.45E+00	-4.12E-01	6.87E-01
RA-223	323.87	3.88	2.33E+00	2.33E+00	-1.48E+00	1.11E+00
RA-224	240.98	3.95	4.48E+00	4.48E+00	2.32E+01	2.20E+00
RA-225	40.00	31.00	8.23E-01	8.23E-01	-1.64E-01	3.99E-01
+ RA-226	186.21 *	3.28	3.62E+00	3.62E+00	4.80E+00	1.77E+00
TH-227	50.10	8.40	1.19E+00	1.18E+00	-1.14E+00	5.79E-01
	236.00	11.50	1.18E+00		1.84E-02	5.75E-01
	256.20	6.30	1.40E+00		2.34E-01	6.73E-01
+ AC-228	338.32 *	11.40	1.11E+00	7.72E-01	1.81E+00	5.34E-01
	911.07 *	27.70	7.72E-01		1.59E+00	3.68E-01
	969.11 *	16.60	1.52E+00		1.64E+00	7.27E-01
TH-230	48.44	16.90	6.61E-01	6.61E-01	4.76E-01	3.22E-01
	62.85	4.60	2.20E+00		2.95E+00	1.08E+00
	67.67	0.37	2.37E+01		4.32E+00	1.16E+01
PA-231	283.67	1.60	5.58E+00	4.17E+00	-7.81E-01	2.68E+00
	302.67	2.30	4.17E+00		6.10E-01	2.00E+00
TH-231	25.64	14.70	4.03E+00	1.26E+00	-8.40E-01	1.95E+00
	84.21	6.40	1.26E+00		-4.74E-01	6.13E-01
PA-233	311.98	38.60	3.06E-01	3.06E-01	-6.29E-02	1.46E-01
PA-234	131.20	20.40	3.56E-01	3.56E-01	2.65E-01	1.72E-01
	733.99	8.80	1.15E+00		4.25E-02	5.27E-01
	946.00	12.00	1.01E+00		-1.90E-01	4.63E-01
PA-234M	1001.03	0.92	1.60E+01	1.60E+01	1.18E+01	7.39E+00
+ TH-234	63.29 *	3.80	3.34E+00	3.34E+00	1.75E+00	1.64E+00
U-235	143.76	10.50	6.34E-01	6.34E-01	9.16E-03	3.06E-01
	163.35	4.70	1.46E+00		3.37E-01	7.04E-01
	205.31	4.70	1.79E+00		6.71E-02	8.62E-01
NP-237	86.50	12.60	7.26E-01	7.26E-01	4.22E-01	3.55E-01
NP-239	106.10	22.70	1.46E+01	1.46E+01	2.99E+00	7.06E+00
	228.18	10.70	3.77E+01		-1.17E+01	1.81E+01
	277.60	14.10	3.11E+01		1.51E+01	1.49E+01
AM-241	59.54	35.90	2.58E-01	2.58E-01	-3.99E-02	1.26E-01
AM-243	74.67	66.00	1.72E-01	1.72E-01	-7.48E-02	8.43E-02
CM-243	209.75	3.29	2.75E+00	6.48E-01	2.05E+00	1.33E+00
	228.14	10.60	7.88E-01		-2.44E-01	3.79E-01
	277.60	14.00	6.48E-01		3.15E-01	3.11E-01

Analysis Report for 1606040-04
CP-5023 00-02

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

No Action Level results available for reporting purposes.

DATA REVIEW COMMENTS REPORT

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

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

Sample Title: CP-5023 00-02

Elapsed Live time: 3600

Elapsed Real Time: 3622

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1:	0	0	0	0	0	0	0	0
9:	0	124	141	112	113	115	82	100
17:	116	66	75	77	67	67	70	77
25:	59	53	59	53	60	58	47	54
33:	60	55	51	52	70	66	56	70
41:	59	67	65	58	61	59	130	100
49:	65	75	64	79	73	92	93	71
57:	83	78	99	102	119	93	114	190
65:	131	93	115	115	96	114	112	117
73:	103	108	250	300	225	428	175	90
81:	86	88	78	104	145	104	98	213
89:	120	136	151	94	179	210	102	80
97:	57	57	70	83	56	59	56	68
105:	83	77	75	60	74	78	57	64
113:	55	82	58	56	51	48	52	50
121:	50	59	66	54	53	60	47	52
129:	68	92	71	67	56	60	64	52
137:	68	49	60	56	49	56	67	58
145:	47	42	58	51	57	53	47	53
153:	55	52	72	60	55	55	53	55
161:	50	46	57	52	49	44	50	34
169:	55	45	42	47	46	40	46	48
177:	48	40	45	49	43	39	44	42
185:	44	89	143	74	48	43	48	38
193:	45	35	38	50	52	32	46	37
201:	48	46	44	42	29	34	42	36
209:	42	67	61	33	27	42	33	50
217:	41	30	35	35	32	30	38	40
225:	31	30	29	36	31	37	35	29
233:	38	30	35	38	38	75	336	303
241:	74	90	72	33	24	30	23	20
249:	25	34	28	33	38	30	25	39
257:	22	22	37	25	30	31	19	18
265:	26	32	28	25	21	40	46	48
273:	12	21	24	19	29	42	29	28
281:	26	32	26	28	32	19	21	23
289:	31	23	25	21	33	26	46	126
297:	57	35	22	31	51	31	20	21
305:	16	21	26	23	30	19	15	20
313:	19	28	7	20	19	23	17	16
321:	23	16	26	16	24	20	25	34
329:	36	17	20	16	27	22	20	17
337:	27	48	88	46	17	20	17	17
345:	21	15	18	21	16	19	25	126
353:	155	61	19	21	13	18	21	11
361:	13	14	18	20	13	11	23	16

369: 17 22 8 15 12 13 17 24

Sample Title: CP-5023 00-02

Channel	-----	-----	-----	-----	-----	-----	-----	-----
377:	14	16	16	18	10	14	15	21
385:	11	18	12	20	20	14	15	21
393:	18	17	11	16	17	15	17	9
401:	18	18	15	21	13	16	23	9
409:	17	29	20	15	12	17	16	9
417:	27	21	13	18	8	16	15	15
425:	18	16	11	8	11	13	8	14
433:	15	13	8	21	12	10	17	13
441:	11	15	9	13	11	11	19	9
449:	14	17	14	14	10	16	6	19
457:	15	9	10	11	15	13	14	22
465:	17	16	13	11	16	11	13	17
473:	10	13	10	14	23	15	19	13
481:	14	17	13	7	13	10	14	17
489:	8	9	9	16	8	9	8	13
497:	8	12	14	11	6	17	14	14
505:	12	15	8	14	16	23	62	60
513:	32	21	17	9	12	11	10	10
521:	8	11	10	8	11	11	13	13
529:	14	6	15	14	7	9	20	10
537:	12	9	16	9	18	6	7	16
545:	9	20	13	11	10	12	10	13
553:	13	7	7	12	15	14	5	10
561:	8	9	10	11	4	8	6	17
569:	9	11	8	8	9	12	12	9
577:	12	11	15	11	11	18	47	105
585:	47	17	10	10	2	6	8	8
593:	7	8	8	6	10	9	8	13
601:	7	9	5	10	10	15	9	9
609:	36	117	54	9	6	6	9	8
617:	11	13	13	5	7	6	9	5
625:	12	6	12	7	7	13	13	8
633:	6	7	16	13	6	9	7	2
641:	8	11	11	13	9	12	5	8
649:	6	7	9	9	8	10	10	9
657:	5	11	8	8	13	13	12	11
665:	13	10	5	11	9	6	4	11
673:	2	13	8	7	8	8	7	14
681:	11	11	7	11	9	6	5	8
689:	11	6	6	7	10	10	5	8
697:	6	12	9	9	13	9	9	4
705:	9	10	11	5	3	8	13	12
713:	9	11	10	10	4	12	10	9
721:	5	7	9	8	6	8	13	27
729:	16	8	4	8	6	3	3	6
737:	12	9	8	10	10	7	12	12
745:	7	12	8	4	5	9	6	9
753:	8	13	11	8	7	12	4	7
761:	8	5	8	7	4	6	6	9
769:	20	8	3	10	18	17	7	8
777:	11	7	6	5	9	9	8	4
785:	5	10	8	10	7	7	11	5
793:	4	8	11	15	11	10	10	4

801: 6 3 5 4 4 11 7 6

Sample Title: CP-5023 00-02

Channel	-----	-----	-----	-----	-----	-----	-----	-----
809:	5	6	6	8	4	5	5	3
817:	6	3	2	5	10	8	5	2
825:	11	4	8	9	9	10	3	11
833:	6	4	5	10	5	6	10	9
841:	11	7	7	6	10	4	2	4
849:	2	4	7	6	9	8	9	5
857:	4	6	8	7	17	15	11	6
865:	5	7	5	5	9	4	4	2
873:	5	5	3	3	8	6	4	11
881:	1	9	5	2	5	9	7	6
889:	3	9	4	7	2	8	10	6
897:	5	6	8	5	3	3	4	13
905:	7	6	1	7	7	15	43	55
913:	29	5	8	5	4	12	4	6
921:	2	2	6	1	2	4	9	4
929:	3	1	5	6	6	8	7	4
937:	3	8	2	9	3	6	4	3
945:	5	11	7	5	4	9	7	4
953:	5	9	4	3	7	4	4	5
961:	7	5	5	11	17	17	4	10
969:	34	24	12	4	4	7	3	2
977:	6	5	5	6	5	3	7	5
985:	7	3	8	6	3	6	3	5
993:	6	6	6	1	7	9	4	5
1001:	7	16	6	6	4	3	3	3
1009:	6	3	6	2	5	11	7	8
1017:	3	5	2	5	1	6	6	6
1025:	9	4	3	3	3	4	6	4
1033:	6	5	5	1	7	5	5	1
1041:	4	5	2	6	2	7	4	4
1049:	4	0	4	5	3	8	6	7
1057:	4	2	2	8	3	4	4	4
1065:	3	2	3	5	8	9	5	5
1073:	4	4	7	10	4	11	6	5
1081:	9	6	1	9	2	3	6	7
1089:	7	10	2	7	3	1	5	6
1097:	7	4	9	2	5	4	7	5
1105:	1	7	3	8	5	10	8	3
1113:	4	3	0	8	8	3	7	19
1121:	27	13	7	6	6	8	3	9
1129:	12	2	9	8	4	3	2	4
1137:	7	8	6	8	7	4	6	5
1145:	6	4	5	5	5	4	6	6
1153:	8	7	6	17	5	2	6	3
1161:	3	3	3	3	4	4	11	6
1169:	5	6	7	7	10	6	9	6
1177:	7	5	6	6	6	4	6	3
1185:	3	2	6	5	6	4	8	6
1193:	5	5	6	3	3	4	5	8
1201:	4	4	6	3	6	6	9	4
1209:	4	7	9	1	3	6	5	2
1217:	5	3	6	5	4	10	3	5
1225:	1	6	4	8	9	4	6	3

1233: 5 2 7 5 4 18 10 12

Sample Title: CP-5023 00-02

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1241:	6	10	3	4	3	8	7	9
1249:	2	5	2	5	4	7	5	3
1257:	3	2	7	3	7	4	3	4
1265:	2	7	8	3	4	1	3	5
1273:	6	4	2	3	5	4	6	2
1281:	7	2	4	0	2	3	5	5
1289:	2	5	3	4	3	2	5	1
1297:	8	3	6	4	2	4	4	4
1305:	3	5	2	6	3	6	4	2
1313:	4	2	1	3	2	6	4	3
1321:	4	1	2	3	0	2	2	2
1329:	1	3	6	9	7	4	3	2
1337:	3	2	1	2	3	2	5	0
1345:	2	2	3	3	1	3	4	5
1353:	1	3	1	3	3	0	2	3
1361:	3	5	2	3	2	4	1	2
1369:	3	5	2	1	2	3	1	6
1377:	8	4	5	6	0	2	1	3
1385:	3	2	3	3	5	0	2	4
1393:	2	2	3	3	5	0	3	3
1401:	2	2	0	3	2	3	3	3
1409:	1	1	1	2	4	0	1	1
1417:	2	0	2	2	4	2	0	1
1425:	3	2	2	3	0	2	0	2
1433:	5	3	1	1	1	2	3	3
1441:	6	0	2	3	0	1	0	1
1449:	1	2	2	1	3	0	2	2
1457:	4	2	16	73	181	154	44	1
1465:	3	0	1	2	0	3	1	0
1473:	3	1	1	3	2	3	1	3
1481:	3	0	0	0	1	4	0	2
1489:	3	2	0	3	0	0	0	4
1497:	3	1	2	2	2	3	2	0
1505:	2	2	2	0	6	8	1	1
1513:	3	2	1	3	1	0	0	1
1521:	0	2	1	1	0	0	0	1
1529:	1	1	1	3	1	0	2	0
1537:	0	1	2	0	0	0	1	3
1545:	1	1	1	1	4	0	3	1
1553:	1	0	3	0	1	1	0	0
1561:	1	0	0	3	3	2	0	0
1569:	1	0	2	0	1	1	2	2
1577:	2	2	0	1	3	1	4	1
1585:	1	1	2	6	5	2	2	5
1593:	3	7	5	1	1	3	1	1
1601:	0	1	0	2	3	2	3	1
1609:	0	0	0	2	2	0	0	2
1617:	0	2	2	2	0	2	1	2
1625:	0	2	0	2	2	5	3	2
1633:	0	4	1	1	0	2	0	1
1641:	0	2	0	1	1	1	1	1
1649:	1	2	0	2	1	0	1	1
1657:	0	1	1	0	2	2	3	1

1665: 0 1 0 1 0 0 0 0

Sample Title: CP-5023 00-02

Channel	1	2	3	4	5	6	7	8	9
1673:	3	1	0	0	1	1	0	1	
1681:	0	1	1	0	1	1	0	0	
1689:	0	2	0	0	1	0	1	1	
1697:	3	0	2	0	0	2	2	0	
1705:	0	0	1	2	1	0	0	2	
1713:	0	2	0	0	2	0	1	1	
1721:	1	2	0	0	1	2	0	0	
1729:	4	2	5	2	0	3	0	1	
1737:	1	0	1	1	0	3	2	0	
1745:	1	0	0	0	1	0	1	0	
1753:	1	0	2	2	0	1	0	1	
1761:	0	0	5	9	6	8	1	0	
1769:	0	0	1	0	3	3	0	1	
1777:	1	0	1	0	1	0	3	2	
1785:	0	2	1	3	2	0	0	0	
1793:	0	1	0	0	0	0	0	1	
1801:	1	0	0	0	1	1	1	3	
1809:	1	2	1	2	1	0	0	0	
1817:	0	1	0	0	0	1	1	1	
1825:	1	2	2	1	0	2	2	1	
1833:	0	1	1	0	0	2	3	2	
1841:	0	0	3	0	1	1	0	5	
1849:	1	2	1	1	0	1	0	0	
1857:	0	0	3	1	0	1	0	2	
1865:	2	1	0	3	1	0	1	0	
1873:	0	0	0	1	0	0	0	1	
1881:	2	0	0	0	1	1	0	2	
1889:	1	0	0	1	2	2	1	0	
1897:	1	0	2	2	1	4	0	1	
1905:	0	0	2	0	0	1	2	0	
1913:	0	2	1	0	1	1	0	0	
1921:	0	1	0	1	0	1	1	2	
1929:	0	0	2	1	2	2	1	3	
1937:	0	2	1	0	1	2	2	0	
1945:	0	0	2	0	1	2	1	1	
1953:	1	2	3	0	1	0	1	0	
1961:	1	0	1	1	1	0	1	0	
1969:	0	0	0	0	0	2	1	1	
1977:	1	2	0	0	0	0	1	0	
1985:	1	0	1	2	0	3	0	2	
1993:	0	0	1	1	0	1	0	1	
2001:	0	2	1	0	0	0	1	1	
2009:	0	2	0	0	3	0	3	0	
2017:	0	1	0	1	0	1	1	1	
2025:	0	0	1	1	0	2	0	2	
2033:	1	0	0	0	1	1	1	1	
2041:	2	0	2	1	0	1	1	0	
2049:	0	0	1	0	1	1	1	0	
2057:	0	0	0	0	0	0	0	1	
2065:	0	0	0	0	0	0	0	0	
2073:	1	0	0	1	0	3	1	3	
2081:	1	1	1	2	0	1	0	1	
2089:	0	0	1	0	0	0	0	1	

2097: 2 2 2 1 1 0 4 5

Sample Title: CP-5023 00-02

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

2529: 0 0 0 0 0 0 0 0

Sample Title: CP-5023 00-02

Channel	1	2	3	4	5	6	7	8	9
2537:	1	1	0	0	0	0	1	0	
2545:	0	0	1	0	0	1	2	0	
2553:	0	0	0	0	0	0	1	0	
2561:	0	0	0	0	0	0	1	1	
2569:	1	0	0	1	1	2	0	0	
2577:	0	0	0	1	0	0	0	0	
2585:	0	0	2	1	1	0	0	0	
2593:	0	1	1	0	0	0	1	0	
2601:	0	0	0	1	0	0	0	0	
2609:	0	0	0	0	5	17	19	16	
2617:	5	0	0	1	1	0	1	0	
2625:	1	0	0	0	0	1	0	0	
2633:	0	0	0	0	0	0	0	0	
2641:	2	0	0	1	0	0	0	0	
2649:	0	1	0	1	1	0	0	2	
2657:	1	0	0	0	0	0	1	0	
2665:	0	0	1	0	0	0	0	0	
2673:	0	0	1	0	0	0	0	0	
2681:	0	0	0	0	0	0	0	0	
2689:	0	1	1	0	0	0	0	0	
2697:	0	0	0	0	0	0	1	0	
2705:	0	1	0	0	0	0	0	0	
2713:	1	0	0	1	0	0	0	0	
2721:	0	0	0	1	0	0	0	0	
2729:	0	0	0	0	1	0	1	0	
2737:	0	0	0	0	0	0	0	0	
2745:	0	0	1	0	0	2	0	0	
2753:	0	0	0	0	0	0	1	0	
2761:	0	1	1	0	0	0	0	0	
2769:	1	0	0	0	0	0	0	0	
2777:	0	0	2	0	0	0	0	1	
2785:	0	0	1	1	0	0	0	1	
2793:	1	1	0	0	0	0	0	1	
2801:	0	0	0	0	0	0	0	0	
2809:	0	0	0	0	1	0	0	0	
2817:	0	0	0	0	0	1	0	0	
2825:	1	0	0	0	0	0	0	0	
2833:	0	0	0	1	0	0	0	0	
2841:	1	0	0	0	0	0	0	0	
2849:	0	0	0	0	0	0	0	0	
2857:	1	0	0	0	0	0	0	0	
2865:	0	0	0	0	0	1	0	0	
2873:	0	0	0	0	2	0	0	0	
2881:	0	0	0	0	0	0	0	0	
2889:	0	0	0	0	1	0	0	0	
2897:	0	2	0	1	0	0	0	0	
2905:	1	0	0	0	1	0	0	0	
2913:	1	0	0	0	0	0	1	0	
2921:	0	0	0	0	0	0	0	0	
2929:	0	0	0	0	0	1	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	1	0	0	0	

2961: 0 0 0 0 0 0 0 0

Sample Title: CP-5023 00-02

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

3393: 0 0 0 2 0 0 0 0

Sample Title: CP-5023 00-02

Channel	-----	-----	-----	-----	-----	-----	-----	-----
3401:	0	1	0	0	1	0	0	1
3409:	0	0	0	0	0	0	0	0
3417:	0	0	0	0	0	0	0	1
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	1	0	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	1	1	0
3481:	0	0	0	0	0	1	0	0
3489:	0	0	0	0	0	0	0	0
3497:	0	1	0	0	0	0	0	0
3505:	0	0	0	0	0	0	0	1
3513:	0	0	0	0	0	0	0	0
3521:	0	0	0	0	0	0	1	0
3529:	0	0	0	0	0	0	0	0
3537:	0	0	1	0	0	0	0	0
3545:	0	0	0	0	0	0	0	0
3553:	0	0	1	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	0	0
3585:	0	0	0	0	1	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	1	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	1	0	0
3641:	1	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	0	1
3681:	0	0	0	0	0	0	0	0
3689:	0	0	0	0	0	0	0	0
3697:	1	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	1	0	0
3729:	0	0	0	0	0	0	0	0
3737:	0	0	0	0	0	0	0	0
3745:	0	0	0	0	0	0	1	1
3753:	0	0	0	0	0	0	0	0
3761:	0	0	0	1	0	0	0	0
3769:	0	0	0	1	0	0	0	0
3777:	0	0	0	1	0	0	0	0
3785:	0	0	0	0	0	0	0	0
3793:	0	0	0	0	1	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	0	1	1	0	0

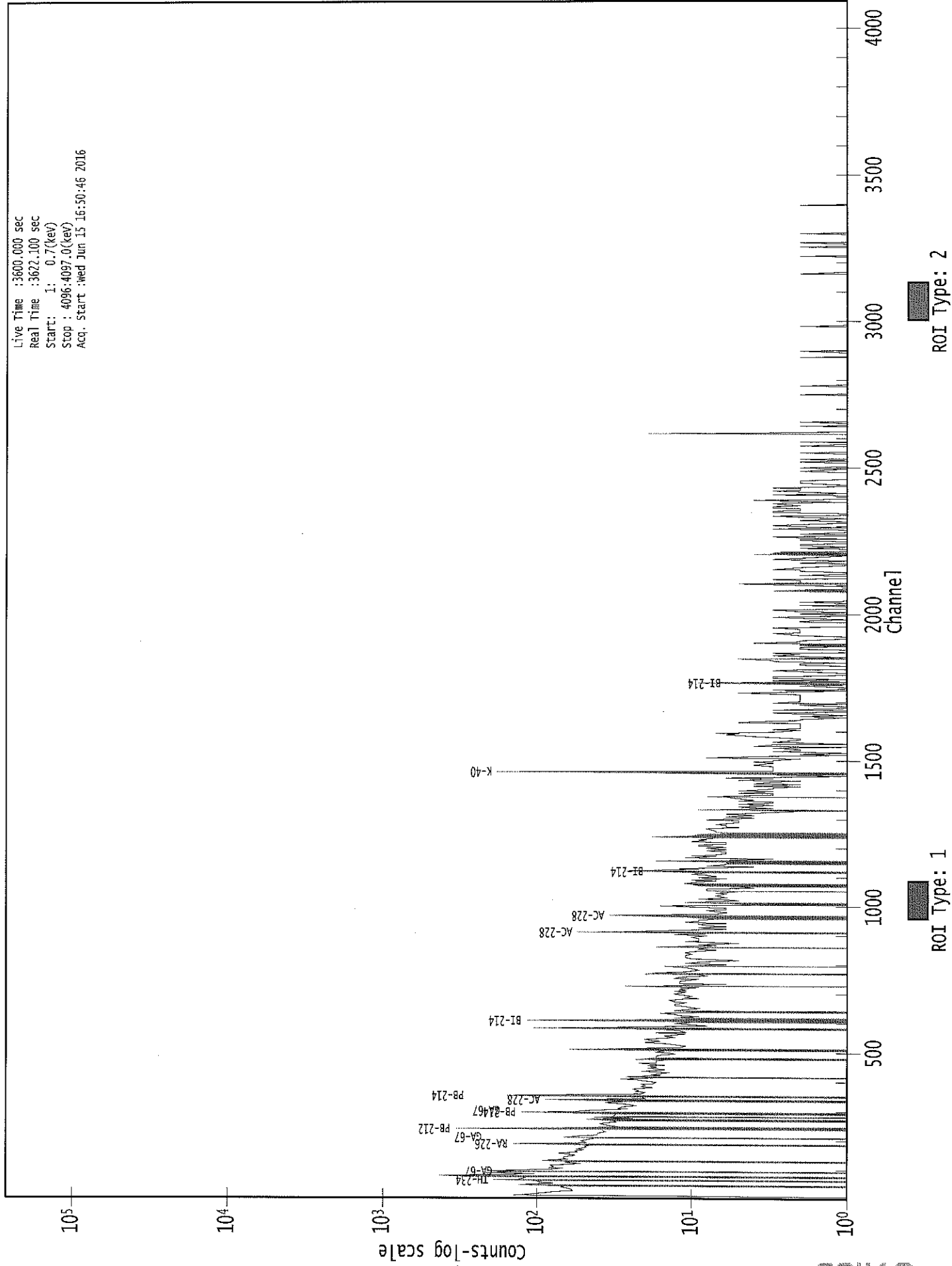
3825: 0 0 0 0 0 0 0 0 1

Sample Title: CP-5023 00-02

Channel	-----	-----	-----	-----	-----	-----	-----	-----
3833:	1	0	0	0	0	0	0	0
3841:	0	0	0	0	1	0	0	0
3849:	0	0	0	0	0	0	0	0
3857:	0	0	0	1	0	0	0	0
3865:	0	0	0	0	0	0	0	0
3873:	0	0	0	0	0	0	0	0
3881:	0	0	0	0	0	0	0	0
3889:	0	0	0	0	0	0	0	1
3897:	0	0	0	0	0	0	0	0
3905:	0	0	0	0	0	0	0	0
3913:	0	0	1	1	0	0	0	0
3921:	0	0	0	0	0	0	0	0
3929:	0	0	1	0	0	1	1	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	0	0	1	0	0
3977:	1	0	1	0	1	1	0	0
3985:	0	0	0	0	0	0	0	0
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	0	0
4017:	0	0	0	1	0	0	0	0
4025:	0	0	0	0	0	0	0	0
4033:	0	0	1	0	1	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	0
4065:	0	0	0	0	0	0	0	0
4073:	0	0	0	0	0	0	0	0
4081:	1	0	0	0	0	0	0	0
4089:	0	0	0	0	0	0	0	0

0000038946.CNF

Live Time : 3600.000 sec
Real Time : 3622.100 sec
Start: 1: 0.7(keV)
Stop : 4096.4097.0(keV)
Acq. Start : Wed Jun 15 16:50:46 2016



21400 :

KBS
6/15/16Analysis Report for 1606040-05
CP-5023 02-05

GAMMA SPECTRUM ANALYSIS

Sample Identification : 1606040-05
Sample Description : CP-5023 02-05
Sample Type : SOIL

Sample Size : 4.403E+02 grams
Facility : Countroom

Sample Taken On : 6/2/2016 1:09:22PM
Acquisition Started : 6/15/2016 4:18:50PM

Procedure : GAS-1402 pCi
Operator : Administrator
Detector Name : GE1
Geometry : GAS-1402
Live Time : 3600.0 seconds
Real Time : 3601.2 seconds

Dead Time : 0.03 %

Peak Locate Threshold : 2.50
Peak Locate Range (in channels) : 1 - 4096
Peak Area Range (in channels) : 19 - 4096
Identification Energy Tolerance : 1.000 keV

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

Sample Number : 38943

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
6/16/16

Analysis Report for 1606040-05
CP-5023 02-05

PEAK LOCATE REPORT

Peak Locate Performed on : 6/15/2016 5:18:54PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096
Peak Search Sensitivity : 2.50

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
1	47.00	47.35	0.0000	0.00
2	77.08	77.42	0.0000	0.00
3	88.43	88.77	0.0000	0.00
4	93.38	93.72	0.0000	0.00
5	100.29	100.63	0.0000	0.00
6	156.18	156.50	0.0000	0.00
7	186.60	186.90	0.0000	0.00
8	239.76	240.04	0.0000	0.00
9	271.03	271.31	0.0000	0.00
10	295.92	296.19	0.0000	0.00
11	300.85	301.11	0.0000	0.00
12	322.97	323.23	0.0000	0.00
13	328.55	328.81	0.0000	0.00
14	339.22	339.47	0.0000	0.00
15	352.52	352.77	0.0000	0.00
16	370.89	371.13	0.0000	0.00
17	378.56	378.80	0.0000	0.00
18	410.42	410.65	0.0000	0.00
19	463.52	463.73	0.0000	0.00
20	511.53	511.73	0.0000	0.00
21	552.27	552.45	0.0000	0.00
22	571.76	571.94	0.0000	0.00
23	583.89	584.06	0.0000	0.00
24	609.90	610.06	0.0000	0.00
25	685.30	685.44	0.0000	0.00
26	703.55	703.68	0.0000	0.00
27	727.92	728.03	0.0000	0.00
28	735.04	735.16	0.0000	0.00
29	770.73	770.83	0.0000	0.00
30	785.85	785.95	0.0000	0.00
31	795.19	795.29	0.0000	0.00
32	807.03	807.13	0.0000	0.00
33	859.70	859.77	0.0000	0.00
34	911.88	911.93	0.0000	0.00
35	965.33	965.37	0.0000	0.00
36	969.58	969.62	0.0000	0.00
37	1121.42	1121.40	0.0000	0.00
38	1238.85	1238.79	0.0000	0.00
39	1244.85	1244.79	0.0000	0.00
40	1378.09	1377.98	0.0000	0.00
41	1391.15	1391.04	0.0000	0.00
42	1461.52	1461.38	0.0000	0.00

Analysis Report for 1606040-05
CP-5023 02-05

<i>Peak No.</i>	<i>Energy (keV)</i>	<i>Centroid Channel</i>	<i>Centroid Uncertainty</i>	<i>Peak Significance</i>
43	1545.75	1545.57	0.0000	0.00
44	1593.55	1593.36	0.0000	0.00
45	1625.74	1625.53	0.0000	0.00
46	1631.24	1631.03	0.0000	0.00
47	1660.86	1660.64	0.0000	0.00
48	1729.96	1729.72	0.0000	0.00
49	1765.09	1764.84	0.0000	0.00
50	1847.44	1847.15	0.0000	0.00
51	1976.28	1975.94	0.0000	0.00
52	2035.11	2034.75	0.0000	0.00
53	2084.44	2084.06	0.0000	0.00
54	2103.71	2103.32	0.0000	0.00
55	2205.38	2204.96	0.0000	0.00
56	2333.96	2333.48	0.0000	0.00
57	2346.80	2346.32	0.0000	0.00
58	2386.43	2385.94	0.0000	0.00
59	2614.96	2614.38	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1606040-05

CP-5023 02-05

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 6/15/2016 5:18:54PM

Peak Analysis From Channel : 1

Peak Analysis To Channel : 4096

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
1	47.00	43 -	50	47.35	1.53E+02	78.66	9.32E+02	2.00
2	77.08	73 -	82	77.42	1.09E+03	138.65	2.09E+03	3.12
3	88.43	87 -	91	88.77	1.74E+02	77.73	1.20E+03	1.64
4	93.38	91 -	98	93.72	3.79E+02	107.63	1.57E+03	1.63
5	100.29	99 -	104	100.63	6.74E+01	64.65	7.71E+02	1.22
6	156.18	153 -	160	156.50	6.80E+01	74.38	8.70E+02	2.86
7	186.60	184 -	190	186.90	2.55E+02	68.35	6.68E+02	1.61
8	239.76	235 -	245	240.04	1.11E+03	100.00	7.40E+02	1.89
9	271.03	268 -	274	271.31	7.42E+01	50.13	4.04E+02	1.85
M 10	295.92	292 -	305	296.19	2.52E+02	45.00	2.32E+02	1.77
m 11	300.85	292 -	305	301.11	6.35E+01	35.79	2.16E+02	1.83
12	322.97	321 -	325	323.23	3.17E+01	33.10	2.13E+02	2.04
13	328.55	326 -	332	328.81	5.65E+01	43.00	2.97E+02	2.03
14	339.22	335 -	343	339.47	1.75E+02	56.40	3.80E+02	1.72
15	352.52	349 -	357	352.77	4.08E+02	60.38	3.08E+02	1.56
16	370.89	369 -	375	371.13	3.27E+01	35.93	2.13E+02	2.71
17	378.56	375 -	382	378.80	3.85E+01	39.85	2.37E+02	3.60
18	410.42	408 -	414	410.65	5.39E+01	33.52	1.66E+02	2.46
19	463.52	461 -	466	463.73	4.00E+01	33.02	1.86E+02	1.48
20	511.53	507 -	517	511.73	1.70E+02	52.79	2.82E+02	2.04
21	552.27	548 -	556	552.45	3.05E+01	36.75	1.89E+02	3.63
22	571.76	568 -	576	571.94	3.21E+01	35.23	1.72E+02	3.72
23	583.89	580 -	588	584.06	2.74E+02	49.43	2.09E+02	1.56
24	609.90	606 -	614	610.06	3.29E+02	51.84	2.10E+02	1.67
25	685.30	682 -	689	685.44	2.44E+01	27.78	1.13E+02	3.21
26	703.55	700 -	707	703.68	2.72E+01	30.79	1.40E+02	3.86
M 27	727.92	725 -	738	728.03	7.65E+01	27.07	8.38E+01	2.04
m 28	735.04	725 -	738	735.16	1.79E+01	22.29	9.35E+01	2.06
29	770.73	765 -	775	770.83	5.40E+01	38.94	1.66E+02	4.79
30	785.85	782 -	789	785.95	2.20E+01	27.57	1.12E+02	1.29
31	795.19	791 -	799	795.29	4.14E+01	28.94	1.03E+02	1.98
32	807.03	801 -	811	807.13	4.33E+01	26.56	6.93E+01	4.70
33	859.70	851 -	864	859.77	4.77E+01	38.11	1.41E+02	2.28
34	911.88	908 -	916	911.93	1.79E+02	34.76	7.32E+01	2.03
M 35	965.33	963 -	978	965.37	2.42E+01	17.89	5.91E+01	2.13
m 36	969.58	963 -	978	969.62	1.15E+02	30.20	8.44E+01	2.11
37	1121.42	1117 -	1128	1121.40	5.79E+01	43.13	2.02E+02	2.22
M 38	1238.85	1235 -	1249	1238.79	3.58E+01	22.56	7.07E+01	2.32
m 39	1244.85	1235 -	1249	1244.79	1.72E+01	20.51	6.12E+01	2.32
40	1378.09	1371 -	1382	1377.98	2.48E+01	19.70	3.64E+01	2.88

Analysis Report for 1606040-05

CP-5023 02-05

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
41	1391.15	1383 - 1400		1391.04	3.06E+01	26.80	5.49E+01	14.73
42	1461.52	1454 - 1467		1461.38	6.73E+02	55.99	4.93E+01	2.29
43	1545.75	1542 - 1549		1545.57	7.95E+00	7.48	4.10E+00	1.36
44	1593.55	1591 - 1596		1593.36	1.21E+01	10.63	9.71E+00	2.49
45	1625.74	1624 - 1628		1625.53	6.31E+00	6.18	3.38E+00	1.08
46	1631.24	1629 - 1633		1631.03	8.06E+00	6.50	1.89E+00	1.41
47	1660.86	1655 - 1664		1660.64	1.11E+01	14.73	2.38E+01	2.80
48	1729.96	1725 - 1733		1729.72	1.58E+01	9.60	4.44E+00	2.19
49	1765.09	1760 - 1769		1764.84	5.24E+01	15.65	5.11E+00	2.92
50	1847.44	1843 - 1851		1847.15	1.66E+01	9.81	4.74E+00	1.19
51	1976.28	1973 - 1978		1975.94	5.50E+00	6.08	3.00E+00	1.32
52	2035.11	2031 - 2037		2034.75	5.89E+00	7.78	6.22E+00	2.67
53	2084.44	2082 - 2086		2084.06	5.00E+00	5.50	2.00E+00	2.72
54	2103.71	2099 - 2107		2103.32	1.45E+01	10.79	9.00E+00	3.99
55	2205.38	2199 - 2208		2204.96	1.79E+01	13.38	1.62E+01	1.30
56	2333.96	2329 - 2337		2333.48	1.19E+01	8.73	4.14E+00	1.06
57	2346.80	2343 - 2349		2346.32	5.89E+00	7.78	6.22E+00	2.04
58	2386.43	2384 - 2388		2385.94	4.17E+00	6.04	3.67E+00	1.72
59	2614.96	2609 - 2618		2614.38	8.77E+01	20.54	1.05E+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

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 6/15/2016 5:18:54PM

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

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
1	47.00	43 -	50	1.53E+02	78.66	9.32E+02	6.14E+01
2	77.08	73 -	82	1.09E+03	138.65	2.09E+03	1.00E+02
3	88.43	87 -	91	1.74E+02	77.73	1.20E+03	6.01E+01
4	93.38	91 -	98	3.79E+02	107.63	1.57E+03	8.25E+01
5	100.29	99 -	104	6.74E+01	64.65	7.71E+02	5.14E+01
6	156.18	153 -	160	6.80E+01	74.38	8.70E+02	5.96E+01
7	186.60	184 -	190	2.55E+02	68.35	6.68E+02	4.97E+01
8	239.76	235 -	245	1.11E+03	100.00	7.40E+02	6.13E+01
9	271.03	268 -	274	7.42E+01	50.13	4.04E+02	3.87E+01

: 00417

Analysis Report for 1606040-05

CP-5023 02-05

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
M	10	295.92	292 -	305	2.52E+02	45.00	2.32E+02	2.50E+01
m	11	300.85	292 -	305	6.35E+01	35.79	2.16E+02	2.41E+01
	12	322.97	321 -	325	3.17E+01	33.10	2.13E+02	2.56E+01
	13	328.55	326 -	332	5.65E+01	43.00	2.97E+02	3.31E+01
	14	339.22	335 -	343	1.75E+02	56.40	3.80E+02	4.09E+01
	15	352.52	349 -	357	4.08E+02	60.38	3.08E+02	3.69E+01
	16	370.89	369 -	375	3.27E+01	35.93	2.13E+02	2.80E+01
	17	378.56	375 -	382	3.85E+01	39.85	2.37E+02	3.11E+01
	18	410.42	408 -	414	5.39E+01	33.52	1.66E+02	2.48E+01
	19	463.52	461 -	466	4.00E+01	33.02	1.86E+02	2.51E+01
	20	511.53	507 -	517	1.70E+02	52.79	2.82E+02	3.77E+01
	21	552.27	548 -	556	3.05E+01	36.75	1.89E+02	2.88E+01
	22	571.76	568 -	576	3.21E+01	35.23	1.72E+02	2.74E+01
	23	583.89	580 -	588	2.74E+02	49.43	2.09E+02	3.02E+01
	24	609.90	606 -	614	3.29E+02	51.84	2.10E+02	3.04E+01
	25	685.30	682 -	689	2.44E+01	27.78	1.13E+02	2.13E+01
	26	703.55	700 -	707	2.72E+01	30.79	1.40E+02	2.38E+01
M	27	727.92	725 -	738	7.65E+01	27.07	8.38E+01	1.50E+01
m	28	735.04	725 -	738	1.79E+01	22.29	9.35E+01	1.59E+01
	29	770.73	765 -	775	5.40E+01	38.94	1.66E+02	2.96E+01
	30	785.85	782 -	789	2.20E+01	27.57	1.12E+02	2.13E+01
	31	795.19	791 -	799	4.14E+01	28.94	1.03E+02	2.13E+01
	32	807.03	801 -	811	4.33E+01	26.56	6.93E+01	1.90E+01
	33	859.70	851 -	864	4.77E+01	38.11	1.41E+02	1.41E+01
	34	911.88	908 -	916	1.79E+02	34.76	7.32E+01	1.82E+01
M	35	965.33	963 -	978	2.42E+01	17.89	5.91E+01	1.26E+01
m	36	969.58	963 -	978	1.15E+02	30.20	8.44E+01	1.51E+01
	37	1121.42	1117 -	1128	5.79E+01	43.13	2.02E+02	3.32E+01
M	38	1238.85	1235 -	1249	3.58E+01	22.56	7.07E+01	1.38E+01
m	39	1244.85	1235 -	1249	1.72E+01	20.51	6.12E+01	1.29E+01
	40	1378.09	1371 -	1382	2.48E+01	19.70	3.64E+01	1.40E+01
	41	1391.15	1383 -	1400	3.06E+01	26.80	5.49E+01	2.01E+01
	42	1461.52	1454 -	1467	6.73E+02	55.99	4.93E+01	1.73E+01
	43	1545.75	1542 -	1549	7.95E+00	7.48	4.10E+00	4.04E+00
	44	1593.55	1591 -	1596	1.21E+01	10.63	9.71E+00	6.60E+00
	45	1625.74	1624 -	1628	6.31E+00	6.18	3.38E+00	2.96E+00
	46	1631.24	1629 -	1633	8.06E+00	6.50	1.89E+00	2.60E+00
	47	1660.86	1655 -	1664	1.11E+01	14.73	2.38E+01	1.08E+01
	48	1729.96	1725 -	1733	1.58E+01	9.60	4.44E+00	4.44E+00
	49	1765.09	1760 -	1769	5.24E+01	15.65	5.11E+00	4.88E+00
	50	1847.44	1843 -	1851	1.66E+01	9.81	4.74E+00	4.48E+00
	51	1976.28	1973 -	1978	5.50E+00	6.08	3.00E+00	3.18E+00
	52	2035.11	2031 -	2037	5.89E+00	7.78	6.22E+00	5.00E+00
	53	2084.44	2082 -	2086	5.00E+00	5.50	2.00E+00	2.63E+00
	54	2103.71	2099 -	2107	1.45E+01	10.79	9.00E+00	6.29E+00
	55	2205.38	2199 -	2208	1.79E+01	13.38	1.62E+01	8.52E+00
	56	2333.96	2329 -	2337	1.19E+01	8.73	4.14E+00	4.39E+00
	57	2346.80	2343 -	2349	5.89E+00	7.78	6.22E+00	5.00E+00
	58	2386.43	2384 -	2388	4.17E+00	6.04	3.67E+00	3.66E+00
	59	2614.96	2609 -	2618	8.77E+01	20.54	1.05E+01	6.93E+00

Analysis Report for 1606040-05
CP-5023 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 : 6/15/2016 5:18:54PM

Peak Analysis From Channel : 1

Peak Analysis To Channel : 4096

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

Peak Match Tolerance : 1.000 keV

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
1	47.00	43 -	50	47.35	1.53E+02	78.66	9.32E+02	PB-210
2	77.08	73 -	82	77.42	1.09E+03	138.65	2.09E+03	.....
3	88.43	87 -	91	88.77	1.74E+02	77.73	1.20E+03	LU-176 CD-109 SN-126
4	93.38	91 -	98	93.72	3.79E+02	107.63	1.57E+03	GA-67
5	100.29	99 -	104	100.63	6.74E+01	64.65	7.71E+02	LU-173
6	156.18	153 -	160	156.50	6.80E+01	74.38	8.70E+02	.....
7	186.60	184 -	190	186.90	2.55E+02	68.35	6.68E+02	RA-226
8	239.76	235 -	245	240.04	1.11E+03	100.00	7.40E+02	.....
9	271.03	268 -	274	271.31	7.42E+01	50.13	4.04E+02	.....
M 10	295.92	292 -	305	296.19	2.52E+02	45.00	2.32E+02	PB-214
m 11	300.85	292 -	305	301.11	6.35E+01	35.79	2.16E+02	GA-67 PB-212 BI-210M
12	322.97	321 -	325	323.23	3.17E+01	33.10	2.13E+02	RA-223
13	328.55	326 -	332	328.81	5.65E+01	43.00	2.97E+02	LA-140
14	339.22	335 -	343	339.47	1.75E+02	56.40	3.80E+02	AC-228
15	352.52	349 -	357	352.77	4.08E+02	60.38	3.08E+02	PB-214
16	370.89	369 -	375	371.13	3.27E+01	35.93	2.13E+02	.....
17	378.56	375 -	382	378.80	3.85E+01	39.85	2.37E+02	.....
18	410.42	408 -	414	410.65	5.39E+01	33.52	1.66E+02	HO-166M
19	463.52	461 -	466	463.73	4.00E+01	33.02	1.86E+02	SB-125
20	511.53	507 -	517	511.73	1.70E+02	52.79	2.82E+02	.....
21	552.27	548 -	556	552.45	3.05E+01	36.75	1.89E+02	RB-83
22	571.76	568 -	576	571.94	3.21E+01	35.23	1.72E+02	.....
23	583.89	580 -	588	584.06	2.74E+02	49.43	2.09E+02	TL-208
24	609.90	606 -	614	610.06	3.29E+02	51.84	2.10E+02	BI-214
25	685.30	682 -	689	685.44	2.44E+01	27.78	1.13E+02	SB-127
26	703.55	700 -	707	703.68	2.72E+01	30.79	1.40E+02	NB-94

Analysis Report for 1606040-05
CP-5023 02-05

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
M	27	727.92	725 -	738	728.03	7.65E+01	27.07	8.38E+01	BI-212
m	28	735.04	725 -	738	735.16	1.79E+01	22.29	9.35E+01	PM-146
	29	770.73	765 -	775	770.83	5.40E+01	38.94	1.66E+02	.....
	30	785.85	782 -	789	785.95	2.20E+01	27.57	1.12E+02	.....
	31	795.19	791 -	799	795.29	4.14E+01	28.94	1.03E+02	CS-134
	32	807.03	801 -	811	807.13	4.33E+01	26.56	6.93E+01	.....
	33	859.70	851 -	864	859.77	4.77E+01	38.11	1.41E+02	TL-208
	34	911.88	908 -	916	911.93	1.79E+02	34.76	7.32E+01	LU-172 AC-228
M	35	965.33	963 -	978	965.37	2.42E+01	17.89	5.91E+01	.....
m	36	969.58	963 -	978	969.62	1.15E+02	30.20	8.44E+01	AC-228
	37	1121.42	1117 -	1128	1121.40	5.79E+01	43.13	2.02E+02	TA-182 SC-46
M	38	1238.85	1235 -	1249	1238.79	3.58E+01	22.56	7.07E+01	CO-56
m	39	1244.85	1235 -	1249	1244.79	1.72E+01	20.51	6.12E+01	.....
	40	1378.09	1371 -	1382	1377.98	2.48E+01	19.70	3.64E+01	.....
	41	1391.15	1383 -	1400	1391.04	3.06E+01	26.80	5.49E+01	.....
	42	1461.52	1454 -	1467	1461.38	6.73E+02	55.99	4.93E+01	K-40
	43	1545.75	1542 -	1549	1545.57	7.95E+00	7.48	4.10E+00	.....
	44	1593.55	1591 -	1596	1593.36	1.21E+01	10.63	9.71E+00	.....
	45	1625.74	1624 -	1628	1625.53	6.31E+00	6.18	3.38E+00	.....
	46	1631.24	1629 -	1633	1631.03	8.06E+00	6.50	1.89E+00	.....
	47	1660.86	1655 -	1664	1660.64	1.11E+01	14.73	2.38E+01	.....
	48	1729.96	1725 -	1733	1729.72	1.58E+01	9.60	4.44E+00	.....
	49	1765.09	1760 -	1769	1764.84	5.24E+01	15.65	5.11E+00	BI-214
	50	1847.44	1843 -	1851	1847.15	1.66E+01	9.81	4.74E+00	.....
	51	1976.28	1973 -	1978	1975.94	5.50E+00	6.08	3.00E+00	.....
	52	2035.11	2031 -	2037	2034.75	5.89E+00	7.78	6.22E+00	.....
	53	2084.44	2082 -	2086	2084.06	5.00E+00	5.50	2.00E+00	.....
	54	2103.71	2099 -	2107	2103.32	1.45E+01	10.79	9.00E+00	.....
	55	2205.38	2199 -	2208	2204.96	1.79E+01	13.38	1.62E+01	.....
	56	2333.96	2329 -	2337	2333.48	1.19E+01	8.73	4.14E+00	.....
	57	2346.80	2343 -	2349	2346.32	5.89E+00	7.78	6.22E+00	.....
	58	2386.43	2384 -	2388	2385.94	4.17E+00	6.04	3.67E+00	.....
	59	2614.96	2609 -	2618	2614.38	8.77E+01	20.54	1.05E+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 : 6/15/2016 5:18:54PM

: 00420

Analysis Report for 1606040-05
CP-5023 02-05

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
1	47.00	1.53E+02	78.66	1.71E-02	1.78E-03
2	77.08	1.09E+03	138.65	2.78E-02	2.37E-03
3	88.43	1.74E+02	77.73	2.85E-02	2.73E-03
4	93.38	3.79E+02	107.63	2.86E-02	2.63E-03
5	100.29	6.74E+01	64.65	2.84E-02	2.50E-03
6	156.18	6.80E+01	74.38	2.46E-02	2.15E-03
7	186.60	2.55E+02	68.35	2.23E-02	2.02E-03
8	239.76	1.11E+03	100.00	1.92E-02	1.63E-03
9	271.03	7.42E+01	50.13	1.77E-02	1.40E-03
M	10	295.92	2.52E+02	1.67E-02	1.31E-03
m	11	300.85	6.35E+01	1.65E-02	1.30E-03
12	322.97	3.17E+01	33.10	1.57E-02	1.25E-03
13	328.55	5.65E+01	43.00	1.55E-02	1.24E-03
14	339.22	1.75E+02	56.40	1.52E-02	1.22E-03
15	352.52	4.08E+02	60.38	1.47E-02	1.19E-03
16	370.89	3.27E+01	35.93	1.42E-02	1.16E-03
17	378.56	3.85E+01	39.85	1.40E-02	1.14E-03
18	410.42	5.39E+01	33.52	1.32E-02	1.09E-03
19	463.52	4.00E+01	33.02	1.21E-02	1.04E-03
20	511.53	1.70E+02	52.79	1.12E-02	9.90E-04
21	552.27	3.05E+01	36.75	1.06E-02	9.48E-04
22	571.76	3.21E+01	35.23	1.03E-02	9.27E-04
23	583.89	2.74E+02	49.43	1.02E-02	9.15E-04
24	609.90	3.29E+02	51.84	9.82E-03	8.88E-04
25	685.30	2.44E+01	27.78	8.97E-03	8.13E-04
26	703.55	2.72E+01	30.79	8.78E-03	7.97E-04
M	27	727.92	7.65E+01	27.07	8.55E-03
m	28	735.04	1.79E+01	22.29	8.48E-03
29	770.73	5.40E+01	38.94	8.17E-03	7.36E-04
30	785.85	2.20E+01	27.57	8.04E-03	7.23E-04
31	795.19	4.14E+01	28.94	7.97E-03	7.15E-04
32	807.03	4.33E+01	26.56	7.88E-03	7.04E-04
33	859.70	4.77E+01	38.11	7.49E-03	6.57E-04
34	911.88	1.79E+02	34.76	7.14E-03	6.15E-04
M	35	965.33	2.42E+01	17.89	6.83E-03
m	36	969.58	1.15E+02	30.20	6.80E-03
37	1121.42	5.79E+01	43.13	6.06E-03	5.06E-04
M	38	1238.85	3.58E+01	22.56	5.61E-03
m	39	1244.85	1.72E+01	20.51	5.59E-03
40	1378.09	2.48E+01	19.70	5.18E-03	4.40E-04
41	1391.15	3.06E+01	26.80	5.15E-03	4.37E-04
42	1461.52	6.73E+02	55.99	4.97E-03	4.19E-04
43	1545.75	7.95E+00	7.48	4.78E-03	3.98E-04
44	1593.55	1.21E+01	10.63	4.68E-03	3.86E-04
45	1625.74	6.31E+00	6.18	4.62E-03	3.78E-04
46	1631.24	8.06E+00	6.50	4.61E-03	3.77E-04
47	1660.86	1.11E+01	14.73	4.56E-03	3.69E-04
48	1729.96	1.58E+01	9.60	4.45E-03	3.52E-04
49	1765.09	5.24E+01	15.65	4.39E-03	3.43E-04
50	1847.44	1.66E+01	9.81	4.28E-03	3.26E-04
51	1976.28	5.50E+00	6.08	4.14E-03	3.26E-04
52	2035.11	5.89E+00	7.78	4.08E-03	3.26E-04
53	2084.44	5.00E+00	5.50	4.04E-03	3.26E-04

Analysis Report for 1606040-05
CP-5023 02-05

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
54	2103.71	1.45E+01	10.79	4.02E-03	3.26E-04
55	2205.38	1.79E+01	13.38	3.95E-03	3.26E-04
56	2333.96	1.19E+01	8.73	3.88E-03	3.26E-04
57	2346.80	5.89E+00	7.78	3.87E-03	3.26E-04
58	2386.43	4.17E+00	6.04	3.85E-03	3.26E-04
59	2614.96	8.77E+01	20.54	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 : 6/15/2016 5:18:54PM

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

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.	
	1	47.00	1.53E+02	78.66	4.33E+01	8.35E+00	1.10E+02	7.91E+01
	2	77.08	1.09E+03	138.65			1.09E+03	1.39E+02
	3	88.43	1.74E+02	77.73			1.74E+02	7.77E+01
	4	93.38	3.79E+02	107.63	1.29E+02	7.14E+00	2.50E+02	1.08E+02
	5	100.29	6.74E+01	64.65			6.74E+01	6.46E+01
	6	156.18	6.80E+01	74.38			6.80E+01	7.44E+01
	7	186.60	2.55E+02	68.35	5.81E+01	8.50E+00	1.97E+02	6.89E+01
	8	239.76	1.11E+03	100.00	1.81E+01	5.76E+00	1.09E+03	1.00E+02
	9	271.03	7.42E+01	50.13			7.42E+01	5.01E+01
M	10	295.92	2.52E+02	45.00	1.02E+00	5.38E+00	2.51E+02	4.53E+01
m	11	300.85	6.35E+01	35.79			6.35E+01	3.58E+01
	12	322.97	3.17E+01	33.10			3.17E+01	3.31E+01
	13	328.55	5.65E+01	43.00			5.65E+01	4.30E+01
	14	339.22	1.75E+02	56.40	3.86E+00	4.98E+00	1.71E+02	5.66E+01
	15	352.52	4.08E+02	60.38	7.25E+00	4.86E+00	4.01E+02	6.06E+01
	16	370.89	3.27E+01	35.93			3.27E+01	3.59E+01
	17	378.56	3.85E+01	39.85			3.85E+01	3.98E+01
	18	410.42	5.39E+01	33.52			5.39E+01	3.35E+01
	19	463.52	4.00E+01	33.02			4.00E+01	3.30E+01
	20	511.53	1.70E+02	52.79	7.58E+01	5.38E+00	9.41E+01	5.31E+01
	21	552.27	3.05E+01	36.75			3.05E+01	3.67E+01
	22	571.76	3.21E+01	35.23			3.21E+01	3.52E+01
	23	583.89	2.74E+02	49.43	6.11E+00	3.78E+00	2.68E+02	4.96E+01
	24	609.90	3.29E+02	51.84	6.74E+00	3.64E+00	3.22E+02	5.20E+01

Analysis Report for 1606040-05

CP-5023 02-05

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	25	685.30	2.44E+01	27.78			2.44E+01	2.78E+01
	26	703.55	2.72E+01	30.79			2.72E+01	3.08E+01
M	27	727.92	7.65E+01	27.07			7.65E+01	2.71E+01
m	28	735.04	1.79E+01	22.29			1.79E+01	2.23E+01
	29	770.73	5.40E+01	38.94			5.40E+01	3.89E+01
	30	785.85	2.20E+01	27.57			2.20E+01	2.76E+01
	31	795.19	4.14E+01	28.94			4.14E+01	2.89E+01
	32	807.03	4.33E+01	26.56			4.33E+01	2.66E+01
	33	859.70	4.77E+01	38.11			4.77E+01	3.81E+01
	34	911.88	1.79E+02	34.76	4.21E+00	2.98E+00	1.75E+02	3.49E+01
M	35	965.33	2.42E+01	17.89			2.42E+01	1.79E+01
m	36	969.58	1.15E+02	30.20			1.15E+02	3.02E+01
	37	1121.42	5.79E+01	43.13			5.79E+01	4.31E+01
M	38	1238.85	3.58E+01	22.56			3.58E+01	2.26E+01
m	39	1244.85	1.72E+01	20.51			1.72E+01	2.05E+01
	40	1378.09	2.48E+01	19.70			2.48E+01	1.97E+01
	41	1391.15	3.06E+01	26.80			3.06E+01	2.68E+01
	42	1461.52	6.73E+02	55.99	6.83E+00	2.10E+00	6.67E+02	5.60E+01
	43	1545.75	7.95E+00	7.48			7.95E+00	7.48E+00
	44	1593.55	1.21E+01	10.63			1.21E+01	1.06E+01
	45	1625.74	6.31E+00	6.18			6.31E+00	6.18E+00
	46	1631.24	8.06E+00	6.50			8.06E+00	6.50E+00
	47	1660.86	1.11E+01	14.73			1.11E+01	1.47E+01
	48	1729.96	1.58E+01	9.60			1.58E+01	9.60E+00
	49	1765.09	5.24E+01	15.65	1.66E+00	1.65E+00	5.08E+01	1.57E+01
	50	1847.44	1.66E+01	9.81			1.66E+01	9.81E+00
	51	1976.28	5.50E+00	6.08			5.50E+00	6.08E+00
	52	2035.11	5.89E+00	7.78			5.89E+00	7.78E+00
	53	2084.44	5.00E+00	5.50			5.00E+00	5.50E+00
	54	2103.71	1.45E+01	10.79			1.45E+01	1.08E+01
	55	2205.38	1.79E+01	13.38			1.79E+01	1.34E+01
	56	2333.96	1.19E+01	8.73			1.19E+01	8.73E+00
	57	2346.80	5.89E+00	7.78			5.89E+00	7.78E+00
	58	2386.43	4.17E+00	6.04			4.17E+00	6.04E+00
	59	2614.96	8.77E+01	20.54	4.95E+00	1.35E+00	8.28E+01	2.06E+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 1606040-05
CP-5023 02-05

AREA CORRECTION REPORT REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 6/15/2016 5:18:54PM
 Ref. Peak Energy : 0.00 Reference Date :
 Peak Ratio : 0.00 Uncertainty : 0.00
 Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000038676.CNF

Corrected Area is: Original * Peak Ratio - Background

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
1	47.00	1.53E+02	78.66	4.33E+01	8.35E+00	1.10E+02	7.91E+01
2	77.08	1.09E+03	138.65			1.09E+03	1.39E+02
3	88.43	1.74E+02	77.73			1.74E+02	7.77E+01
4	93.38	3.79E+02	107.63	1.29E+02	7.14E+00	2.50E+02	1.08E+02
5	100.29	6.74E+01	64.65			6.74E+01	6.46E+01
6	156.18	6.80E+01	74.38			6.80E+01	7.44E+01
7	186.60	2.55E+02	68.35	5.81E+01	8.50E+00	1.97E+02	6.89E+01
8	239.76	1.11E+03	100.00	1.81E+01	5.76E+00	1.09E+03	1.00E+02
9	271.03	7.42E+01	50.13			7.42E+01	5.01E+01
M 10	295.92	2.52E+02	45.00	1.02E+00	5.38E+00	2.51E+02	4.53E+01
m 11	300.85	6.35E+01	35.79			6.35E+01	3.58E+01
12	322.97	3.17E+01	33.10			3.17E+01	3.31E+01
13	328.55	5.65E+01	43.00			5.65E+01	4.30E+01
14	339.22	1.75E+02	56.40	3.86E+00	4.98E+00	1.71E+02	5.66E+01
15	352.52	4.08E+02	60.38	7.25E+00	4.86E+00	4.01E+02	6.06E+01
16	370.89	3.27E+01	35.93			3.27E+01	3.59E+01
17	378.56	3.85E+01	39.85			3.85E+01	3.98E+01
18	410.42	5.39E+01	33.52			5.39E+01	3.35E+01
19	463.52	4.00E+01	33.02			4.00E+01	3.30E+01
20	511.53	1.70E+02	52.79	7.58E+01	5.38E+00	9.41E+01	5.31E+01
21	552.27	3.05E+01	36.75			3.05E+01	3.67E+01
22	571.76	3.21E+01	35.23			3.21E+01	3.52E+01
23	583.89	2.74E+02	49.43	6.11E+00	3.78E+00	2.68E+02	4.96E+01
24	609.90	3.29E+02	51.84	6.74E+00	3.64E+00	3.22E+02	5.20E+01
25	685.30	2.44E+01	27.78			2.44E+01	2.78E+01
26	703.55	2.72E+01	30.79			2.72E+01	3.08E+01
M 27	727.92	7.65E+01	27.07			7.65E+01	2.71E+01
m 28	735.04	1.79E+01	22.29			1.79E+01	2.23E+01
29	770.73	5.40E+01	38.94			5.40E+01	3.89E+01
30	785.85	2.20E+01	27.57			2.20E+01	2.76E+01
31	795.19	4.14E+01	28.94			4.14E+01	2.89E+01
32	807.03	4.33E+01	26.56			4.33E+01	2.66E+01
33	859.70	4.77E+01	38.11			4.77E+01	3.81E+01
34	911.88	1.79E+02	34.76	4.21E+00	2.98E+00	1.75E+02	3.49E+01
M 35	965.33	2.42E+01	17.89			2.42E+01	1.79E+01
m 36	969.58	1.15E+02	30.20			1.15E+02	3.02E+01
37	1121.42	5.79E+01	43.13			5.79E+01	4.31E+01
M 38	1238.85	3.58E+01	22.56			3.58E+01	2.26E+01
m 39	1244.85	1.72E+01	20.51			1.72E+01	2.05E+01
40	1378.09	2.48E+01	19.70			2.48E+01	1.97E+01
41	1391.15	3.06E+01	26.80			3.06E+01	2.68E+01

Analysis Report for 1606040-05
CP-5023 02-05

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
42	1461.52	6.73E+02	55.99	6.83E+00	2.10E+00	6.67E+02	5.60E+01
43	1545.75	7.95E+00	7.48			7.95E+00	7.48E+00
44	1593.55	1.21E+01	10.63			1.21E+01	1.06E+01
45	1625.74	6.31E+00	6.18			6.31E+00	6.18E+00
46	1631.24	8.06E+00	6.50			8.06E+00	6.50E+00
47	1660.86	1.11E+01	14.73			1.11E+01	1.47E+01
48	1729.96	1.58E+01	9.60			1.58E+01	9.60E+00
49	1765.09	5.24E+01	15.65	1.66E+00	1.65E+00	5.08E+01	1.57E+01
50	1847.44	1.66E+01	9.81			1.66E+01	9.81E+00
51	1976.28	5.50E+00	6.08			5.50E+00	6.08E+00
52	2035.11	5.89E+00	7.78			5.89E+00	7.78E+00
53	2084.44	5.00E+00	5.50			5.00E+00	5.50E+00
54	2103.71	1.45E+01	10.79			1.45E+01	1.08E+01
55	2205.38	1.79E+01	13.38			1.79E+01	1.34E+01
56	2333.96	1.19E+01	8.73			1.19E+01	8.73E+00
57	2346.80	5.89E+00	7.78			5.89E+00	7.78E+00
58	2386.43	4.17E+00	6.04			4.17E+00	6.04E+00
59	2614.96	8.77E+01	20.54	4.95E+00	1.35E+00	8.28E+01	2.06E+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	0.923	1460.81 *	10.67	2.14E+01	2.59E+00
GA-67	0.848	93.31 *	35.70	6.83E+00	1.43E+01
		208.95	2.24		
		300.22 *	16.00	6.72E+00	1.43E+01
CD-109	0.975	88.03 *	3.72	2.85E+00	1.31E+00
SN-126	0.889	87.57 *	37.00	2.81E-01	1.28E-01
TL-208	0.951	583.14 *	30.22	1.49E+00	3.06E-01
		860.37 *	4.48	2.42E+00	1.95E+00
		2614.66 *	35.85	1.04E+00	2.73E-01
PB-210	0.961	46.50 *	4.25	2.57E+00	1.88E+00
BI-212	0.696	727.17 *	11.80	1.29E+00	4.72E-01
		1620.62	2.75		
BI-214	0.624	609.31 *	46.30	1.21E+00	2.23E-01

: 00425

Analysis Report for 1606040-05
CP-5023 02-05

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
BI-214	0.624	1120.29	15.10		
		1764.49 *	15.80	1.25E+00	3.99E-01
		2204.22	4.98		
PB-214	0.937	295.21 *	19.19	1.34E+00	2.63E-01
		351.92 *	37.19	1.25E+00	2.14E-01
RA-223	0.879	323.87 *	3.88	8.87E-01	9.30E-01
RA-226	0.976	186.21 *	3.28	4.59E+00	8.55E+00
AC-228	0.915	338.32 *	11.40	1.69E+00	5.75E-01
		911.07 *	27.70	1.51E+00	3.28E-01
		969.11 *	16.60	1.74E+00	4.80E-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 : 6/15/2016 5:18:54PM
 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	77.08	3.01552E-01	6.39		
5	100.29	1.87258E-02	47.95	Tol.	LU-173
6	156.18	1.88917E-02	54.68		
8	239.76	3.03018E-01	4.59		
9	271.03	2.05978E-02	33.80		
13	328.55	1.57026E-02	38.03		
16	370.89	9.07074E-03	55.02	Sum	
17	378.56	1.06971E-02	51.74		
18	410.42	1.49635E-02	31.11	Sum	
19	463.52	1.11111E-02	41.27	Tol.	SB-125
20	511.53	2.61347E-02	28.20		
21	552.27	8.47222E-03	60.24	Tol.	RB-83
22	571.76	8.90537E-03	54.95		
25	685.30	6.79012E-03	56.83	Tol.	SB-127
26	703.55	7.56157E-03	56.55	Sum	
m 28	735.04	4.98451E-03	62.12	Tol.	PM-146
29	770.73	1.49980E-02	36.06	Sum	
30	785.85	6.11111E-03	62.65		
31	795.19	1.15114E-02	34.92	Tol.	CS-134

Analysis Report for 1606040-05
CP-5023 02-05

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
M	32	807.03	1.20353E-02	30.65	
	35	965.33	6.72489E-03	36.95	
	37	1121.42	1.60727E-02	37.27	Tol. SC-46 TA-182
M	38	1238.85	9.93979E-03	31.52	
m	39	1244.85	4.76447E-03	59.79	
	40	1378.09	6.88630E-03	39.73	
	41	1391.15	8.49138E-03	43.83	
	43	1545.75	2.20833E-03	47.06	
	44	1593.55	3.37418E-03	43.76	D-Esc
	45	1625.74	1.75347E-03	48.99	
	46	1631.24	2.23765E-03	40.34	
	47	1660.86	3.07971E-03	66.43	
	48	1729.96	4.38272E-03	30.44	
	50	1847.44	4.61988E-03	29.49	
	51	1976.28	1.52778E-03	55.30	
	52	2035.11	1.63580E-03	66.04	
	53	2084.44	1.38889E-03	55.00	
	54	2103.71	4.02778E-03	37.22	S-Esc
	55	2205.38	4.97863E-03	37.32	
	56	2333.96	3.31349E-03	36.60	
	57	2346.80	1.63580E-03	66.04	
	58	2386.43	1.15741E-03	72.50	

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	0.92	1460.81 *	10.67	2.14E+01	2.59E+00
GA-67	0.84	93.31 *	35.70	6.83E+00	1.43E+01
		208.95	2.24		
		300.22 *	16.00	6.72E+00	1.43E+01
CD-109	0.97	88.03 *	3.72	2.85E+00	1.31E+00

: 00427

Analysis Report for 1606040-05
CP-5023 02-05

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
SN-126	0.88	87.57 *	37.00	2.81E-01	1.28E-01
TL-208	0.95	583.14 *	30.22	1.49E+00	3.06E-01
		860.37 *	4.48	2.42E+00	1.95E+00
		2614.66 *	35.85	1.04E+00	2.73E-01
PB-210	0.96	46.50 *	4.25	2.57E+00	1.88E+00
BI-212	0.69	727.17 *	11.80	1.29E+00	4.72E-01
		1620.62	2.75		
BI-214	0.62	609.31 *	46.30	1.21E+00	2.23E-01
		1120.29	15.10		
		1764.49 *	15.80	1.25E+00	3.99E-01
		2204.22	4.98		
PB-214	0.93	295.21 *	19.19	1.34E+00	2.63E-01
		351.92 *	37.19	1.25E+00	2.14E-01
RA-223	0.87	323.87 *	3.88	8.87E-01	9.30E-01
RA-226	0.97	186.21 *	3.28	4.59E+00	8.55E+00
AC-228	0.91	338.32 *	11.40	1.69E+00	5.75E-01
		911.07 *	27.70	1.51E+00	3.28E-01
		969.11 *	16.60	1.74E+00	4.80E-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	0.923	2.14E+01	2.59E+00	
GA-67	0.848	6.78E+00	1.30E+01	
? CD-109	0.975	2.85E+00	1.31E+00	
? SN-126	0.889	2.81E-01	1.28E-01	
TL-208	0.951	1.25E+00	2.03E-01	
PB-210	0.961	2.57E+00	1.88E+00	
BI-212	0.696	1.29E+00	4.72E-01	
BI-214	0.624	1.22E+00	1.95E-01	
PB-214	0.937	1.28E+00	1.66E-01	

Analysis Report for 1606040-05
CP-5023 02-05

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
RA-223	0.879	8.87E-01	9.30E-01	
RA-226	0.976	4.59E+00	8.55E+00	
AC-228	0.915	1.60E+00	2.45E-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 1606040-05
CP-5023 02-05

UNIDENTIFIED PEAKS

Peak Locate Performed on : 6/15/2016 5:18:54PM
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	77.08	3.01552E-01	6.39		
5	100.29	1.87258E-02	47.95	Tol.	LU-173
6	156.18	1.88917E-02	54.68		
8	239.76	3.03018E-01	4.59		
9	271.03	2.05978E-02	33.80		
13	328.55	1.57026E-02	38.03		
16	370.89	9.07074E-03	55.02	Sum	
17	378.56	1.06971E-02	51.74		
18	410.42	1.49635E-02	31.11	Sum	
19	463.52	1.11111E-02	41.27	Tol.	SB-125
20	511.53	2.61347E-02	28.20		
21	552.27	8.47222E-03	60.24	Tol.	RB-83
22	571.76	8.90537E-03	54.95		
25	685.30	6.79012E-03	56.83	Tol.	SB-127
26	703.55	7.56157E-03	56.55	Sum	
m 28	735.04	4.98451E-03	62.12	Tol.	PM-146
29	770.73	1.49980E-02	36.06	Sum	
30	785.85	6.11111E-03	62.65		
31	795.19	1.15114E-02	34.92	Tol.	CS-134
32	807.03	1.20353E-02	30.65		
M 35	965.33	6.72489E-03	36.95		
37	1121.42	1.60727E-02	37.27	Tol.	SC-46 TA-182
M 38	1238.85	9.93979E-03	31.52		
m 39	1244.85	4.76447E-03	59.79		
40	1378.09	6.88630E-03	39.73		
41	1391.15	8.49138E-03	43.83		
43	1545.75	2.20833E-03	47.06		
44	1593.55	3.37418E-03	43.76	D-Esc	
45	1625.74	1.75347E-03	48.99		
46	1631.24	2.23765E-03	40.34		
47	1660.86	3.07971E-03	66.43		
48	1729.96	4.38272E-03	30.44		
50	1847.44	4.61988E-03	29.49		
51	1976.28	1.52778E-03	55.30		

Analysis Report for 1606040-05
 CP-5023 02-05

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
52	2035.11	1.63580E-03	66.04		
53	2084.44	1.38889E-03	55.00		
54	2103.71	4.02778E-03	37.22	S-Esc	
55	2205.38	4.97863E-03	37.32		
56	2333.96	3.31349E-03	36.60		
57	2346.80	1.63580E-03	66.04		
58	2386.43	1.15741E-03	72.50		

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	-3.77E-01	7.61E-01	7.61E-01
+	NA-22	1274.54	99.94	-3.90E-02	8.43E-02	8.43E-02
+	NA-24	1368.53	99.99	1.48E+04	2.64E+04	1.63E+05
		2754.09	99.86	0.00E+00		2.64E+04
+	AL-26	1808.65	99.76	-1.90E-02	6.26E-02	6.26E-02
+	K-40	1460.81	* 10.67	2.14E+01	1.24E+00	1.24E+00
+	@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88	94.40	-1.49E-01	7.87E-02	7.87E-02
		78.34	96.00	1.83E-01		1.05E-01
+	SC-46	889.25	99.98	-2.81E-02	9.12E-02	9.12E-02
		1120.51	99.99	2.10E-01		1.67E-01
+	V-48	983.52	99.98	-2.20E-02	1.44E-01	1.44E-01
		1312.10	97.50	1.81E-02		1.52E-01
+	CR-51	320.08	9.83	-3.31E-02	8.20E-01	8.20E-01
+	MN-54	834.83	99.97	4.43E-02	9.34E-02	9.34E-02
+	CO-56	846.75	99.96	7.91E-03	8.66E-02	8.66E-02
		1037.75	14.03	-6.07E-02		6.57E-01
		1238.25	67.00	1.10E-01		2.10E-01
		1771.40	15.51	5.10E-02		4.90E-01
		2598.48	16.90	-9.95E-03		2.20E-01
+	CO-57	122.06	85.51	-1.41E-02	6.48E-02	6.48E-02
		136.48	10.60	2.31E-02		5.44E-01

Analysis Report for 1606040-05
CP-5023 02-05

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	CO-58	810.76	99.40	-1.94E-02	7.99E-02	7.99E-02
+	FE-59	1099.22	56.50	-9.83E-02	1.79E-01	1.79E-01
		1291.56	43.20	5.31E-02		2.47E-01
+	CO-60	1173.22	100.00	1.31E-03	9.36E-02	1.13E-01
		1332.49	100.00	3.46E-02		9.36E-02
+	ZN-65	1115.52	50.75	1.89E-02	2.00E-01	2.00E-01
+	GA-67	93.31	* 35.70	6.83E+00	4.72E+00	4.72E+00
		208.95	2.24	1.71E+01		4.63E+01
		300.22	* 16.00	6.72E+00		1.25E+01
+	SE-75	121.11	16.70	-1.14E-02	1.01E-01	3.45E-01
		136.00	59.20	-9.25E-03		1.01E-01
		264.65	59.80	-1.63E-02		1.01E-01
		279.53	25.20	1.80E-01		2.79E-01
		400.65	11.40	-3.41E-02		6.02E-01
+	RB-82	776.52	13.00	1.59E-03	7.66E-01	7.66E-01
+	RB-83	520.41	46.00	-7.30E-03	1.71E-01	1.71E-01
		529.64	30.30	-4.18E-03		2.75E-01
		552.65	16.40	2.57E-01		5.42E-01
+	KR-85	513.99	0.43	5.30E+01	2.68E+01	2.68E+01
+	SR-85	513.99	99.27	2.66E-01	1.34E-01	1.34E-01
+	Y-88	898.02	93.40	-1.57E-03	5.70E-02	9.70E-02
		1836.01	99.38	-8.70E-03		5.70E-02
+	NB-93M	16.57	9.43	-1.16E+02	7.24E+01	7.24E+01
+	NB-94	702.63	100.00	2.27E-02	8.71E-02	8.94E-02
		871.10	100.00	1.12E-02		8.71E-02
+	NB-95	765.79	99.81	2.09E-02	1.31E-01	1.31E-01
+	NB-95M	235.69	25.00	-4.63E+01	3.23E+00	3.23E+00
+	ZR-95	724.18	43.70	5.28E-02	1.76E-01	2.32E-01
		756.72	55.30	-9.30E-03		1.76E-01
+	MO-99	181.06	6.20	1.56E+01	1.76E+01	2.61E+01
		739.58	12.80	6.27E+00		1.76E+01
		778.00	4.50	3.67E-02		4.03E+01
+	RU-103	497.08	89.00	-5.26E-03	9.86E-02	9.86E-02
+	RU-106	621.84	9.80	2.57E-01	8.08E-01	8.08E-01
+	AG-108M	433.93	89.90	-7.99E-03	7.36E-02	7.36E-02
		614.37	90.40	-1.82E-02		8.51E-02
		722.95	90.50	2.98E-02		8.94E-02
+	CD-109	88.03	* 3.72	2.85E+00	2.02E+00	2.02E+00
+	AG-110M	657.75	93.14	-2.95E-02	8.42E-02	8.42E-02
		677.61	10.53	1.41E-01		7.52E-01
		706.67	16.46	7.45E-03		5.31E-01
		763.93	21.98	8.01E-02		4.15E-01
		884.67	71.63	5.39E-02		1.27E-01
		1384.27	23.94	-9.56E-02		3.65E-01
+	CD-113M	263.70	0.02	-5.06E-01	2.50E+02	2.50E+02
+	SN-113	255.12	1.93	1.10E+00	1.09E-01	3.38E+00
		391.69	64.90	5.38E-02		1.09E-01

Analysis Report for 1606040-05
CP-5023 02-05

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	TE123M	159.00	84.10	1.61E-03	7.39E-02	7.39E-02
+	SB-124	602.71	97.87	3.33E-02	9.83E-02	9.83E-02
		645.85	7.26	-2.78E-01		1.27E+00
		722.78	11.10	2.82E-01		8.48E-01
		1691.02	49.00	9.48E-03		1.50E-01
+	I-125	35.49	6.49	-6.96E-01	2.84E+00	2.84E+00
+	SB-125	176.33	6.89	-2.90E-01	2.44E-01	8.05E-01
		427.89	29.33	9.15E-02		2.44E-01
		463.38	10.35	3.78E-01		8.28E-01
		600.56	17.80	9.90E-02		4.58E-01
		635.90	11.32	-2.67E-01		6.61E-01
+	SB-126	414.70	83.30	1.60E-02	1.63E-01	1.72E-01
		666.33	99.60	-7.36E-02		1.63E-01
		695.00	99.60	8.86E-02		1.84E-01
		720.50	53.80	3.68E-02		3.15E-01
+	SN-126	87.57	* 37.00	2.81E-01	1.99E-01	1.99E-01
+	SB-127	473.00	25.00	6.48E-02	2.46E+00	3.11E+00
		685.20	35.70	1.52E+00		2.46E+00
		783.80	14.70	1.96E+00		6.13E+00
+	I-129	29.78	57.00	-6.87E-01	5.63E-01	5.63E-01
		33.60	13.20	2.59E-01		1.55E+00
		39.58	7.52	3.04E-01		1.55E+00
+	I-131	284.30	6.05	-1.03E+00	2.22E-01	2.91E+00
		364.48	81.20	6.31E-02		2.22E-01
		636.97	7.26	1.07E+00		3.39E+00
		722.89	1.80	4.65E+00		1.40E+01
+	TE-132	49.72	13.10	2.45E+00	1.14E+00	1.09E+01
		228.16	88.00	9.31E-02		1.14E+00
+	BA-133	81.00	33.00	-9.12E-01	1.07E-01	2.25E-01
		302.84	17.80	2.26E-01		3.58E-01
		356.01	60.00	-3.58E-01		1.07E-01
+	I-133	529.87	86.30	-4.89E+01	3.21E+03	3.21E+03
+	XE-133	81.00	38.00	-4.50E+00	1.11E+00	1.11E+00
+	CS-134	563.23	8.38	5.67E-01	8.38E-02	9.53E-01
		569.32	15.43	-1.19E-02		4.90E-01
		604.70	97.60	7.19E-03		8.38E-02
		795.84	85.40	9.15E-02		1.11E-01
		801.93	8.73	-9.96E-01		7.84E-01
+	CS-135	268.24	16.00	5.27E-02	4.03E-01	4.03E-01
+	I-135	1131.51	22.50	-2.72E+13	9.01E+13	1.01E+14
		1260.41	28.60	4.69E+13		9.01E+13
		1678.03	9.54	-4.21E+13		1.82E+14
+	CS-136	153.22	7.46	-5.30E-01	1.61E-01	1.59E+00
		163.89	4.61	6.16E-01		2.42E+00
		176.55	13.56	-2.92E-01		8.11E-01
		273.65	12.66	-3.37E-02		1.01E+00
		340.57	48.50	7.25E-01		3.64E-01
		818.50	99.70	2.66E-02		1.61E-01
		1048.07	79.60	-6.43E-02		2.32E-01

Analysis Report for 1606040-05
CP-5023 02-05

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	CS-136	1235.34	19.70	1.08E-01	1.61E-01	1.13E+00
+	CS-137	661.65	85.12	-2.62E-02	9.24E-02	9.24E-02
+	LA-138	788.74	34.00	9.10E-02	1.00E-01	2.65E-01
		1435.80	66.00	-1.30E-02		1.00E-01
+	CE-139	165.85	80.35	2.26E-02	7.80E-02	7.80E-02
+	BA-140	162.64	6.70	-2.97E-01	5.60E-01	1.67E+00
		304.84	4.50	1.07E-01		2.45E+00
		423.70	3.20	-1.81E+00		4.20E+00
		437.55	2.00	3.63E+00		7.10E+00
		537.32	25.00	-2.59E-01		5.60E-01
+	LA-140	328.77	20.50	5.73E-01	1.52E-01	6.72E-01
		487.03	45.50	-2.71E-02		3.30E-01
		815.85	23.50	1.17E-01		6.62E-01
		1596.49	95.49	-3.89E-03		1.52E-01
+	CE-141	145.44	48.40	9.42E-02	1.60E-01	1.60E-01
+	CE-143	57.36	11.80	-3.45E+02	1.49E+02	5.00E+02
		293.26	42.00	1.47E+02		1.49E+02
		664.55	5.20	-9.47E+01		1.17E+03
+	CE-144	133.54	10.80	4.71E-02	5.47E-01	5.47E-01
+	PM-144	476.78	42.00	2.88E-02	7.85E-02	1.69E-01
		618.01	98.60	1.92E-02		7.85E-02
		696.49	99.49	6.79E-02		9.20E-02
+	PM-145	36.85	21.70	-1.13E-01	3.37E-01	6.37E-01
		37.36	39.70	-3.41E-01		3.37E-01
		42.30	15.10	2.52E-01		6.94E-01
		72.40	2.31	3.04E-02		3.39E+00
+	PM-146	453.90	39.94	-6.61E-02	1.65E-01	1.65E-01
		735.90	14.01	-1.82E-01		5.88E-01
		747.13	13.10	-3.06E-01		6.00E-01
+	ND-147	91.11	28.90	-2.60E+00	6.37E-01	6.37E-01
		531.02	13.10	2.25E-01		1.31E+00
+	PM-149	285.90	3.10	-3.11E+01	1.14E+02	1.14E+02
+	EU-152	121.78	20.50	-5.67E-02	2.61E-01	2.61E-01
		244.69	5.40	-1.29E-01		1.32E+00
		344.27	19.13	6.32E-02		3.12E-01
		778.89	9.20	6.55E-04		7.28E-01
		964.01	10.40	1.09E-01		1.07E+00
		1085.78	7.22	3.63E-01		1.15E+00
		1112.02	9.60	-6.26E-01		9.37E-01
		1407.95	14.94	-1.52E-01		3.73E-01
+	GD-153	97.43	31.30	-2.16E-01	1.90E-01	1.90E-01
		103.18	22.20	9.53E-02		2.55E-01
+	EU-154	123.07	40.50	-2.00E-02	1.34E-01	1.34E-01
		723.30	19.70	1.37E-01		4.12E-01
		873.19	11.50	-1.27E-01		7.22E-01
		996.32	10.30	-4.10E-01		8.11E-01
		1004.76	17.90	2.50E-01		5.47E-01
		1274.45	35.50	-1.09E-01		2.36E-01
+	EU-155	86.50	30.90	1.51E-01	2.55E-01	2.55E-01

Analysis Report for 1606040-05

CP-5023 02-05

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	EU-155	105.30	20.70	1.05E-01	2.55E-01	2.60E-01
+	EU-156	811.77	10.40	-2.43E-02	1.25E+00	1.25E+00
		1153.47	7.20	5.08E-01		2.57E+00
		1230.71	8.90	3.96E-01		2.10E+00
+	HO-166M	184.41	72.60	5.94E-02	1.05E-01	1.05E-01
		280.45	29.60	-1.16E-02		2.05E-01
		410.94	11.10	1.99E-01		6.65E-01
		711.69	54.10	3.29E-02		1.59E-01
+	TM-171	66.72	0.14	-7.27E+01	5.74E+01	5.74E+01
+	HF-172	81.75	4.52	-1.25E+00	4.92E-01	1.47E+00
		125.81	11.30	1.51E-02		4.92E-01
+	LU-172	181.53	20.60	4.78E-01	5.72E-01	1.09E+00
		810.06	16.63	1.21E-01		1.74E+00
		912.12	15.25	1.08E+01		4.24E+00
		1093.66	62.50	3.65E-01		5.72E-01
+	LU-173	100.72	5.24	9.79E-01	3.35E-01	1.11E+00
		272.11	21.20	2.90E-01		3.35E-01
+	HF-175	343.40	84.00	-1.39E-02	7.93E-02	7.93E-02
+	LU-176	88.34	13.30	2.88E-01	5.67E-02	5.95E-01
		201.83	86.00	-1.95E-02		7.03E-02
		306.78	94.00	-3.35E-03		5.67E-02
+	TA-182	67.75	41.20	-3.70E-01	1.95E-01	1.95E-01
		1121.30	34.90	5.21E-01		4.63E-01
		1189.05	16.23	3.91E-02		6.46E-01
		1221.41	26.98	1.31E-01		4.64E-01
		1231.02	11.44	1.83E-01		9.71E-01
+	IR-192	308.46	29.68	-1.64E-02	1.82E-01	2.08E-01
		468.07	48.10	6.96E-02		1.82E-01
+	HG-203	279.19	77.30	2.72E-02	9.95E-02	9.95E-02
+	BI-207	569.67	97.72	1.81E-02	8.03E-02	8.03E-02
		1063.62	74.90	5.71E-02		1.35E-01
+	TL-208	583.14	* 30.22	1.49E+00	2.32E-01	3.55E-01
		860.37	* 4.48	2.42E+00		3.11E+00
		2614.66	* 35.85	1.04E+00		2.32E-01
+	BI-210M	262.00	45.00	2.30E-02	1.32E-01	1.32E-01
		300.00	23.00	-7.73E-01		2.91E-01
+	PB-210	46.50	* 4.25	2.57E+00	3.01E+00	3.01E+00
+	PB-211	404.84	2.90	1.17E-01	2.15E+00	2.15E+00
		831.96	2.90	-1.85E+00		2.77E+00
+	BI-212	727.17	* 11.80	1.29E+00	1.15E+00	1.15E+00
		1620.62	2.75	-4.93E-01		2.43E+00
+	PB-212	238.63	44.60	1.38E+00	3.10E-01	3.10E-01
		300.09	3.41	-5.22E+00		1.96E+00
+	BI-214	609.31	* 46.30	1.21E+00	2.42E-01	2.42E-01
		1120.29	15.10	1.25E+00		9.91E-01
		1764.49	* 15.80	1.25E+00		3.36E-01
		2204.22	4.98	1.48E+00		2.29E+00
+	PB-214	295.21	* 19.19	1.34E+00	2.41E-01	6.32E-01

Analysis Report for 1606040-05
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	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	PB-214	351.92	*	37.19	1.25E+00	2.41E-01	2.41E-01
+	RN-219	401.80		6.50	1.54E-01	1.01E+00	1.01E+00
+	RA-223	323.87	*	3.88	8.87E-01	1.51E+00	1.51E+00
+	RA-224	240.98		3.95	2.15E+01	3.69E+00	3.69E+00
+	RA-225	40.00		31.00	1.33E-01	6.76E-01	6.76E-01
+	RA-226	186.21	*	3.28	4.59E+00	2.47E+00	2.47E+00
+	TH-227	50.10		8.40	2.30E-01	5.62E-01	1.02E+00
		236.00		11.50	-8.06E+00		5.62E-01
		256.20		6.30	-1.50E-01		9.42E-01
+	AC-228	338.32	*	11.40	1.69E+00	3.45E-01	8.42E-01
		911.07	*	27.70	1.51E+00		3.45E-01
		969.11	*	16.60	1.74E+00		1.14E+00
+	TH-230	48.44		16.90	6.64E-01	5.74E-01	5.74E-01
		62.85		4.60	3.40E+00		1.96E+00
		67.67		0.37	-3.80E+01		2.01E+01
+	PA-231	283.67		1.60	-6.24E-02	2.77E+00	3.64E+00
		302.67		2.30	1.74E+00		2.77E+00
+	TH-231	25.64		14.70	-2.71E+01	1.06E+00	6.18E+00
		84.21		6.40	9.52E-01		1.06E+00
+	PA-233	311.98		38.60	3.29E-03	2.01E-01	2.01E-01
+	PA-234	131.20		20.40	1.77E-01	2.94E-01	2.94E-01
		733.99		8.80	-4.56E-01		9.44E-01
		946.00		12.00	6.11E-01		8.18E-01
+	PA-234M	1001.03		0.92	5.61E+00	1.08E+01	1.08E+01
+	TH-234	63.29		3.80	4.31E+00	2.35E+00	2.35E+00
+	U-235	143.76		10.50	1.80E-01	5.51E-01	5.51E-01
		163.35		4.70	3.02E-01		1.18E+00
		205.31		4.70	7.84E-01		1.31E+00
+	NP-237	86.50		12.60	3.68E-01	6.23E-01	6.23E-01
+	NP-239	106.10		22.70	4.58E+00	1.13E+01	1.13E+01
		228.18		10.70	2.24E+00		2.74E+01
		277.60		14.10	1.10E+01		2.18E+01
+	AM-241	59.54		35.90	-7.23E-02	2.19E-01	2.19E-01
+	AM-243	74.67		66.00	-5.69E-01	1.44E-01	1.44E-01
+	CM-243	209.75		3.29	4.95E-01	4.59E-01	1.88E+00
		228.14		10.60	4.71E-02		5.77E-01
		277.60		14.00	2.32E-01		4.59E-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 1606040-05
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NUCLIDE MDA REPORT

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

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
BE-7	477.59	10.42	7.61E-01	7.61E-01	-3.77E-01	3.58E-01
NA-22	1274.54	99.94	8.43E-02	8.43E-02	-3.90E-02	3.79E-02
NA-24	1368.53	99.99	1.63E+05	2.64E+04	1.48E+04	7.18E+04
	2754.09	99.86	2.64E+04		0.00E+00	0.00E+00
AL-26	1808.65	99.76	6.26E-02	6.26E-02	-1.90E-02	2.60E-02
+ K-40	1460.81	* 10.67	1.24E+00	1.24E+00	2.14E+01	5.76E-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	7.87E-02	7.87E-02	-1.49E-01	3.84E-02
	78.34	96.00	1.05E-01		1.83E-01	5.16E-02
SC-46	889.25	99.98	9.12E-02	9.12E-02	-2.81E-02	4.20E-02
	1120.51	99.99	1.67E-01		2.10E-01	7.92E-02
V-48	983.52	99.98	1.44E-01	1.44E-01	-2.20E-02	6.60E-02
	1312.10	97.50	1.52E-01		1.81E-02	6.83E-02
CR-51	320.08	9.83	8.20E-01	8.20E-01	-3.31E-02	3.89E-01
MN-54	834.83	99.97	9.34E-02	9.34E-02	4.43E-02	4.36E-02
CO-56	846.75	99.96	8.66E-02	8.66E-02	7.91E-03	3.99E-02
	1037.75	14.03	6.57E-01		-6.07E-02	3.00E-01
	1238.25	67.00	2.10E-01		1.10E-01	9.84E-02
	1771.40	15.51	4.90E-01		5.10E-02	2.07E-01
	2598.48	16.90	2.20E-01		-9.95E-03	6.94E-02
CO-57	122.06	85.51	6.48E-02	6.48E-02	-1.41E-02	3.14E-02
	136.48	10.60	5.44E-01		2.31E-02	2.63E-01
CO-58	810.76	99.40	7.99E-02	7.99E-02	-1.94E-02	3.66E-02
FE-59	1099.22	56.50	1.79E-01	1.79E-01	-9.83E-02	8.16E-02
	1291.56	43.20	2.47E-01		5.31E-02	1.12E-01
CO-60	1173.22	100.00	1.13E-01	9.36E-02	1.31E-03	5.23E-02
	1332.49	100.00	9.36E-02		3.46E-02	4.24E-02
ZN-65	1115.52	50.75	2.00E-01	2.00E-01	1.89E-02	9.24E-02
+ GA-67	93.31	* 35.70	4.72E+00	4.72E+00	6.83E+00	2.32E+00
	208.95	2.24	4.63E+01		1.71E+01	2.23E+01
	300.22	* 16.00	1.25E+01		6.72E+00	6.09E+00
SE-75	121.11	16.70	3.45E-01	1.01E-01	-1.14E-02	1.67E-01
	136.00	59.20	1.01E-01		-9.25E-03	4.89E-02
	264.65	59.80	1.01E-01		-1.63E-02	4.83E-02
	279.53	25.20	2.79E-01		1.80E-01	1.34E-01
	400.65	11.40	6.02E-01		-3.41E-02	2.85E-01
RB-82	776.52	13.00	7.66E-01	7.66E-01	1.59E-03	3.52E-01
RB-83	520.41	46.00	1.71E-01	1.71E-01	-7.30E-03	8.06E-02
	529.64	30.30	2.75E-01		-4.18E-03	1.30E-01
	552.65	16.40	5.42E-01		2.57E-01	2.56E-01

Analysis Report for 1606040-05

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
KR-85	513.99	0.43	2.68E+01	2.68E+01	5.30E+01	1.29E+01
SR-85	513.99	99.27	1.34E-01	1.34E-01	2.66E-01	6.48E-02
Y-88	898.02	93.40	9.70E-02	5.70E-02	-1.57E-03	4.48E-02
	1836.01	99.38	5.70E-02		-8.70E-03	2.26E-02
NB-93M	16.57	9.43	7.24E+01	7.24E+01	-1.16E+02	3.32E+01
NB-94	702.63	100.00	8.94E-02	8.71E-02	2.27E-02	4.21E-02
	871.10	100.00	8.71E-02		1.12E-02	4.04E-02
NB-95	765.79	99.81	1.31E-01	1.31E-01	2.09E-02	6.18E-02
NB-95M	235.69	25.00	3.23E+00	3.23E+00	-4.63E+01	1.56E+00
ZR-95	724.18	43.70	2.32E-01	1.76E-01	5.28E-02	1.09E-01
	756.72	55.30	1.76E-01		-9.30E-03	8.23E-02
MO-99	181.06	6.20	2.61E+01	1.76E+01	1.56E+01	1.26E+01
	739.58	12.80	1.76E+01		6.27E+00	8.20E+00
	778.00	4.50	4.03E+01		3.67E-02	1.84E+01
RU-103	497.08	89.00	9.86E-02	9.86E-02	-5.26E-03	4.64E-02
RU-106	621.84	9.80	8.08E-01	8.08E-01	2.57E-01	3.79E-01
AG-108M	433.93	89.90	7.36E-02	7.36E-02	-7.99E-03	3.48E-02
	614.37	90.40	8.51E-02		-1.82E-02	4.00E-02
	722.95	90.50	8.94E-02		2.98E-02	4.18E-02
+ CD-109	88.03	* 3.72	2.02E+00	2.02E+00	2.85E+00	9.86E-01
AG-110M	657.75	93.14	8.42E-02	8.42E-02	-2.95E-02	3.93E-02
	677.61	10.53	7.52E-01		1.41E-01	3.51E-01
	706.67	16.46	5.31E-01		7.45E-03	2.49E-01
	763.93	21.98	4.15E-01		8.01E-02	1.94E-01
	884.67	71.63	1.27E-01		5.39E-02	5.87E-02
	1384.27	23.94	3.65E-01		-9.56E-02	1.63E-01
CD-113M	263.70	0.02	2.50E+02	2.50E+02	-5.06E-01	1.19E+02
SN-113	255.12	1.93	3.38E+00	1.09E-01	1.10E+00	1.62E+00
	391.69	64.90	1.09E-01		5.38E-02	5.19E-02
TE123M	159.00	84.10	7.39E-02	7.39E-02	1.61E-03	3.58E-02
SB-124	602.71	97.87	9.83E-02	9.83E-02	3.33E-02	4.64E-02
	645.85	7.26	1.27E+00		-2.78E-01	5.98E-01
	722.78	11.10	8.48E-01		2.82E-01	3.96E-01
	1691.02	49.00	1.50E-01		9.48E-03	6.27E-02
I-125	35.49	6.49	2.84E+00	2.84E+00	-6.96E-01	1.37E+00
SB-125	176.33	6.89	8.05E-01	2.44E-01	-2.90E-01	3.88E-01
	427.89	29.33	2.44E-01		9.15E-02	1.16E-01
	463.38	10.35	8.28E-01		3.78E-01	3.96E-01
	600.56	17.80	4.58E-01		9.90E-02	2.16E-01
	635.90	11.32	6.61E-01		-2.67E-01	3.09E-01
SB-126	414.70	83.30	1.72E-01	1.63E-01	1.60E-02	8.15E-02
	666.33	99.60	1.63E-01		-7.36E-02	7.64E-02
	695.00	99.60	1.84E-01		8.86E-02	8.64E-02
	720.50	53.80	3.15E-01		3.68E-02	1.47E-01
+ SN-126	87.57	* 37.00	1.99E-01	1.99E-01	2.81E-01	9.72E-02
SB-127	473.00	25.00	3.11E+00	2.46E+00	6.48E-02	1.47E+00
	685.20	35.70	2.46E+00		1.52E+00	1.15E+00
	783.80	14.70	6.13E+00		1.96E+00	2.86E+00
I-129	29.78	57.00	5.63E-01	5.63E-01	-6.87E-01	2.72E-01
	33.60	13.20	1.55E+00		2.59E-01	7.51E-01
	39.58	7.52	1.55E+00		3.04E-01	7.47E-01
I-131	284.30	6.05	2.91E+00	2.22E-01	-1.03E+00	1.39E+00
	364.48	81.20	2.22E-01		6.31E-02	1.05E-01

Analysis Report for 1606040-05

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
I-131	636.97	7.26	3.39E+00	2.22E-01	1.07E+00	1.59E+00
	722.89	1.80	1.40E+01		4.65E+00	6.52E+00
TE-132	49.72	13.10	1.09E+01	1.14E+00	2.45E+00	5.28E+00
	228.16	88.00	1.14E+00		9.31E-02	5.48E-01
BA-133	81.00	33.00	2.25E-01	1.07E-01	-9.12E-01	1.10E-01
	302.84	17.80	3.58E-01		2.26E-01	1.71E-01
	356.01	60.00	1.07E-01		-3.58E-01	5.10E-02
I-133	529.87	86.30	3.21E+03	3.21E+03	-4.89E+01	1.52E+03
XE-133	81.00	38.00	1.11E+00	1.11E+00	-4.50E+00	5.42E-01
CS-134	563.23	8.38	9.53E-01	8.38E-02	5.67E-01	4.50E-01
	569.32	15.43	4.90E-01		-1.19E-02	2.30E-01
	604.70	97.60	8.38E-02		7.19E-03	3.95E-02
	795.84	85.40	1.11E-01		9.15E-02	5.21E-02
	801.93	8.73	7.84E-01		-9.96E-01	3.58E-01
CS-135	268.24	16.00	4.03E-01	4.03E-01	5.27E-02	1.93E-01
I-135	1131.51	22.50	1.01E+14	9.01E+13	-2.72E+13	4.66E+13
	1260.41	28.60	9.01E+13		4.69E+13	4.16E+13
	1678.03	9.54	1.82E+14		-4.21E+13	7.85E+13
CS-136	153.22	7.46	1.59E+00	1.61E-01	-5.30E-01	7.70E-01
	163.89	4.61	2.42E+00		6.16E-01	1.17E+00
	176.55	13.56	8.11E-01		-2.92E-01	3.91E-01
	273.65	12.66	1.01E+00		-3.37E-02	4.82E-01
	340.57	48.50	3.64E-01		7.25E-01	1.76E-01
	818.50	99.70	1.61E-01		2.66E-02	7.44E-02
	1048.07	79.60	2.32E-01		-6.43E-02	1.07E-01
	1235.34	19.70	1.13E+00		1.08E-01	5.21E-01
CS-137	661.65	85.12	9.24E-02	9.24E-02	-2.62E-02	4.32E-02
LA-138	788.74	34.00	2.65E-01	1.00E-01	9.10E-02	1.24E-01
	1435.80	66.00	1.00E-01		-1.30E-02	4.31E-02
CE-139	165.85	80.35	7.80E-02	7.80E-02	2.26E-02	3.77E-02
BA-140	162.64	6.70	1.67E+00	5.60E-01	-2.97E-01	8.05E-01
	304.84	4.50	2.45E+00		1.07E-01	1.16E+00
	423.70	3.20	4.20E+00		-1.81E+00	1.99E+00
	437.55	2.00	7.10E+00		3.63E+00	3.36E+00
	537.32	25.00	5.60E-01		-2.59E-01	2.62E-01
LA-140	328.77	20.50	6.72E-01	1.52E-01	5.73E-01	3.21E-01
	487.03	45.50	3.30E-01		-2.71E-02	1.56E-01
	815.85	23.50	6.62E-01		1.17E-01	3.06E-01
	1596.49	95.49	1.52E-01		-3.89E-03	6.53E-02
CE-141	145.44	48.40	1.60E-01	1.60E-01	9.42E-02	7.74E-02
CE-143	57.36	11.80	5.00E+02	1.49E+02	-3.45E+02	2.43E+02
	293.26	42.00	1.49E+02		1.47E+02	7.22E+01
	664.55	5.20	1.17E+03		-9.47E+01	5.49E+02
CE-144	133.54	10.80	5.47E-01	5.47E-01	4.71E-02	2.65E-01
PM-144	476.78	42.00	1.69E-01	7.85E-02	2.88E-02	7.97E-02
	618.01	98.60	7.85E-02		1.92E-02	3.68E-02
	696.49	99.49	9.20E-02		6.79E-02	4.33E-02
PM-145	36.85	21.70	6.37E-01	3.37E-01	-1.13E-01	3.07E-01
	37.36	39.70	3.37E-01		-3.41E-01	1.63E-01
	42.30	15.10	6.94E-01		2.52E-01	3.36E-01
	72.40	2.31	3.39E+00		3.04E-02	1.66E+00
PM-146	453.90	39.94	1.65E-01	1.65E-01	-6.61E-02	7.79E-02
	735.90	14.01	5.88E-01		-1.82E-01	2.75E-01

Analysis Report for 1606040-05
CP-5023 02-05

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
PM-146	747.13	13.10	6.00E-01	1.65E-01	-3.06E-01	2.79E-01
ND-147	91.11	28.90	6.37E-01	6.37E-01	-2.60E+00	3.12E-01
	531.02	13.10	1.31E+00		2.25E-01	6.20E-01
PM-149	285.90	3.10	1.14E+02	1.14E+02	-3.11E+01	5.44E+01
EU-152	121.78	20.50	2.61E-01	2.61E-01	-5.67E-02	1.27E-01
	244.69	5.40	1.32E+00		-1.29E-01	6.37E-01
	344.27	19.13	3.12E-01		6.32E-02	1.48E-01
	778.89	9.20	7.28E-01		6.55E-04	3.33E-01
	964.01	10.40	1.07E+00		1.09E-01	5.00E-01
	1085.78	7.22	1.15E+00		3.63E-01	5.24E-01
	1112.02	9.60	9.37E-01		-6.26E-01	4.29E-01
	1407.95	14.94	3.73E-01		-1.52E-01	1.56E-01
GD-153	97.43	31.30	1.90E-01	1.90E-01	-2.16E-01	9.22E-02
	103.18	22.20	2.55E-01		9.53E-02	1.24E-01
EU-154	123.07	40.50	1.34E-01	1.34E-01	-2.00E-02	6.48E-02
	723.30	19.70	4.12E-01		1.37E-01	1.92E-01
	873.19	11.50	7.22E-01		-1.27E-01	3.34E-01
	996.32	10.30	8.11E-01		-4.10E-01	3.72E-01
	1004.76	17.90	5.47E-01		2.50E-01	2.54E-01
	1274.45	35.50	2.36E-01		-1.09E-01	1.06E-01
EU-155	86.50	30.90	2.55E-01	2.55E-01	1.51E-01	1.25E-01
	105.30	20.70	2.60E-01		1.05E-01	1.26E-01
EU-156	811.77	10.40	1.25E+00	1.25E+00	-2.43E-02	5.75E-01
	1153.47	7.20	2.57E+00		5.08E-01	1.19E+00
	1230.71	8.90	2.10E+00		3.96E-01	9.66E-01
HO-166M	184.41	72.60	1.05E-01	1.05E-01	5.94E-02	5.11E-02
	280.45	29.60	2.05E-01		-1.16E-02	9.78E-02
	410.94	11.10	6.65E-01		1.99E-01	3.17E-01
	711.69	54.10	1.59E-01		3.29E-02	7.44E-02
TM-171	66.72	0.14	5.74E+01	5.74E+01	-7.27E+01	2.80E+01
HF-172	81.75	4.52	1.47E+00	4.92E-01	-1.25E+00	7.17E-01
	125.81	11.30	4.92E-01		1.51E-02	2.38E-01
LU-172	181.53	20.60	1.09E+00	5.72E-01	4.78E-01	5.28E-01
	810.06	16.63	1.74E+00		1.21E-01	8.03E-01
	912.12	15.25	4.24E+00		1.08E+01	2.04E+00
	1093.66	62.50	5.72E-01		3.65E-01	2.62E-01
LU-173	100.72	5.24	1.11E+00	3.35E-01	9.79E-01	5.38E-01
	272.11	21.20	3.35E-01		2.90E-01	1.61E-01
HF-175	343.40	84.00	7.93E-02	7.93E-02	-1.39E-02	3.76E-02
LU-176	88.34	13.30	5.95E-01	5.67E-02	2.88E-01	2.91E-01
	201.83	86.00	7.03E-02		-1.95E-02	3.39E-02
	306.78	94.00	5.67E-02		-3.35E-03	2.69E-02
TA-182	67.75	41.20	1.95E-01	1.95E-01	-3.70E-01	9.54E-02
	1121.30	34.90	4.63E-01		5.21E-01	2.20E-01
	1189.05	16.23	6.46E-01		3.91E-02	2.96E-01
	1221.41	26.98	4.64E-01		1.31E-01	2.16E-01
	1231.02	11.44	9.71E-01		1.83E-01	4.47E-01
IR-192	308.46	29.68	2.08E-01	1.82E-01	-1.64E-02	9.88E-02
	468.07	48.10	1.82E-01		6.96E-02	8.65E-02
HG-203	279.19	77.30	9.95E-02	9.95E-02	2.72E-02	4.76E-02
BI-207	569.67	97.72	8.03E-02	8.03E-02	1.81E-02	3.79E-02
	1063.62	74.90	1.35E-01		5.71E-02	6.28E-02
+ TL-208	583.14	* 30.22	3.55E-01	2.32E-01	1.49E+00	1.70E-01

Analysis Report for 1606040-05
CP-5023 02-05

Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
TL-208	860.37	*	4.48	3.11E+00	2.32E-01	2.42E+00	1.48E+00
	2614.66	*	35.85	2.32E-01		1.04E+00	9.92E-02
BI-210M	262.00		45.00	1.32E-01	1.32E-01	2.30E-02	6.34E-02
	300.00		23.00	2.91E-01		-7.73E-01	1.39E-01
+ PB-210	46.50	*	4.25	3.01E+00	3.01E+00	2.57E+00	1.47E+00
PB-211	404.84		2.90	2.15E+00	2.15E+00	1.17E-01	1.01E+00
	831.96		2.90	2.77E+00		-1.85E+00	1.28E+00
+ BI-212	727.17	*	11.80	1.15E+00	1.15E+00	1.29E+00	5.54E-01
	1620.62		2.75	2.43E+00		-4.93E-01	1.03E+00
PB-212	238.63		44.60	3.10E-01	3.10E-01	1.38E+00	1.52E-01
	300.09		3.41	1.96E+00		-5.22E+00	9.41E-01
+ BI-214	609.31	*	46.30	2.42E-01	2.42E-01	1.21E+00	1.16E-01
	1120.29		15.10	9.91E-01		1.25E+00	4.70E-01
	1764.49	*	15.80	3.36E-01		1.25E+00	1.35E-01
	2204.22		4.98	2.29E+00		1.48E+00	1.03E+00
+ PB-214	295.21	*	19.19	6.32E-01	2.41E-01	1.34E+00	3.09E-01
	351.92	*	37.19	2.41E-01		1.25E+00	1.16E-01
RN-219	401.80		6.50	1.01E+00	1.01E+00	1.54E-01	4.81E-01
+ RA-223	323.87	*	3.88	1.51E+00	1.51E+00	8.87E-01	7.17E-01
RA-224	240.98		3.95	3.69E+00	3.69E+00	2.15E+01	1.82E+00
RA-225	40.00		31.00	6.76E-01	6.76E-01	1.33E-01	3.27E-01
+ RA-226	186.21	*	3.28	2.47E+00	2.47E+00	4.59E+00	1.20E+00
TH-227	50.10		8.40	1.02E+00	5.62E-01	2.30E-01	4.96E-01
	236.00		11.50	5.62E-01		-8.06E+00	2.71E-01
	256.20		6.30	9.42E-01		-1.50E-01	4.51E-01
+ AC-228	338.32	*	11.40	8.42E-01	3.45E-01	1.69E+00	4.08E-01
	911.07	*	27.70	3.45E-01		1.51E+00	1.61E-01
	969.11	*	16.60	1.14E+00		1.74E+00	5.50E-01
TH-230	48.44		16.90	5.74E-01	5.74E-01	6.64E-01	2.79E-01
	62.85		4.60	1.96E+00		3.40E+00	9.61E-01
	67.67		0.37	2.01E+01		-3.80E+01	9.82E+00
PA-231	283.67		1.60	3.64E+00	2.77E+00	-6.24E-02	1.74E+00
	302.67		2.30	2.77E+00		1.74E+00	1.32E+00
TH-231	25.64		14.70	6.18E+00	1.06E+00	-2.71E+01	3.02E+00
	84.21		6.40	1.06E+00		9.52E-01	5.20E-01
PA-233	311.98		38.60	2.01E-01	2.01E-01	3.29E-03	9.53E-02
PA-234	131.20		20.40	2.94E-01	2.94E-01	1.77E-01	1.43E-01
	733.99		8.80	9.44E-01		-4.56E-01	4.41E-01
	946.00		12.00	8.18E-01		6.11E-01	3.81E-01
PA-234M	1001.03		0.92	1.08E+01	1.08E+01	5.61E+00	5.04E+00
TH-234	63.29		3.80	2.35E+00	2.35E+00	4.31E+00	1.15E+00
U-235	143.76		10.50	5.51E-01	5.51E-01	1.80E-01	2.67E-01
	163.35		4.70	1.18E+00		3.02E-01	5.72E-01
	205.31		4.70	1.31E+00		7.84E-01	6.32E-01
NP-237	86.50		12.60	6.23E-01	6.23E-01	3.68E-01	3.05E-01
NP-239	106.10		22.70	1.13E+01	1.13E+01	4.58E+00	5.49E+00
	228.18		10.70	2.74E+01		2.24E+00	1.32E+01
	277.60		14.10	2.18E+01		1.10E+01	1.05E+01
AM-241	59.54		35.90	2.19E-01	2.19E-01	-7.23E-02	1.07E-01
AM-243	74.67		66.00	1.44E-01	1.44E-01	-5.69E-01	7.06E-02
CM-243	209.75		3.29	1.88E+00	4.59E-01	4.95E-01	9.08E-01
	228.14		10.60	5.77E-01		4.71E-02	2.78E-01
	277.60		14.00	4.59E-01		2.32E-01	2.20E-01

Analysis Report for 1606040-05
CP-5023 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

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

369: 16 27 22 22 19 18 15 17

Sample Title: CP-5023 02-05

Channel	1	2	3	4	5	6	7	8
377:	24	23	25	20	16	17	10	13
385:	18	24	20	20	15	29	25	17
393:	28	16	18	18	21	20	15	21
401:	24	26	18	23	21	25	11	11
409:	20	29	31	17	14	15	10	23
417:	19	18	14	21	14	11	14	16
425:	22	13	13	17	19	19	16	16
433:	11	9	15	18	15	10	14	21
441:	17	12	15	15	16	16	7	28
449:	16	11	13	14	11	19	14	9
457:	12	17	18	19	12	19	27	43
465:	21	11	20	16	19	13	24	11
473:	15	19	11	14	13	14	12	12
481:	12	12	18	19	13	14	15	16
489:	17	11	18	14	15	10	7	11
497:	15	18	14	15	13	11	10	11
505:	17	14	10	14	16	22	70	85
513:	30	18	20	14	12	15	10	11
521:	13	15	14	9	15	10	17	14
529:	9	19	10	11	15	17	12	11
537:	15	9	12	12	6	13	12	8
545:	9	12	10	11	12	12	16	18
553:	15	21	12	8	13	9	12	18
561:	11	13	15	15	13	11	8	10
569:	8	17	15	15	20	9	14	10
577:	10	12	14	7	14	13	65	165
585:	68	22	9	15	10	6	6	8
593:	13	8	16	9	12	11	10	13
601:	15	7	15	20	11	14	8	15
609:	76	190	90	18	12	11	11	15
617:	8	4	16	8	13	7	8	10
625:	16	10	13	8	10	17	15	10
633:	3	10	13	8	12	15	8	13
641:	11	12	7	5	12	16	9	16
649:	13	18	9	10	7	15	5	9
657:	8	14	7	13	12	10	15	6
665:	10	13	13	9	5	16	12	5
673:	16	5	12	10	6	16	9	7
681:	6	7	7	14	13	15	10	10
689:	5	10	8	7	8	16	12	14
697:	12	16	11	7	9	18	15	12
705:	19	7	10	7	11	10	11	8
713:	10	12	16	9	13	8	8	10
721:	12	13	10	7	6	9	23	42
729:	28	10	10	8	9	8	17	13
737:	4	2	14	16	10	9	11	14
745:	11	5	5	3	15	6	14	10
753:	13	13	5	13	8	11	12	6
761:	11	7	12	13	11	6	13	8
769:	34	11	9	10	21	11	3	5
777:	5	9	6	4	6	4	6	8
785:	10	20	10	10	10	8	4	11
793:	8	8	16	23	12	7	4	7

801: 3 7 4 6 7 17 8 6

Sample Title: CP-5023 02-05

Channel	1	2	3	4	5	6	7	8	9
809:	11	9	0	3	9	2	8	9	
817:	4	9	7	8	11	5	7	9	
825:	8	6	5	8	7	7	5	6	
833:	8	5	14	17	13	4	7	8	
841:	13	8	6	8	3	11	5	6	
849:	8	5	6	5	4	12	8	8	
857:	5	3	5	11	22	17	10	2	
865:	7	12	4	11	9	1	8	7	
873:	10	11	8	6	6	7	7	3	
881:	9	10	6	10	5	6	10	9	
889:	4	7	5	7	10	8	5	9	
897:	6	5	9	7	8	6	5	7	
905:	13	8	3	8	4	13	47	85	
913:	43	11	3	2	4	7	8	7	
921:	4	9	6	6	6	3	5	5	
929:	10	8	11	7	9	10	12	6	
937:	6	6	4	6	4	4	6	10	
945:	14	15	5	2	12	6	5	5	
953:	10	7	8	7	10	3	7	6	
961:	9	10	5	10	17	20	9	11	
969:	50	52	23	9	8	8	5	7	
977:	6	4	9	10	8	10	7	4	
985:	6	2	3	5	5	4	7	10	
993:	4	10	8	2	4	7	6	4	
1001:	12	18	7	6	6	10	3	7	
1009:	7	2	2	8	3	7	5	9	
1017:	9	6	9	5	4	3	8	5	
1025:	6	5	2	3	5	9	5	10	
1033:	5	7	5	7	9	2	4	6	
1041:	4	5	6	9	9	6	3	7	
1049:	10	9	3	11	6	7	9	5	
1057:	6	2	8	4	5	8	7	9	
1065:	10	5	12	6	5	8	6	9	
1073:	6	5	4	0	6	6	4	11	
1081:	5	5	11	5	3	6	3	5	
1089:	2	1	5	4	7	4	11	7	
1097:	5	6	3	3	6	4	6	8	
1105:	5	5	8	9	7	2	10	4	
1113:	2	10	5	10	8	2	11	24	
1121:	36	23	14	7	7	8	8	11	
1129:	5	7	7	3	4	8	5	6	
1137:	3	4	6	8	5	5	5	10	
1145:	5	6	5	5	5	7	3	8	
1153:	4	7	8	12	7	7	10	5	
1161:	7	6	3	5	12	4	8	7	
1169:	8	7	10	10	8	9	5	10	
1177:	10	8	5	6	6	6	6	6	
1185:	8	2	4	10	5	6	10	5	
1193:	6	3	3	4	6	2	2	13	
1201:	10	5	5	6	3	8	11	9	
1209:	9	5	6	11	9	8	6	6	
1217:	6	7	13	9	7	6	8	9	
1225:	7	8	8	5	5	9	7	6	

1233: 5 8 3 4 12 15 21 10

Sample Title: CP-5023 02-05

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1241:	4	7	7	5	12	5	7	6
1249:	2	6	4	5	8	3	8	2
1257:	8	8	13	3	6	4	7	5
1265:	3	1	6	6	5	4	5	2
1273:	4	3	5	5	3	5	8	6
1281:	7	6	8	3	2	3	3	5
1289:	4	4	4	3	5	4	4	3
1297:	8	2	7	7	5	1	3	2
1305:	4	4	3	2	3	4	2	5
1313:	1	4	7	8	0	10	1	5
1321:	3	6	2	4	3	6	5	4
1329:	4	5	4	6	6	4	3	1
1337:	3	3	4	3	4	3	3	4
1345:	4	3	3	0	4	3	3	2
1353:	4	1	4	2	0	3	3	4
1361:	5	5	1	2	4	4	2	3
1369:	2	2	2	4	1	1	2	3
1377:	6	8	8	3	3	2	0	3
1385:	5	4	7	4	2	1	3	3
1393:	2	2	4	4	4	4	6	0
1401:	4	7	2	2	1	0	1	4
1409:	0	1	2	2	3	2	1	4
1417:	2	5	4	4	1	1	2	4
1425:	2	3	2	7	1	3	3	2
1433:	1	2	3	2	0	4	1	2
1441:	2	4	1	2	0	2	1	3
1449:	2	0	2	2	2	2	2	4
1457:	5	5	11	93	253	253	57	6
1465:	3	4	0	3	2	2	1	3
1473:	3	2	3	1	3	3	3	1
1481:	1	1	2	1	1	3	2	3
1489:	0	4	1	1	2	2	4	5
1497:	2	1	3	0	3	3	4	2
1505:	2	2	1	0	4	1	4	1
1513:	2	5	3	1	1	1	0	1
1521:	0	1	2	1	1	0	2	1
1529:	2	1	3	1	1	1	1	0
1537:	3	0	0	4	0	0	1	0
1545:	4	2	1	1	1	0	1	0
1553:	0	1	1	0	5	1	1	4
1561:	1	3	4	1	0	1	5	0
1569:	0	1	0	2	1	1	2	3
1577:	2	1	2	1	2	4	4	3
1585:	2	1	2	9	5	3	2	4
1593:	5	5	1	0	0	0	2	2
1601:	1	1	2	2	1	1	2	1
1609:	0	2	0	2	2	1	2	1
1617:	1	2	1	3	2	2	0	0
1625:	5	1	2	0	1	1	5	2
1633:	0	0	1	1	0	2	2	2
1641:	1	0	1	2	1	1	2	2
1649:	2	1	2	2	1	1	3	2
1657:	2	2	0	2	5	3	3	1

1665: 0 2 3 2 1 0 1 1

Sample Title: CP-5023 02-05

Channel	1	2	3	4	5	6	7	8
1673:	1	4	1	3	1	1	4	2
1681:	1	4	1	0	0	0	1	1
1689:	3	1	1	1	1	1	0	3
1697:	3	0	1	1	1	0	1	0
1705:	1	1	3	1	2	1	1	0
1713:	0	1	4	0	4	0	0	0
1721:	1	1	2	0	1	2	1	0
1729:	2	6	4	2	0	0	2	1
1737:	1	1	0	1	0	3	1	2
1745:	2	0	2	0	0	0	0	1
1753:	0	1	0	0	0	2	0	0
1761:	1	0	6	13	18	13	2	2
1769:	0	1	1	2	0	4	2	1
1777:	1	1	3	2	2	0	1	0
1785:	2	0	1	2	1	0	1	0
1793:	1	1	0	1	0	2	1	0
1801:	0	0	0	2	1	1	2	1
1809:	0	1	2	4	1	0	1	0
1817:	0	3	3	0	0	3	1	2
1825:	0	2	1	2	2	0	1	1
1833:	2	1	0	1	0	1	0	2
1841:	0	0	0	1	3	2	2	8
1849:	1	2	0	1	0	2	0	1
1857:	0	1	1	0	1	1	0	2
1865:	1	1	0	0	1	4	1	0
1873:	2	0	3	0	0	0	2	0
1881:	0	2	1	2	0	1	1	3
1889:	0	0	2	3	2	1	0	3
1897:	1	1	2	1	1	1	2	0
1905:	0	0	0	1	1	0	2	2
1913:	1	3	1	1	1	0	0	2
1921:	1	1	1	2	1	2	2	1
1929:	1	4	2	2	0	2	1	1
1937:	1	0	2	0	0	0	5	2
1945:	2	0	1	0	1	0	1	3
1953:	1	0	1	1	0	0	0	4
1961:	0	1	1	1	1	0	1	0
1969:	1	1	0	0	0	1	0	4
1977:	2	0	1	0	0	0	0	0
1985:	1	0	0	0	2	2	1	1
1993:	3	1	2	3	1	1	2	2
2001:	0	1	0	1	0	1	2	2
2009:	1	0	3	2	0	1	3	1
2017:	1	1	0	0	2	1	0	1
2025:	1	1	0	1	1	1	1	1
2033:	0	3	2	2	0	0	1	0
2041:	0	2	0	3	0	0	1	0
2049:	0	2	3	3	0	2	0	0
2057:	1	2	0	1	1	0	0	1
2065:	0	0	0	2	0	0	0	1
2073:	1	0	1	2	0	1	1	0
2081:	1	0	2	2	2	0	0	0
2089:	2	0	0	1	1	2	1	3

2097: 2 1 0 1 2 4 2 5

Sample Title: CP-5023 02-05

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

2529: 0 0 0 0 0 0 1 0

Sample Title: CP-5023 02-05

Channel	-----	-----	-----	-----	-----	-----	-----	-----
2537:	2	0	0	0	0	1	2	1
2545:	1	0	0	1	0	0	2	0
2553:	0	0	0	1	1	0	0	0
2561:	0	0	0	1	0	0	0	1
2569:	2	0	0	1	0	0	0	2
2577:	0	0	0	0	0	0	0	0
2585:	0	0	0	1	1	0	0	1
2593:	0	0	0	0	0	1	0	0
2601:	0	0	0	0	0	0	0	2
2609:	0	1	1	4	19	27	28	9
2617:	4	0	0	0	0	0	0	0
2625:	0	0	0	0	0	1	0	2
2633:	0	1	0	0	0	0	0	0
2641:	1	0	0	1	1	0	0	0
2649:	0	0	2	0	2	0	0	0
2657:	0	0	0	0	1	0	1	0
2665:	0	1	0	0	1	1	0	0
2673:	0	2	0	1	0	0	0	1
2681:	0	0	2	0	1	2	2	0
2689:	0	0	0	0	0	1	0	0
2697:	0	0	0	0	0	0	0	0
2705:	0	0	1	1	0	0	0	1
2713:	0	1	1	0	0	0	2	0
2721:	0	0	1	0	0	0	0	0
2729:	1	0	1	0	0	2	0	0
2737:	1	0	0	0	0	0	1	0
2745:	1	0	0	0	0	0	0	0
2753:	0	0	0	0	0	1	0	0
2761:	0	0	0	0	0	0	0	0
2769:	1	1	1	0	0	1	0	1
2777:	0	1	0	0	0	0	0	1
2785:	0	0	0	0	0	0	0	0
2793:	0	0	0	0	1	0	0	0
2801:	0	0	1	0	0	0	1	0
2809:	1	1	0	0	0	0	0	0
2817:	1	0	0	0	0	1	1	0
2825:	0	0	0	0	0	0	1	0
2833:	0	0	0	0	1	0	0	0
2841:	0	0	0	0	0	0	0	0
2849:	0	1	0	0	1	0	0	0
2857:	0	1	0	0	0	1	0	0
2865:	2	0	0	1	0	1	0	0
2873:	0	0	1	0	0	1	0	0
2881:	0	0	0	0	0	1	2	0
2889:	0	0	0	1	0	0	0	0
2897:	0	0	0	0	0	0	0	0
2905:	2	0	1	0	1	0	0	0
2913:	0	1	1	0	0	0	0	0
2921:	1	1	0	0	1	0	0	1
2929:	0	0	1	0	0	0	1	0
2937:	0	0	1	0	0	0	0	0
2945:	2	0	0	0	0	0	1	2
2953:	1	0	0	0	0	0	0	0

2961: 0 0 0 0 0 0 0 0

Sample Title: CP-5023 02-05

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

3393: 0 0 0 0 0 0 0 0

Sample Title: CP-5023 02-05

Channel	-----	-----	-----	-----	-----	-----	-----	-----
3401:	0	0	0	0	0	0	0	0
3409:	0	0	0	0	0	0	0	1
3417:	0	0	0	1	0	0	0	0
3425:	0	0	0	0	0	1	0	0
3433:	0	0	0	0	0	0	0	0
3441:	0	0	0	0	0	0	0	1
3449:	0	0	0	0	0	1	1	0
3457:	0	0	0	1	1	0	0	0
3465:	0	0	0	0	0	0	1	0
3473:	0	0	0	0	1	0	0	1
3481:	1	0	0	0	0	0	0	0
3489:	1	0	0	0	0	0	0	0
3497:	0	0	1	0	0	0	0	0
3505:	0	1	0	0	1	0	0	1
3513:	0	0	0	1	0	0	0	0
3521:	0	0	1	0	0	0	0	0
3529:	0	0	0	0	0	0	0	0
3537:	0	0	1	1	0	1	0	1
3545:	1	1	0	1	0	0	0	0
3553:	0	0	0	1	0	0	0	0
3561:	0	1	0	0	0	1	0	1
3569:	0	1	0	0	0	0	0	0
3577:	0	0	0	0	0	1	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	0	0	0
3609:	0	0	0	0	0	0	0	0
3617:	0	0	0	1	0	0	0	0
3625:	0	1	0	0	0	0	0	0
3633:	1	0	0	0	0	0	0	0
3641:	1	0	0	1	0	0	0	0
3649:	0	0	0	0	1	0	1	0
3657:	1	0	0	0	1	2	1	0
3665:	0	0	0	0	0	0	0	1
3673:	0	0	1	1	0	0	0	1
3681:	0	0	0	0	0	0	0	0
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	0
3713:	0	0	0	0	0	0	0	1
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	0
3745:	0	0	0	0	0	0	1	0
3753:	0	0	0	0	0	0	0	0
3761:	0	0	0	0	0	0	0	1
3769:	0	1	0	0	0	0	0	0
3777:	1	0	0	0	0	0	0	0
3785:	0	0	0	0	1	1	0	0
3793:	0	0	0	0	1	0	0	0
3801:	1	0	0	0	0	2	0	0
3809:	0	0	0	0	0	1	0	0
3817:	0	0	1	0	0	0	0	0

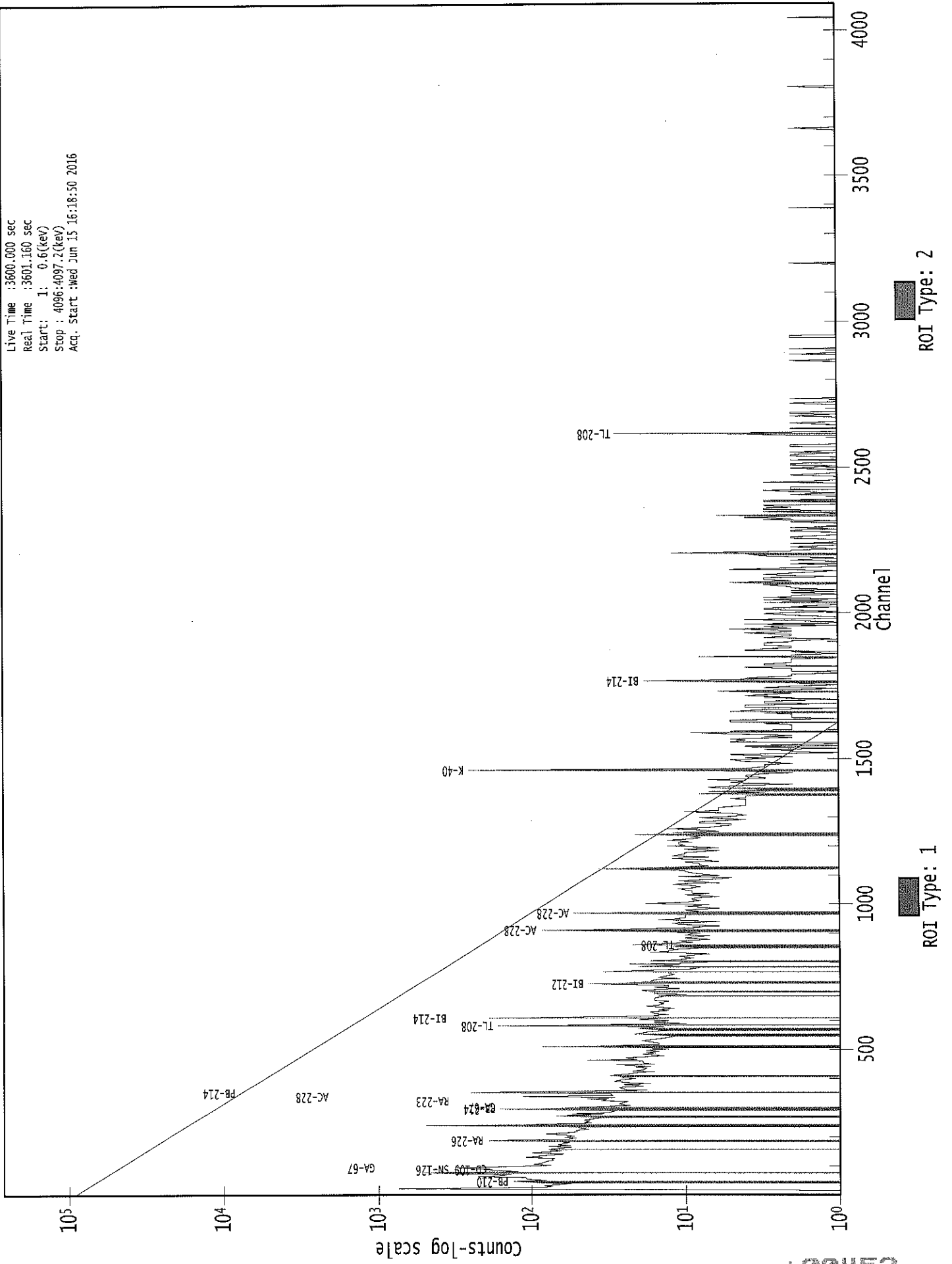
3825: 0 0 0 0 0 0 0 0

Sample Title: CP-5023 02-05

Channel								
3833:	0	0	0	0	0	0	0	0
3841:	0	0	0	0	0	0	1	0
3849:	0	0	1	0	1	0	1	1
3857:	0	0	0	0	0	0	0	1
3865:	0	0	0	0	0	0	0	1
3873:	0	0	1	0	0	0	0	0
3881:	0	0	0	0	0	0	0	1
3889:	0	0	0	0	0	0	0	1
3897:	0	0	0	0	0	0	0	0
3905:	0	1	0	0	0	1	0	0
3913:	0	0	0	0	0	0	0	0
3921:	0	1	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	1	0	0	0	0	0
3953:	0	0	1	0	0	0	0	0
3961:	0	0	0	0	0	0	0	0
3969:	0	0	0	0	0	0	0	0
3977:	1	0	0	0	0	0	0	0
3985:	0	0	0	0	0	1	1	1
3993:	0	1	0	0	0	0	0	0
4001:	0	0	0	0	0	1	0	0
4009:	1	0	0	0	0	0	0	0
4017:	0	0	0	0	0	0	1	0
4025:	1	1	0	0	0	1	0	0
4033:	1	0	0	0	0	0	0	0
4041:	0	0	2	0	0	0	1	0
4049:	0	1	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	0	0	0	0	0	0
4081:	0	0	0	0	0	0	0	0
4089:	0	0	1	0	0	0	0	0

0000038943.CNF

Live Time :3600.000 sec
Real Time :3601.160 sec
Start: I: 0.6(keV)
Stop : 4096:4097.2(keV)
Acq. Start :Wed Jun 15 16:18:50 2016



KB
6/15/16Analysis Report for 1606040-06
CP-5023 05-10

GAMMA SPECTRUM ANALYSIS

Sample Identification : 1606040-06
Sample Description : CP-5023 05-10
Sample Type : SOIL

Sample Size : 3.787E+02 grams
Facility : Countroom

Sample Taken On : 6/2/2016 1:09:48PM
Acquisition Started : 6/15/2016 4:20:20PM

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 : 38944

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
6/16/16

Analysis Report for 1606040-06
CP-5023 05-10

PEAK LOCATE REPORT

Peak Locate Performed on : 6/15/2016 5:20:44PM
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	12.93	13.06	0.0000	0.00
2	46.45	46.56	0.0000	0.00
3	63.59	63.69	0.0000	0.00
4	76.44	76.53	0.0000	0.00
5	90.13	90.21	0.0000	0.00
6	93.14	93.21	0.0000	0.00
7	128.37	128.43	0.0000	0.00
8	143.44	143.49	0.0000	0.00
9	185.98	186.01	0.0000	0.00
10	209.41	209.43	0.0000	0.00
11	236.13	236.13	0.0000	0.00
12	239.13	239.13	0.0000	0.00
13	295.23	295.20	0.0000	0.00
14	300.87	300.83	0.0000	0.00
15	328.06	328.01	0.0000	0.00
16	338.43	338.37	0.0000	0.00
17	351.96	351.90	0.0000	0.00
18	462.83	462.71	0.0000	0.00
19	510.94	510.79	0.0000	0.00
20	579.06	578.88	0.0000	0.00
21	583.43	583.25	0.0000	0.00
22	609.62	609.43	0.0000	0.00
23	652.53	652.32	0.0000	0.00
24	785.49	785.21	0.0000	0.00
25	795.49	795.21	0.0000	0.00
26	861.18	860.87	0.0000	0.00
27	911.89	911.57	0.0000	0.00
28	969.61	969.27	0.0000	0.00
29	1120.27	1119.86	0.0000	0.00
30	1201.89	1201.45	0.0000	0.00
31	1206.89	1206.45	0.0000	0.00
32	1239.19	1238.74	0.0000	0.00
33	1270.33	1269.87	0.0000	0.00
34	1328.35	1327.87	0.0000	0.00
35	1417.61	1417.10	0.0000	0.00
36	1461.36	1460.84	0.0000	0.00
37	1497.07	1496.54	0.0000	0.00
38	1588.06	1587.50	0.0000	0.00
39	1593.06	1592.50	0.0000	0.00
40	1607.47	1606.90	0.0000	0.00
41	1623.97	1623.40	0.0000	0.00
42	1630.37	1629.80	0.0000	0.00

Analysis Report for 1606040-06
CP-5023 05-10

<i>Peak No.</i>	<i>Energy (keV)</i>	<i>Centroid Channel</i>	<i>Centroid Uncertainty</i>	<i>Peak Significance</i>
43	1636.42	1635.85	0.0000	0.00
44	1697.90	1697.31	0.0000	0.00
45	1764.77	1764.17	0.0000	0.00
46	1848.17	1847.55	0.0000	0.00
47	2104.25	2103.57	0.0000	0.00
48	2205.22	2204.52	0.0000	0.00
49	2260.99	2260.29	0.0000	0.00
50	2364.30	2363.59	0.0000	0.00
51	2614.85	2614.11	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1606040-06
CP-5023 05-10

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 6/15/2016 5:20:44PM

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	12.93	12 -	15	13.06	1.82E+03	121.11	1.85E+03	1.00
2	46.45	43 -	49	46.56	1.06E+02	73.27	8.91E+02	1.23
3	63.59	61 -	67	63.69	1.16E+02	89.77	1.39E+03	1.51
4	76.44	72 -	81	76.53	8.98E+02	127.48	1.80E+03	3.39
M	5	89 -	96	90.21	7.46E+01	36.99	4.31E+02	1.23
m	6	89 -	96	93.21	1.87E+02	59.63	6.73E+02	1.23
7	128.37	124 -	132	128.43	1.27E+02	77.14	8.39E+02	1.69
8	143.44	141 -	147	143.49	5.94E+01	60.83	6.35E+02	1.68
9	185.98	182 -	189	186.01	2.07E+02	66.00	5.89E+02	1.20
10	209.41	207 -	213	209.43	5.48E+01	59.35	5.98E+02	1.70
M	11	234 -	245	236.13	3.82E+01	31.87	2.38E+02	1.41
m	12	234 -	245	239.13	8.00E+02	63.47	2.27E+02	1.41
13	295.23	292 -	297	295.20	1.90E+02	46.58	2.81E+02	1.51
14	300.87	299 -	304	300.83	4.15E+01	38.08	2.55E+02	1.64
15	328.06	324 -	331	328.01	4.77E+01	46.43	3.27E+02	1.17
16	338.43	334 -	342	338.37	1.73E+02	55.76	3.67E+02	1.84
17	351.96	348 -	355	351.90	3.40E+02	52.69	2.37E+02	1.22
18	462.83	459 -	465	462.71	3.86E+01	33.54	1.73E+02	1.32
19	510.94	507 -	515	510.79	1.53E+02	41.25	1.69E+02	1.62
M	20	578 -	589	578.88	1.41E+01	12.04	3.97E+01	2.02
m	21	578 -	589	583.25	2.35E+02	36.49	9.20E+01	1.56
22	609.62	605 -	614	609.43	2.40E+02	47.12	1.80E+02	1.90
23	652.53	650 -	655	652.32	2.08E+01	20.66	6.84E+01	1.26
24	785.49	783 -	787	785.21	2.10E+01	17.46	4.80E+01	1.43
25	795.49	791 -	798	795.21	3.20E+01	28.28	1.12E+02	1.33
26	861.18	858 -	864	860.87	2.23E+01	23.37	8.14E+01	1.40
27	911.89	907 -	917	911.57	1.63E+02	36.00	7.95E+01	2.13
28	969.61	966 -	973	969.27	5.58E+01	35.61	1.62E+02	1.47
29	1120.27	1114 -	1124	1119.86	7.00E+01	32.60	1.04E+02	1.85
M	30	1200 -	1210	1201.45	1.56E+01	12.65	3.20E+01	2.60
m	31	1200 -	1210	1206.45	2.53E+01	22.18	6.40E+01	2.61
32	1239.19	1234 -	1244	1238.74	3.11E+01	32.74	1.26E+02	1.82
33	1270.33	1267 -	1272	1269.87	1.90E+01	12.88	1.80E+01	1.70
34	1328.35	1316 -	1343	1327.87	3.80E+01	44.09	1.12E+02	7.27
35	1417.61	1413 -	1422	1417.10	1.42E+01	13.86	1.77E+01	1.96
36	1461.36	1455 -	1466	1460.84	5.63E+02	50.87	4.22E+01	2.03
37	1497.07	1494 -	1498	1496.54	7.41E+00	7.92	7.18E+00	1.10
M	38	1582 -	1601	1587.50	1.74E+01	14.04	2.29E+01	2.89
m	39	1582 -	1601	1592.50	1.35E+01	13.45	1.08E+01	2.89
40	1607.47	1603 -	1610	1606.90	9.14E+00	7.75	3.73E+00	1.86

Analysis Report for 1606040-06
CP-5023 05-10

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
41	1623.97	1619 -	1627	1623.40	1.79E+01	10.01	4.15E+00	4.36
42	1630.37	1628 -	1632	1629.80	6.44E+00	6.18	3.13E+00	1.40
43	1636.42	1633 -	1638	1635.85	9.68E+00	7.28	2.64E+00	2.21
44	1697.90	1694 -	1701	1697.31	9.30E+00	10.39	1.14E+01	3.02
45	1764.77	1760 -	1766	1764.17	3.45E+01	13.29	7.00E+00	1.71
46	1848.17	1843 -	1851	1847.55	1.03E+01	11.35	1.35E+01	1.33
47	2104.25	2098 -	2112	2103.57	2.00E+01	19.10	3.00E+01	3.29
48	2205.22	2201 -	2209	2204.52	1.09E+01	10.22	1.01E+01	1.54
49	2260.99	2256 -	2263	2260.29	9.96E+00	8.00	4.08E+00	1.20
50	2364.30	2360 -	2366	2363.59	7.33E+00	6.95	3.33E+00	3.09
51	2614.85	2609 -	2618	2614.11	7.10E+01	16.85	0.00E+00	3.14

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 : 6/15/2016 5:20:44PM

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	12.93	12 -	15	1.82E+03	121.11	1.85E+03	8.05E+01
2	46.45	43 -	49	1.06E+02	73.27	8.91E+02	5.78E+01
3	63.59	61 -	67	1.16E+02	89.77	1.39E+03	7.16E+01
4	76.44	72 -	81	8.98E+02	127.48	1.80E+03	9.25E+01
M 5	90.13	89 -	96	7.46E+01	36.99	4.31E+02	3.41E+01
m 6	93.14	89 -	96	1.87E+02	59.63	6.73E+02	4.26E+01
7	128.37	124 -	132	1.27E+02	77.14	8.39E+02	6.07E+01
8	143.44	141 -	147	5.94E+01	60.83	6.35E+02	4.84E+01
9	185.98	182 -	189	2.07E+02	66.00	5.89E+02	4.88E+01
10	209.41	207 -	213	5.48E+01	59.35	5.98E+02	4.72E+01
M 11	236.13	234 -	245	3.82E+01	31.87	2.38E+02	2.54E+01
m 12	239.13	234 -	245	8.00E+02	63.47	2.27E+02	2.47E+01
13	295.23	292 -	297	1.90E+02	46.58	2.81E+02	3.09E+01
14	300.87	299 -	304	4.15E+01	38.08	2.55E+02	2.95E+01
15	328.06	324 -	331	4.77E+01	46.43	3.27E+02	3.64E+01
16	338.43	334 -	342	1.73E+02	55.76	3.67E+02	4.04E+01
17	351.96	348 -	355	3.40E+02	52.69	2.37E+02	3.09E+01

Analysis Report for 1606040-06

CP-5023 05-10

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	18	462.83	459 -	465	3.86E+01	33.54	1.73E+02	2.56E+01
	19	510.94	507 -	515	1.53E+02	41.25	1.69E+02	2.71E+01
M	20	579.06	578 -	589	1.41E+01	12.04	3.97E+01	1.04E+01
m	21	583.43	578 -	589	2.35E+02	36.49	9.20E+01	1.58E+01
	22	609.62	605 -	614	2.40E+02	47.12	1.80E+02	2.92E+01
	23	652.53	650 -	655	2.08E+01	20.66	6.84E+01	1.52E+01
	24	785.49	783 -	787	2.10E+01	17.46	4.80E+01	1.22E+01
	25	795.49	791 -	798	3.20E+01	28.28	1.12E+02	2.13E+01
	26	861.18	858 -	864	2.23E+01	23.37	8.14E+01	1.76E+01
	27	911.89	907 -	917	1.63E+02	36.00	7.95E+01	2.08E+01
	28	969.61	966 -	973	5.58E+01	35.61	1.62E+02	2.66E+01
	29	1120.27	1114 -	1124	7.00E+01	32.60	1.04E+02	2.30E+01
M	30	1201.89	1200 -	1210	1.56E+01	12.65	3.20E+01	9.30E+00
m	31	1206.89	1200 -	1210	2.53E+01	22.18	6.40E+01	1.32E+01
	32	1239.19	1234 -	1244	3.11E+01	32.74	1.26E+02	2.53E+01
	33	1270.33	1267 -	1272	1.90E+01	12.88	1.80E+01	7.80E+00
	34	1328.35	1316 -	1343	3.80E+01	44.09	1.12E+02	3.48E+01
	35	1417.61	1413 -	1422	1.42E+01	13.86	1.77E+01	9.56E+00
	36	1461.36	1455 -	1466	5.63E+02	50.87	4.22E+01	1.51E+01
	37	1497.07	1494 -	1498	7.41E+00	7.92	7.18E+00	4.73E+00
M	38	1588.06	1582 -	1601	1.74E+01	14.04	2.29E+01	7.87E+00
m	39	1593.06	1582 -	1601	1.35E+01	13.45	1.08E+01	5.39E+00
	40	1607.47	1603 -	1610	9.14E+00	7.75	3.73E+00	3.98E+00
	41	1623.97	1619 -	1627	1.79E+01	10.01	4.15E+00	4.39E+00
	42	1630.37	1628 -	1632	6.44E+00	6.18	3.13E+00	2.91E+00
	43	1636.42	1633 -	1638	9.68E+00	7.28	2.64E+00	3.11E+00
	44	1697.90	1694 -	1701	9.30E+00	10.39	1.14E+01	6.92E+00
	45	1764.77	1760 -	1766	3.45E+01	13.29	7.00E+00	5.10E+00
	46	1848.17	1843 -	1851	1.03E+01	11.35	1.35E+01	7.70E+00
	47	2104.25	2098 -	2112	2.00E+01	19.10	3.00E+01	1.39E+01
	48	2205.22	2201 -	2209	1.09E+01	10.22	1.01E+01	6.41E+00
	49	2260.99	2256 -	2263	9.96E+00	8.00	4.08E+00	4.04E+00
	50	2364.30	2360 -	2366	7.33E+00	6.95	3.33E+00	3.58E+00
	51	2614.85	2609 -	2618	7.10E+01	16.85	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 1606040-06
CP-5023 05-10

PEAK WITH NID REPORT

Peak Analysis Performed on : 6/15/2016 5:20:44PM

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	12.93	12 -	15	13.06	1.82E+03	121.11	1.85E+03	.....
2	46.45	43 -	49	46.56	1.06E+02	73.27	8.91E+02	PB-210
3	63.59	61 -	67	63.69	1.16E+02	89.77	1.39E+03	TH-234 TH-230
4	76.44	72 -	81	76.53	8.98E+02	127.48	1.80E+03	.....
M 5	90.13	89 -	96	90.21	7.46E+01	36.99	4.31E+02	ND-147
m 6	93.14	89 -	96	93.21	1.87E+02	59.63	6.73E+02	GA-67
7	128.37	124 -	132	128.43	1.27E+02	77.14	8.39E+02	.....
8	143.44	141 -	147	143.49	5.94E+01	60.83	6.35E+02	U-235
9	185.98	182 -	189	186.01	2.07E+02	66.00	5.89E+02	RA-226
10	209.41	207 -	213	209.43	5.48E+01	59.35	5.98E+02	CM-243 GA-67
M 11	236.13	234 -	245	236.13	3.82E+01	31.87	2.38E+02	TH-227 NB-95M
m 12	239.13	234 -	245	239.13	8.00E+02	63.47	2.27E+02	PB-212
13	295.23	292 -	297	295.20	1.90E+02	46.58	2.81E+02	PB-214
14	300.87	299 -	304	300.83	4.15E+01	38.08	2.55E+02	GA-67 PB-212 BI-210M
15	328.06	324 -	331	328.01	4.77E+01	46.43	3.27E+02	LA-140
16	338.43	334 -	342	338.37	1.73E+02	55.76	3.67E+02	AC-228
17	351.96	348 -	355	351.90	3.40E+02	52.69	2.37E+02	PB-214
18	462.83	459 -	465	462.71	3.86E+01	33.54	1.73E+02	SB-125
19	510.94	507 -	515	510.79	1.53E+02	41.25	1.69E+02	.....
M 20	579.06	578 -	589	578.88	1.41E+01	12.04	3.97E+01	.....
m 21	583.43	578 -	589	583.25	2.35E+02	36.49	9.20E+01	TL-208
22	609.62	605 -	614	609.43	2.40E+02	47.12	1.80E+02	BI-214
23	652.53	650 -	655	652.32	2.08E+01	20.66	6.84E+01	.....
24	785.49	783 -	787	785.21	2.10E+01	17.46	4.80E+01	.....
25	795.49	791 -	798	795.21	3.20E+01	28.28	1.12E+02	CS-134
26	861.18	858 -	864	860.87	2.23E+01	23.37	8.14E+01	TL-208
27	911.89	907 -	917	911.57	1.63E+02	36.00	7.95E+01	LU-172 AC-228
28	969.61	966 -	973	969.27	5.58E+01	35.61	1.62E+02	AC-228
29	1120.27	1114 -	1124	1119.86	7.00E+01	32.60	1.04E+02	BI-214 SC-46
M 30	1201.89	1200 -	1210	1201.45	1.56E+01	12.65	3.20E+01	.....
m 31	1206.89	1200 -	1210	1206.45	2.53E+01	22.18	6.40E+01	.....
32	1239.19	1234 -	1244	1238.74	3.11E+01	32.74	1.26E+02	CO-56
33	1270.33	1267 -	1272	1269.87	1.90E+01	12.88	1.80E+01	.....
34	1328.35	1316 -	1343	1327.87	3.80E+01	44.09	1.12E+02	.....

Analysis Report for 1606040-06

CP-5023 05-10

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
35	1417.61	1413 -	1422	1417.10	1.42E+01	13.86	1.77E+01	.....
36	1461.36	1455 -	1466	1460.84	5.63E+02	50.87	4.22E+01	K-40
37	1497.07	1494 -	1498	1496.54	7.41E+00	7.92	7.18E+00	.....
M 38	1588.06	1582 -	1601	1587.50	1.74E+01	14.04	2.29E+01	.....
m 39	1593.06	1582 -	1601	1592.50	1.35E+01	13.45	1.08E+01	.....
40	1607.47	1603 -	1610	1606.90	9.14E+00	7.75	3.73E+00	.....
41	1623.97	1619 -	1627	1623.40	1.79E+01	10.01	4.15E+00	.....
42	1630.37	1628 -	1632	1629.80	6.44E+00	6.18	3.13E+00	.....
43	1636.42	1633 -	1638	1635.85	9.68E+00	7.28	2.64E+00	.....
44	1697.90	1694 -	1701	1697.31	9.30E+00	10.39	1.14E+01	.....
45	1764.77	1760 -	1766	1764.17	3.45E+01	13.29	7.00E+00	BI-214
46	1848.17	1843 -	1851	1847.55	1.03E+01	11.35	1.35E+01	.....
47	2104.25	2098 -	2112	2103.57	2.00E+01	19.10	3.00E+01	.....
48	2205.22	2201 -	2209	2204.52	1.09E+01	10.22	1.01E+01	BI-214
49	2260.99	2256 -	2263	2260.29	9.96E+00	8.00	4.08E+00	.....
50	2364.30	2360 -	2366	2363.59	7.33E+00	6.95	3.33E+00	.....
51	2614.85	2609 -	2618	2614.11	7.10E+01	16.85	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 : 6/15/2016 5:20:44PM

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
1	12.93	1.82E+03	121.11	1.18E-05	1.66E-03
2	46.45	1.06E+02	73.27	1.70E-02	1.66E-03
3	63.59	1.16E+02	89.77	2.37E-02	1.75E-03
4	76.44	8.98E+02	127.48	2.56E-02	2.02E-03
M 5	90.13	7.46E+01	36.99	2.60E-02	2.27E-03
m 6	93.14	1.87E+02	59.63	2.60E-02	2.27E-03
7	128.37	1.27E+02	77.14	2.40E-02	2.29E-03
8	143.44	5.94E+01	60.83	2.29E-02	2.35E-03
9	185.98	2.07E+02	66.00	1.99E-02	2.40E-03
10	209.41	5.48E+01	59.35	1.85E-02	2.36E-03
M 11	236.13	3.82E+01	31.87	1.71E-02	2.32E-03
m 12	239.13	8.00E+02	63.47	1.70E-02	2.31E-03
13	295.23	1.90E+02	46.58	1.47E-02	2.21E-03

: 00461

Analysis Report for 1606040-06
CP-5023 05-10

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	14	300.87	4.15E+01	38.08	1.45E-02	2.20E-03
	15	328.06	4.77E+01	46.43	1.37E-02	2.16E-03
	16	338.43	1.73E+02	55.76	1.33E-02	2.14E-03
	17	351.96	3.40E+02	52.69	1.30E-02	2.12E-03
	18	462.83	3.86E+01	33.54	1.06E-02	1.68E-03
	19	510.94	1.53E+02	41.25	9.77E-03	1.43E-03
M	20	579.06	1.41E+01	12.04	8.84E-03	1.08E-03
m	21	583.43	2.35E+02	36.49	8.79E-03	1.06E-03
	22	609.62	2.40E+02	47.12	8.48E-03	9.21E-04
	23	652.53	2.08E+01	20.66	8.02E-03	6.99E-04
	24	785.49	2.10E+01	17.46	6.89E-03	8.11E-04
	25	795.49	3.20E+01	28.28	6.82E-03	8.24E-04
	26	861.18	2.23E+01	23.37	6.38E-03	9.08E-04
	27	911.89	1.63E+02	36.00	6.09E-03	9.27E-04
	28	969.61	5.58E+01	35.61	5.79E-03	8.11E-04
	29	1120.27	7.00E+01	32.60	5.15E-03	5.06E-04
M	30	1201.89	1.56E+01	12.65	4.88E-03	3.92E-04
m	31	1206.89	2.53E+01	22.18	4.86E-03	3.91E-04
	32	1239.19	3.11E+01	32.74	4.77E-03	3.84E-04
	33	1270.33	1.90E+01	12.88	4.68E-03	3.77E-04
	34	1328.35	3.80E+01	44.09	4.53E-03	3.64E-04
	35	1417.61	1.42E+01	13.86	4.32E-03	3.69E-04
	36	1461.36	5.63E+02	50.87	4.23E-03	3.72E-04
	37	1497.07	7.41E+00	7.92	4.16E-03	3.75E-04
M	38	1588.06	1.74E+01	14.04	4.01E-03	3.82E-04
m	39	1593.06	1.35E+01	13.45	4.00E-03	3.82E-04
	40	1607.47	9.14E+00	7.75	3.98E-03	3.84E-04
	41	1623.97	1.79E+01	10.01	3.95E-03	3.85E-04
	42	1630.37	6.44E+00	6.18	3.94E-03	3.85E-04
	43	1636.42	9.68E+00	7.28	3.94E-03	3.86E-04
	44	1697.90	9.30E+00	10.39	3.85E-03	3.90E-04
	45	1764.77	3.45E+01	13.29	3.77E-03	3.96E-04
	46	1848.17	1.03E+01	11.35	3.69E-03	4.01E-04
	47	2104.25	2.00E+01	19.10	3.50E-03	4.01E-04
	48	2205.22	1.09E+01	10.22	3.45E-03	4.01E-04
	49	2260.99	9.96E+00	8.00	3.43E-03	4.01E-04
	50	2364.30	7.33E+00	6.95	3.41E-03	4.01E-04
	51	2614.85	7.10E+01	16.85	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 : 6/15/2016 5:20:44PM

: 00462

Analysis Report for 1606040-06

CP-5023 05-10

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	12.93	1.82E+03	121.11			1.82E+03	1.21E+02
2	46.45	1.06E+02	73.27	2.17E+01	5.74E+00	8.46E+01	7.35E+01
3	63.59	1.16E+02	89.77	2.91E+01	8.34E+00	8.72E+01	9.02E+01
4	76.44	8.98E+02	127.48			8.98E+02	1.27E+02
M 5	90.13	7.46E+01	36.99			7.46E+01	3.70E+01
m 6	93.14	1.87E+02	59.63	4.47E+01	7.30E+00	1.42E+02	6.01E+01
7	128.37	1.27E+02	77.14			1.27E+02	7.71E+01
8	143.44	5.94E+01	60.83	5.98E+00	5.50E+00	5.34E+01	6.11E+01
9	185.98	2.07E+02	66.00	3.13E+01	6.95E+00	1.75E+02	6.64E+01
10	209.41	5.48E+01	59.35			5.48E+01	5.94E+01
M 11	236.13	3.82E+01	31.87			3.82E+01	3.19E+01
m 12	239.13	8.00E+02	63.47	1.19E+01	7.10E+00	7.88E+02	6.39E+01
13	295.23	1.90E+02	46.58			1.90E+02	4.66E+01
14	300.87	4.15E+01	38.08			4.15E+01	3.81E+01
15	328.06	4.77E+01	46.43			4.77E+01	4.64E+01
16	338.43	1.73E+02	55.76			1.73E+02	5.58E+01
17	351.96	3.40E+02	52.69	9.12E+00	4.79E+00	3.31E+02	5.29E+01
18	462.83	3.86E+01	33.54			3.86E+01	3.35E+01
19	510.94	1.53E+02	41.25	6.97E+01	5.00E+00	8.38E+01	4.15E+01
M 20	579.06	1.41E+01	12.04			1.41E+01	1.20E+01
m 21	583.43	2.35E+02	36.49	3.98E+00	3.57E+00	2.31E+02	3.67E+01
22	609.62	2.40E+02	47.12	8.66E+00	3.90E+00	2.31E+02	4.73E+01
23	652.53	2.08E+01	20.66			2.08E+01	2.07E+01
24	785.49	2.10E+01	17.46			2.10E+01	1.75E+01
25	795.49	3.20E+01	28.28			3.20E+01	2.83E+01
26	861.18	2.23E+01	23.37			2.23E+01	2.34E+01
27	911.89	1.63E+02	36.00	2.01E+00	2.72E+00	1.61E+02	3.61E+01
28	969.61	5.58E+01	35.61			5.58E+01	3.56E+01
29	1120.27	7.00E+01	32.60			7.00E+01	3.26E+01
M 30	1201.89	1.56E+01	12.65			1.56E+01	1.26E+01
m 31	1206.89	2.53E+01	22.18			2.53E+01	2.22E+01
32	1239.19	3.11E+01	32.74			3.11E+01	3.27E+01
33	1270.33	1.90E+01	12.88			1.90E+01	1.29E+01
34	1328.35	3.80E+01	44.09			3.80E+01	4.41E+01
35	1417.61	1.42E+01	13.86			1.42E+01	1.39E+01
36	1461.36	5.63E+02	50.87	3.09E+00	1.97E+00	5.60E+02	5.09E+01
37	1497.07	7.41E+00	7.92			7.41E+00	7.92E+00
M 38	1588.06	1.74E+01	14.04			1.74E+01	1.40E+01
m 39	1593.06	1.35E+01	13.45			1.35E+01	1.35E+01
40	1607.47	9.14E+00	7.75			9.14E+00	7.75E+00
41	1623.97	1.79E+01	10.01			1.79E+01	1.00E+01
42	1630.37	6.44E+00	6.18			6.44E+00	6.18E+00
43	1636.42	9.68E+00	7.28			9.68E+00	7.28E+00
44	1697.90	9.30E+00	10.39			9.30E+00	1.04E+01
45	1764.77	3.45E+01	13.29			3.45E+01	1.33E+01
46	1848.17	1.03E+01	11.35			1.03E+01	1.13E+01
47	2104.25	2.00E+01	19.10			2.00E+01	1.91E+01
48	2205.22	1.09E+01	10.22			1.09E+01	1.02E+01
49	2260.99	9.96E+00	8.00			9.96E+00	8.00E+00

Analysis Report for 1606040-06
CP-5023 05-10

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
50	2364.30	7.33E+00	6.95			7.33E+00	6.95E+00
51	2614.85	7.10E+01	16.85	3.07E+00	1.34E+00	6.79E+01	1.69E+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 : 6/15/2016 5:20:44PM
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	12.93	1.82E+03	121.11			1.82E+03	1.21E+02
2	46.45	1.06E+02	73.27	2.17E+01	5.74E+00	8.46E+01	7.35E+01
3	63.59	1.16E+02	89.77	2.91E+01	8.34E+00	8.72E+01	9.02E+01
4	76.44	8.98E+02	127.48			8.98E+02	1.27E+02
M 5	90.13	7.46E+01	36.99			7.46E+01	3.70E+01
m 6	93.14	1.87E+02	59.63	4.47E+01	7.30E+00	1.42E+02	6.01E+01
7	128.37	1.27E+02	77.14			1.27E+02	7.71E+01
8	143.44	5.94E+01	60.83	5.98E+00	5.50E+00	5.34E+01	6.11E+01
9	185.98	2.07E+02	66.00	3.13E+01	6.95E+00	1.75E+02	6.64E+01
10	209.41	5.48E+01	59.35			5.48E+01	5.94E+01
M 11	236.13	3.82E+01	31.87			3.82E+01	3.19E+01
m 12	239.13	8.00E+02	63.47	1.19E+01	7.10E+00	7.88E+02	6.39E+01
13	295.23	1.90E+02	46.58			1.90E+02	4.66E+01
14	300.87	4.15E+01	38.08			4.15E+01	3.81E+01
15	328.06	4.77E+01	46.43			4.77E+01	4.64E+01
16	338.43	1.73E+02	55.76			1.73E+02	5.58E+01
17	351.96	3.40E+02	52.69	9.12E+00	4.79E+00	3.31E+02	5.29E+01
18	462.83	3.86E+01	33.54			3.86E+01	3.35E+01
19	510.94	1.53E+02	41.25	6.97E+01	5.00E+00	8.38E+01	4.15E+01
M 20	579.06	1.41E+01	12.04			1.41E+01	1.20E+01
m 21	583.43	2.35E+02	36.49	3.98E+00	3.57E+00	2.31E+02	3.67E+01
22	609.62	2.40E+02	47.12	8.66E+00	3.90E+00	2.31E+02	4.73E+01
23	652.53	2.08E+01	20.66			2.08E+01	2.07E+01
24	785.49	2.10E+01	17.46			2.10E+01	1.75E+01
25	795.49	3.20E+01	28.28			3.20E+01	2.83E+01
26	861.18	2.23E+01	23.37			2.23E+01	2.34E+01

Analysis Report for 1606040-06

CP-5023 05-10

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.	
	27	911.89	1.63E+02	36.00	2.01E+00	2.72E+00	1.61E+02	3.61E+01
	28	969.61	5.58E+01	35.61			5.58E+01	3.56E+01
	29	1120.27	7.00E+01	32.60			7.00E+01	3.26E+01
M	30	1201.89	1.56E+01	12.65			1.56E+01	1.26E+01
m	31	1206.89	2.53E+01	22.18			2.53E+01	2.22E+01
	32	1239.19	3.11E+01	32.74			3.11E+01	3.27E+01
	33	1270.33	1.90E+01	12.88			1.90E+01	1.29E+01
	34	1328.35	3.80E+01	44.09			3.80E+01	4.41E+01
	35	1417.61	1.42E+01	13.86			1.42E+01	1.39E+01
	36	1461.36	5.63E+02	50.87	3.09E+00	1.97E+00	5.60E+02	5.09E+01
	37	1497.07	7.41E+00	7.92			7.41E+00	7.92E+00
M	38	1588.06	1.74E+01	14.04			1.74E+01	1.40E+01
m	39	1593.06	1.35E+01	13.45			1.35E+01	1.35E+01
	40	1607.47	9.14E+00	7.75			9.14E+00	7.75E+00
	41	1623.97	1.79E+01	10.01			1.79E+01	1.00E+01
	42	1630.37	6.44E+00	6.18			6.44E+00	6.18E+00
	43	1636.42	9.68E+00	7.28			9.68E+00	7.28E+00
	44	1697.90	9.30E+00	10.39			9.30E+00	1.04E+01
	45	1764.77	3.45E+01	13.29			3.45E+01	1.33E+01
	46	1848.17	1.03E+01	11.35			1.03E+01	1.13E+01
	47	2104.25	2.00E+01	19.10			2.00E+01	1.91E+01
	48	2205.22	1.09E+01	10.22			1.09E+01	1.02E+01
	49	2260.99	9.96E+00	8.00			9.96E+00	8.00E+00
	50	2364.30	7.33E+00	6.95			7.33E+00	6.95E+00
	51	2614.85	7.10E+01	16.85	3.07E+00	1.34E+00	6.79E+01	1.69E+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	0.953	1460.81	*	10.67	2.46E+01	3.15E+00
GA-67	0.900	93.31	*	35.70	4.97E+00	1.04E+01
		208.95	*	2.24	4.29E+01	8.71E+01
		300.22	*	16.00	5.80E+00	1.30E+01
NB-95M	0.907	235.69	*	25.00	2.21E+00	1.87E+00
ND-147	0.553	91.11	*	28.90	4.51E-01	2.27E-01

: 00465

Analysis Report for 1606040-06
CP-5023 05-10

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
ND-147	0.553	531.02	13.10		
TL-208	0.985	583.14 *	30.22	1.73E+00	3.44E-01
		860.37 *	4.48	1.54E+00	1.63E+00
		2614.66 *	35.85	1.11E+00	3.04E-01
PB-210	1.000	46.50 *	4.25	2.32E+00	2.03E+00
PB-212	0.957	238.63 *	44.60	2.06E+00	3.26E-01
		300.09 *	3.41	1.66E+00	1.55E+00
BI-214	0.980	609.31 *	46.30	1.17E+00	2.70E-01
		1120.29 *	15.10	1.78E+00	8.49E-01
		1764.49 *	15.80	1.15E+00	4.58E-01
		2204.22 *	4.98	1.26E+00	1.19E+00
PB-214	1.000	295.21 *	19.19	1.34E+00	3.84E-01
		351.92 *	37.19	1.36E+00	3.11E-01
RA-226	0.992	186.21 *	3.28	5.32E+00	9.97E+00
AC-228	0.936	338.32 *	11.40	2.26E+00	8.12E-01
		911.07 *	27.70	1.89E+00	5.13E-01
		969.11 *	16.60	1.15E+00	7.52E-01
TH-234	0.985	63.29 *	3.80	1.92E+00	1.99E+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 : 6/15/2016 5:20:44PM
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	12.93	5.06687E-01	3.32		
4	76.44	2.49326E-01	7.10		
7	128.37	3.51511E-02	30.48		
8	143.44	1.48348E-02	57.19	Tol.	U-235
15	328.06	1.32372E-02	48.72	Tol.	LA-140
18	462.83	1.07333E-02	43.40	Tol.	SB-125
19	510.94	2.32818E-02	24.79	Sum	
M 20	579.06	3.91489E-03	42.72		
23	652.53	5.77525E-03	49.69	Sum	
24	785.49	5.83333E-03	41.58		
25	795.49	8.88258E-03	44.23	Sum	

Analysis Report for 1606040-06
CP-5023 05-10

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
M	30	1201.89	4.34482E-03	40.43		
m	31	1206.89	7.02363E-03	43.86	Sum	
	32	1239.19	8.63475E-03	52.66		
	33	1270.33	5.27778E-03	33.91	Sum	
	34	1328.35	1.05556E-02	58.01		
	35	1417.61	3.93720E-03	48.88		
	37	1497.07	2.05808E-03	53.46		
M	38	1588.06	4.84627E-03	40.22		
m	39	1593.06	3.75934E-03	49.70	D-Esc	
	40	1607.47	2.53788E-03	42.39		
	41	1623.97	4.97917E-03	27.93		
	42	1630.37	1.78819E-03	48.04		
	43	1636.42	2.68939E-03	37.60		
	44	1697.90	2.58333E-03	55.87	Sum	
	46	1848.17	2.85131E-03	55.27		
	47	2104.25	5.55556E-03	47.76	S-Esc	
	49	2260.99	2.76620E-03	40.17		
	50	2364.30	2.03704E-03	47.36		

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

NUCLIDE IDENTIFICATION REPORT

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

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.95	1460.81 *	10.67	2.46E+01	3.15E+00
GA-67	0.90	93.31 *	35.70	4.97E+00	1.04E+01
		208.95 *	2.24	4.29E+01	8.71E+01
		300.22 *	16.00	5.80E+00	1.30E+01
NB-95M	0.90	235.69 *	25.00	2.21E+00	1.87E+00
ND-147	0.55	91.11 *	28.90	4.51E-01	2.27E-01
		531.02	13.10		
TL-208	0.98	583.14 *	30.22	1.73E+00	3.44E-01
		860.37 *	4.48	1.54E+00	1.63E+00
		2614.66 *	35.85	1.11E+00	3.04E-01

Analysis Report for 1606040-06
 CP-5023 05-10

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
PB-210	1.00	46.50 *	4.25	2.32E+00	2.03E+00
PB-212	0.95	238.63 *	44.60	2.06E+00	3.26E-01
		300.09 *	3.41	1.66E+00	1.55E+00
BI-214	0.98	609.31 *	46.30	1.17E+00	2.70E-01
		1120.29 *	15.10	1.78E+00	8.49E-01
		1764.49 *	15.80	1.15E+00	4.58E-01
		2204.22 *	4.98	1.26E+00	1.19E+00
PB-214	1.00	295.21 *	19.19	1.34E+00	3.84E-01
		351.92 *	37.19	1.36E+00	3.11E-01
RA-226	0.99	186.21 *	3.28	5.32E+00	9.97E+00
AC-228	0.93	338.32 *	11.40	2.26E+00	8.12E-01
		911.07 *	27.70	1.89E+00	5.13E-01
		969.11 *	16.60	1.15E+00	7.52E-01
TH-234	0.98	63.29 *	3.80	1.92E+00	1.99E+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	0.953	2.46E+01	3.15E+00	
GA-67	0.900	4.20E+00	7.47E+00	
NB-95M	0.907	2.21E+00	1.87E+00	
ND-147	0.553	4.51E-01	2.27E-01	
TL-208	0.985	1.38E+00	2.26E-01	
PB-210	1.000	2.32E+00	2.03E+00	
PB-212	0.957	1.99E+00	3.20E-01	
BI-214	0.980	1.21E+00	2.21E-01	
PB-214	1.000	1.35E+00	2.41E-01	
RA-226	0.992	5.32E+00	9.97E+00	
AC-228	0.936	1.79E+00	3.76E-01	
TH-234	0.985	1.92E+00	1.99E+00	

Analysis Report for 1606040-06
CP-5023 05-10

- ? = 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 1606040-06
CP-5023 05-10

UNIDENTIFIED PEAKS

Peak Locate Performed on : 6/15/2016 5:20:44PM
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	12.93	5.06687E-01	3.32		
4	76.44	2.49326E-01	7.10		
7	128.37	3.51511E-02	30.48		
8	143.44	1.48348E-02	57.19	Tol.	U-235
15	328.06	1.32372E-02	48.72	Tol.	LA-140
18	462.83	1.07333E-02	43.40	Tol.	SB-125
19	510.94	2.32818E-02	24.79	Sum	
M 20	579.06	3.91489E-03	42.72		
23	652.53	5.77525E-03	49.69	Sum	
24	785.49	5.83333E-03	41.58		
25	795.49	8.88258E-03	44.23	Sum	
M 30	1201.89	4.34482E-03	40.43		
m 31	1206.89	7.02363E-03	43.86	Sum	
32	1239.19	8.63475E-03	52.66		
33	1270.33	5.27778E-03	33.91	Sum	
34	1328.35	1.05556E-02	58.01		
35	1417.61	3.93720E-03	48.88		
37	1497.07	2.05808E-03	53.46		
M 38	1588.06	4.84627E-03	40.22		
m 39	1593.06	3.75934E-03	49.70	D-Esc	
40	1607.47	2.53788E-03	42.39		
41	1623.97	4.97917E-03	27.93		
42	1630.37	1.78819E-03	48.04		
43	1636.42	2.68939E-03	37.60		
44	1697.90	2.58333E-03	55.87	Sum	
46	1848.17	2.85131E-03	55.27		
47	2104.25	5.55556E-03	47.76	S-Esc	
49	2260.99	2.76620E-03	40.17		
50	2364.30	2.03704E-03	47.36		

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

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	-3.20E-01	8.22E-01	8.22E-01
+	NA-22	1274.54	99.94	-6.22E-03	1.17E-01	1.17E-01
+	NA-24	1368.53	99.99	-2.02E+03	1.17E+05	1.82E+05
		2754.09	99.86	1.47E+04		1.17E+05
+	AL-26	1808.65	99.76	-2.79E-03	8.01E-02	8.01E-02
+	K-40	1460.81	* 10.67	2.46E+01	1.48E+00	1.48E+00
+	@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88	94.40	1.56E-02	7.25E-02	7.25E-02
		78.34	96.00	4.63E-01		1.11E-01
+	SC-46	889.25	99.98	1.76E-02	1.03E-01	1.03E-01
		1120.51	99.99	2.79E-01		2.13E-01
+	V-48	983.52	99.98	1.07E-01	1.89E-01	1.90E-01
		1312.10	97.50	-5.82E-03		1.89E-01
+	CR-51	320.08	9.83	-1.47E-01	1.01E+00	1.01E+00
+	MN-54	834.83	99.97	5.27E-02	1.24E-01	1.24E-01
+	CO-56	846.75	99.96	1.72E-03	1.30E-01	1.30E-01
		1037.75	14.03	-1.88E-01		8.40E-01
		1238.25	67.00	2.01E-01		2.88E-01
		1771.40	15.51	-9.08E-01		6.35E-01
		2598.48	16.90	6.46E-02		4.66E-01
+	CO-57	122.06	85.51	2.13E-02	7.57E-02	7.57E-02
		136.48	10.60	2.44E-01		6.48E-01
+	CO-58	810.76	99.40	-4.73E-02	1.11E-01	1.11E-01
+	FE-59	1099.22	56.50	2.11E-04	2.61E-01	2.61E-01
		1291.56	43.20	6.63E-02		3.28E-01
+	CO-60	1173.22	100.00	-7.27E-02	1.01E-01	1.09E-01
		1332.49	100.00	-4.76E-02		1.01E-01
+	ZN-65	1115.52	50.75	2.85E-03	2.74E-01	2.74E-01
+	GA-67	93.31	* 35.70	4.97E+00	5.02E+00	5.02E+00
		208.95	* 2.24	4.29E+01		7.61E+01
		300.22	* 16.00	5.80E+00		8.61E+00
+	SE-75	121.11	16.70	3.52E-01	1.21E-01	4.20E-01

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Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	SE-75	136.00	59.20	2.78E-02	1.21E-01
		264.65	59.80	2.12E-02	1.22E-01
		279.53	25.20	-1.49E-01	3.25E-01
		400.65	11.40	1.88E-01	6.93E-01
+	RB-82	776.52	13.00	4.07E-02	1.26E+00
+	RB-83	520.41	46.00	4.33E-02	1.93E-01
		529.64	30.30	1.07E-01	2.90E-01
		552.65	16.40	1.21E-01	5.54E-01
+	KR-85	513.99	0.43	-2.10E+01	2.12E+01
+	SR-85	513.99	99.27	-1.05E-01	1.07E-01
+	Y-88	898.02	93.40	1.87E-03	9.32E-02
		1836.01	99.38	3.92E-03	9.32E-02
+	NB-93M	16.57	9.43	6.96E+01	1.31E+02
+	NB-94	702.63	100.00	9.42E-02	9.96E-02
		871.10	100.00	1.28E-02	9.96E-02
+	NB-95	765.79	99.81	6.74E-02	1.53E-01
+	NB-95M	235.69	* 25.00	2.21E+00	6.57E+00
+	ZR-95	724.18	43.70	-3.37E-02	2.13E-01
		756.72	55.30	4.91E-02	2.13E-01
+	MO-99	181.06	6.20	3.53E+00	2.15E+01
		739.58	12.80	-2.10E+00	2.15E+01
		778.00	4.50	1.52E+01	6.86E+01
+	RU-103	497.08	89.00	2.82E-02	1.14E-01
+	RU-106	621.84	9.80	2.77E-01	1.05E+00
+	AG-108M	433.93	89.90	-1.01E-02	8.06E-02
		614.37	90.40	1.07E-02	1.08E-01
		722.95	90.50	-2.53E-01	1.11E-01
+	CD-109	88.03	3.72	2.34E+00	2.57E+00
+	AG-110M	657.75	93.14	-3.94E-02	9.77E-02
		677.61	10.53	-6.31E-01	8.85E-01
		706.67	16.46	1.72E-01	7.06E-01
		763.93	21.98	-2.26E-01	5.02E-01
		884.67	71.63	7.07E-04	1.46E-01
		1384.27	23.94	1.27E-01	4.28E-01
+	CD-113M	263.70	0.02	3.86E+01	2.90E+02
+	SN-113	255.12	1.93	-1.24E+00	1.19E-01
		391.69	64.90	-2.47E-02	1.19E-01
+	TE123M	159.00	84.10	5.95E-02	9.22E-02
+	SB-124	602.71	97.87	3.59E-02	1.21E-01
		645.85	7.26	-4.10E-01	1.38E+00
		722.78	11.10	-2.40E+00	1.05E+00
		1691.02	49.00	1.12E-01	2.21E-01
+	I-125	35.49	6.49	1.00E+00	2.34E+00
+	SB-125	176.33	6.89	2.20E-01	2.57E-01
		427.89	29.33	1.88E-02	2.57E-01
		463.38	10.35	7.16E-01	8.90E-01
		600.56	17.80	1.53E-01	5.84E-01
		635.90	11.32	4.62E-03	8.55E-01

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	SB-126	414.70	83.30	-2.16E-03	1.76E-01	1.76E-01
		666.33	99.60	4.04E-02		2.12E-01
		695.00	99.60	-6.79E-02		2.11E-01
		720.50	53.80	2.18E-01		4.03E-01
+	SN-126	87.57	37.00	2.30E-01	2.53E-01	2.53E-01
+	SB-127	473.00	25.00	7.72E-01	2.93E+00	3.16E+00
		685.20	35.70	-1.85E-01		2.93E+00
		783.80	14.70	-4.55E-01		8.02E+00
+	I-129	29.78	57.00	-2.45E-01	3.78E-01	3.78E-01
		33.60	13.20	-2.88E-01		1.15E+00
		39.58	7.52	-9.39E-01		1.30E+00
+	I-131	284.30	6.05	-2.18E+00	2.68E-01	3.50E+00
		364.48	81.20	-3.63E-02		2.68E-01
		636.97	7.26	4.05E-02		4.14E+00
		722.89	1.80	-3.95E+01		1.73E+01
+	TE-132	49.72	13.10	1.23E+00	1.32E+00	8.66E+00
		228.16	88.00	-7.00E-01		1.32E+00
+	BA-133	81.00	33.00	-4.05E-04	1.14E-01	1.80E-01
		302.84	17.80	-2.80E-01		4.21E-01
		356.01	60.00	2.52E-03		1.14E-01
+	I-133	529.87	86.30	3.45E+01	3.25E+03	3.25E+03
+	XE-133	81.00	38.00	-2.00E-03	8.87E-01	8.87E-01
+	CS-134	563.23	8.38	-6.83E-02	1.10E-01	9.60E-01
		569.32	15.43	1.51E-02		5.67E-01
		604.70	97.60	1.94E-02		1.10E-01
		795.84	85.40	1.50E-01		1.56E-01
		801.93	8.73	-1.18E-01		1.21E+00
+	CS-135	268.24	16.00	-1.41E-01	4.78E-01	4.78E-01
+	I-135	1131.51	22.50	-9.37E+13	9.63E+13	9.63E+13
		1260.41	28.60	2.67E+13		1.09E+14
		1678.03	9.54	-6.31E+13		2.22E+14
+	CS-136	153.22	7.46	4.08E-01	2.05E-01	1.89E+00
		163.89	4.61	1.37E-01		2.90E+00
		176.55	13.56	-6.27E-02		1.04E+00
		273.65	12.66	-1.54E+00		1.14E+00
		340.57	48.50	-6.40E-02		3.88E-01
		818.50	99.70	-4.82E-02		2.05E-01
		1048.07	79.60	-4.77E-02		2.84E-01
		1235.34	19.70	-1.32E-01		1.59E+00
+	CS-137	661.65	85.12	-2.71E-02	1.12E-01	1.12E-01
+	LA-138	788.74	34.00	-2.50E-02	1.27E-01	3.11E-01
		1435.80	66.00	-5.55E-02		1.27E-01
+	CE-139	165.85	80.35	-4.92E-03	8.50E-02	8.50E-02
+	BA-140	162.64	6.70	5.28E-01	6.57E-01	2.08E+00
		304.84	4.50	1.21E-01		3.29E+00
		423.70	3.20	1.90E+00		4.93E+00
		437.55	2.00	1.57E+00		7.54E+00
		537.32	25.00	9.73E-02		6.57E-01
+	LA-140	328.77	20.50	8.20E-01	2.44E-01	8.77E-01

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<i>Nuclide Name</i>	<i>Energy (keV)</i>	<i>Yield(%)</i>	<i>Activity (pCi/grams)</i>	<i>Nuclide MDA (pCi/grams)</i>	<i>Line MDA (pCi/grams)</i>	
LA-140	487.03	45.50	-3.72E-02	2.44E-01	3.34E-01	
	815.85	23.50	-1.42E-01		8.92E-01	
	1596.49	95.49	1.59E-01		2.44E-01	
+	CE-141	145.44	48.40	3.79E-02	1.92E-01	1.92E-01
+	CE-143	57.36	11.80	-1.04E+02	1.84E+02	4.17E+02
	293.26	42.00	7.48E+01		1.84E+02	
	664.55	5.20	5.84E+02		1.49E+03	
+	CE-144	133.54	10.80	-6.44E-03	6.25E-01	6.25E-01
+	PM-144	476.78	42.00	-6.87E-02	1.00E-01	1.76E-01
	618.01	98.60	-1.56E-03		1.00E-01	
	696.49	99.49	-3.23E-02		1.06E-01	
+	PM-145	36.85	21.70	-2.66E-02	2.81E-01	5.33E-01
	37.36	39.70	-1.40E-02		2.81E-01	
	42.30	15.10	1.68E-01		6.21E-01	
	72.40	2.31	-6.81E-01		2.76E+00	
+	PM-146	453.90	39.94	5.80E-02	1.95E-01	1.95E-01
	735.90	14.01	2.14E-01		7.15E-01	
	747.13	13.10	5.35E-02		7.74E-01	
+	ND-147	91.11	* 28.90	4.51E-01	8.25E-01	8.25E-01
	531.02	13.10	3.66E-02		1.32E+00	
+	PM-149	285.90	3.10	-7.30E+01	1.35E+02	1.35E+02
+	EU-152	121.78	20.50	8.60E-02	3.05E-01	3.05E-01
	244.69	5.40	2.30E-02		1.36E+00	
	344.27	19.13	1.79E-02		3.43E-01	
	778.89	9.20	-3.38E-01		1.16E+00	
	964.01	10.40	5.46E-01		1.34E+00	
	1085.78	7.22	-4.16E-01		1.40E+00	
	1112.02	9.60	6.98E-02		1.31E+00	
	1407.95	14.94	1.81E-01		7.20E-01	
+	GD-153	97.43	31.30	7.32E-02	2.18E-01	2.18E-01
	103.18	22.20	-1.75E-01		2.89E-01	
+	EU-154	123.07	40.50	6.53E-02	1.57E-01	1.57E-01
	723.30	19.70	-1.16E+00		5.09E-01	
	873.19	11.50	1.86E-02		8.70E-01	
	996.32	10.30	-4.55E-01		1.06E+00	
	1004.76	17.90	4.10E-01		6.96E-01	
	1274.45	35.50	-1.74E-02		3.28E-01	
+	EU-155	86.50	30.90	2.09E-01	2.95E-01	2.95E-01
	105.30	20.70	2.94E-01		3.11E-01	
+	EU-156	811.77	10.40	1.23E-01	1.78E+00	1.78E+00
	1153.47	7.20	-8.21E-01		3.16E+00	
	1230.71	8.90	5.69E-01		2.96E+00	
+	HO-166M	184.41	72.60	1.45E-01	1.22E-01	1.22E-01
	280.45	29.60	-1.17E-01		2.57E-01	
	410.94	11.10	3.40E-01		7.35E-01	
	711.69	54.10	1.00E-01		2.01E-01	
+	TM-171	66.72	0.14	1.70E+01	5.05E+01	5.05E+01
+	HF-172	81.75	4.52	-1.72E+00	5.95E-01	1.33E+00
	125.81	11.30	-5.71E-01		5.95E-01	

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	LU-172	181.53	20.60	6.28E-02	7.21E-01	1.28E+00
		810.06	16.63	-9.69E-01		2.27E+00
		912.12	15.25	1.27E+01		5.48E+00
		1093.66	62.50	1.29E-01		7.21E-01
+	LU-173	100.72	5.24	-1.29E-02	3.87E-01	1.21E+00
		272.11	21.20	2.44E-01		3.87E-01
+	HF-175	343.40	84.00	-3.71E-03	9.02E-02	9.02E-02
+	LU-176	88.34	13.30	6.41E-01	7.52E-02	7.04E-01
		201.83	86.00	-8.62E-03		8.38E-02
		306.78	94.00	1.91E-02		7.52E-02
+	TA-182	67.75	41.20	3.86E-02	1.80E-01	1.80E-01
		1121.30	34.90	5.91E-01		5.74E-01
		1189.05	16.23	-4.94E-01		8.23E-01
		1221.41	26.98	1.98E-01		5.71E-01
		1231.02	11.44	0.00E+00		1.34E+00
+	IR-192	308.46	29.68	-5.96E-02	1.70E-01	2.67E-01
		468.07	48.10	-1.33E-02		1.70E-01
+	HG-203	279.19	77.30	7.44E-02	1.27E-01	1.27E-01
+	BI-207	569.67	97.72	2.36E-03	8.85E-02	8.85E-02
		1063.62	74.90	6.25E-02		1.67E-01
+	TL-208	583.14	* 30.22	1.73E+00	1.45E-01	5.03E-01
		860.37	* 4.48	1.54E+00		2.62E+00
		2614.66	* 35.85	1.11E+00		1.45E-01
+	BI-210M	262.00	45.00	-1.59E-01	1.43E-01	1.43E-01
		300.00	23.00	1.12E-01		3.49E-01
+	PB-210	46.50	* 4.25	2.32E+00	3.29E+00	3.29E+00
+	PB-211	404.84	2.90	-5.32E-01	2.48E+00	2.48E+00
		831.96	2.90	-1.51E+00		3.57E+00
+	BI-212	727.17	11.80	8.27E-01	1.09E+00	1.09E+00
		1620.62	2.75	-6.07E-02		3.99E+00
+	PB-212	238.63	* 44.60	2.06E+00	2.99E-01	2.99E-01
		300.09	* 3.41	1.66E+00		2.47E+00
+	BI-214	609.31	* 46.30	1.17E+00	3.14E-01	3.14E-01
		1120.29	* 15.10	1.78E+00		1.24E+00
		1764.49	* 15.80	1.15E+00		4.30E-01
		2204.22	* 4.98	1.26E+00		1.79E+00
+	PB-214	295.21	* 19.19	1.34E+00	2.71E-01	4.52E-01
		351.92	* 37.19	1.36E+00		2.71E-01
+	RN-219	401.80	6.50	-8.93E-01	1.07E+00	1.07E+00
+	RA-223	323.87	3.88	-6.74E-03	1.83E+00	1.83E+00
+	RA-224	240.98	3.95	1.60E+01	4.10E+00	4.10E+00
+	RA-225	40.00	31.00	-4.12E-01	5.70E-01	5.70E-01
+	RA-226	186.21	* 3.28	5.32E+00	3.12E+00	3.12E+00
+	TH-227	50.10	8.40	1.16E-01	8.15E-01	8.15E-01
		236.00	11.50	-8.20E+00		9.31E-01
		256.20	6.30	-3.23E-01		1.13E+00
+	AC-228	338.32	* 11.40	2.26E+00	5.28E-01	1.09E+00
		911.07	* 27.70	1.89E+00		5.28E-01

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Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)	
	AC-228	969.11	*	16.60	1.15E+00	5.28E-01	1.15E+00
+	TH-230	48.44		16.90	-5.68E-01	4.20E-01	4.20E-01
		62.85		4.60	3.05E+00		1.81E+00
		67.67		0.37	3.97E+00		1.85E+01
+	PA-231	283.67		1.60	-2.65E+00	3.25E+00	4.25E+00
		302.67		2.30	-2.16E+00		3.25E+00
+	TH-231	25.64		14.70	-1.56E+00	1.08E+00	2.86E+00
		84.21		6.40	1.11E+00		1.08E+00
+	PA-233	311.98		38.60	1.57E-01	2.71E-01	2.71E-01
+	PA-234	131.20		20.40	1.17E-02	3.41E-01	3.41E-01
		733.99		8.80	-4.79E-01		1.11E+00
		946.00		12.00	-2.13E-01		8.98E-01
+	PA-234M	1001.03		0.92	9.03E+00	1.40E+01	1.40E+01
+	TH-234	63.29	*	3.80	1.92E+00	3.25E+00	3.25E+00
+	U-235	143.76		10.50	5.42E-01	6.76E-01	6.76E-01
		163.35		4.70	3.70E-01		1.46E+00
		205.31		4.70	2.94E-01		1.61E+00
+	NP-237	86.50		12.60	5.10E-01	7.20E-01	7.20E-01
+	NP-239	106.10		22.70	-1.16E+01	1.33E+01	1.33E+01
		228.18		10.70	-1.68E+01		3.17E+01
		277.60		14.10	6.48E+00		2.70E+01
+	AM-241	59.54		35.90	5.70E-02	1.92E-01	1.92E-01
+	AM-243	74.67		66.00	-4.91E-01	1.37E-01	1.37E-01
+	CM-243	209.75		3.29	2.96E+00	5.68E-01	2.62E+00
		228.14		10.60	-3.54E-01		6.67E-01
		277.60		14.00	1.36E-01		5.68E-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

: 00476

Analysis Report for 1606040-06
 CP-5023 05-10

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	8.22E-01	8.22E-01	-3.20E-01	3.81E-01
NA-22	1274.54	99.94	1.17E-01	1.17E-01	-6.22E-03	5.28E-02
NA-24	1368.53	99.99	1.82E+05	1.17E+05	-2.02E+03	7.80E+04
	2754.09	99.86	1.17E+05		1.47E+04	4.13E+04
AL-26	1808.65	99.76	8.01E-02	8.01E-02	-2.79E-03	3.28E-02
+ K-40	1460.81	* 10.67	1.48E+00	1.48E+00	2.46E+01	6.78E-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	7.25E-02	7.25E-02	1.56E-02	3.51E-02
	78.34	96.00	1.11E-01		4.63E-01	5.43E-02
SC-46	889.25	99.98	1.03E-01	1.03E-01	1.76E-02	4.68E-02
	1120.51	99.99	2.13E-01		2.79E-01	1.01E-01
V-48	983.52	99.98	1.90E-01	1.89E-01	1.07E-01	8.68E-02
	1312.10	97.50	1.89E-01		-5.82E-03	8.40E-02
CR-51	320.08	9.83	1.01E+00	1.01E+00	-1.47E-01	4.76E-01
MN-54	834.83	99.97	1.24E-01	1.24E-01	5.27E-02	5.75E-02
CO-56	846.75	99.96	1.30E-01	1.30E-01	1.72E-03	6.04E-02
	1037.75	14.03	8.40E-01		-1.88E-01	3.81E-01
	1238.25	67.00	2.88E-01		2.01E-01	1.35E-01
	1771.40	15.51	6.35E-01		-9.08E-01	2.66E-01
	2598.48	16.90	4.66E-01		6.46E-02	1.80E-01
CO-57	122.06	85.51	7.57E-02	7.57E-02	2.13E-02	3.65E-02
	136.48	10.60	6.48E-01		2.44E-01	3.13E-01
CO-58	810.76	99.40	1.11E-01	1.11E-01	-4.73E-02	5.10E-02
FE-59	1099.22	56.50	2.61E-01	2.61E-01	2.11E-04	1.19E-01
	1291.56	43.20	3.28E-01		6.63E-02	1.47E-01
CO-60	1173.22	100.00	1.09E-01	1.01E-01	-7.27E-02	4.93E-02
	1332.49	100.00	1.01E-01		-4.76E-02	4.47E-02
ZN-65	1115.52	50.75	2.74E-01	2.74E-01	2.85E-03	1.26E-01
+ GA-67	93.31	* 35.70	5.02E+00	5.02E+00	4.97E+00	2.46E+00
	208.95	* 2.24	7.61E+01		4.29E+01	3.70E+01
	300.22	* 16.00	8.61E+00		5.80E+00	4.12E+00
SE-75	121.11	16.70	4.20E-01	1.21E-01	3.52E-01	2.03E-01
	136.00	59.20	1.21E-01		2.78E-02	5.83E-02
	264.65	59.80	1.22E-01		2.12E-02	5.81E-02
	279.53	25.20	3.25E-01		-1.49E-01	1.55E-01
	400.65	11.40	6.93E-01		1.88E-01	3.25E-01
RB-82	776.52	13.00	1.26E+00	1.26E+00	4.07E-02	5.88E-01
RB-83	520.41	46.00	1.93E-01	1.93E-01	4.33E-02	8.97E-02
	529.64	30.30	2.90E-01		1.07E-01	1.35E-01
	552.65	16.40	5.54E-01		1.21E-01	2.57E-01
KR-85	513.99	0.43	2.12E+01	2.12E+01	-2.10E+01	9.98E+00
SR-85	513.99	99.27	1.07E-01	1.07E-01	-1.05E-01	5.01E-02
Y-88	898.02	93.40	1.09E-01	9.32E-02	1.87E-03	4.93E-02
	1836.01	99.38	9.32E-02		3.92E-03	3.87E-02
NB-93M	16.57	9.43	1.31E+02	1.31E+02	6.96E+01	6.38E+01
NB-94	702.63	100.00	1.20E-01	9.96E-02	9.42E-02	5.66E-02
	871.10	100.00	9.96E-02		1.28E-02	4.55E-02
NB-95	765.79	99.81	1.53E-01	1.53E-01	6.74E-02	7.18E-02
+ NB-95M	235.69	* 25.00	6.57E+00	6.57E+00	2.21E+00	3.21E+00
ZR-95	724.18	43.70	3.17E-01	2.13E-01	-3.37E-02	1.49E-01
	756.72	55.30	2.13E-01		4.91E-02	9.85E-02

Analysis Report for 1606040-06

CP-5023 05-10

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	3.01E+01	2.15E+01	3.53E+00	1.45E+01
	739.58	12.80	2.15E+01		-2.10E+00	9.96E+00
	778.00	4.50	6.86E+01		1.52E+01	3.20E+01
RU-103	497.08	89.00	1.14E-01	1.14E-01	2.82E-02	5.32E-02
RU-106	621.84	9.80	1.05E+00	1.05E+00	2.77E-01	4.90E-01
AG-108M	433.93	89.90	8.06E-02	8.06E-02	-1.01E-02	3.76E-02
	614.37	90.40	1.08E-01		1.07E-02	5.07E-02
	722.95	90.50	1.11E-01		-2.53E-01	5.12E-02
CD-109	88.03	3.72	2.57E+00	2.57E+00	2.34E+00	1.25E+00
AG-110M	657.75	93.14	9.77E-02	9.77E-02	-3.94E-02	4.51E-02
	677.61	10.53	8.85E-01		-6.31E-01	4.09E-01
	706.67	16.46	7.06E-01		1.72E-01	3.30E-01
	763.93	21.98	5.02E-01		-2.26E-01	2.33E-01
	884.67	71.63	1.46E-01		7.07E-04	6.68E-02
	1384.27	23.94	4.28E-01		1.27E-01	1.88E-01
CD-113M	263.70	0.02	2.90E+02	2.90E+02	3.86E+01	1.38E+02
SN-113	255.12	1.93	3.93E+00	1.19E-01	-1.24E+00	1.87E+00
	391.69	64.90	1.19E-01		-2.47E-02	5.60E-02
TE123M	159.00	84.10	9.22E-02	9.22E-02	5.95E-02	4.45E-02
SB-124	602.71	97.87	1.21E-01	1.21E-01	3.59E-02	5.66E-02
	645.85	7.26	1.38E+00		-4.10E-01	6.39E-01
	722.78	11.10	1.05E+00		-2.40E+00	4.86E-01
	1691.02	49.00	2.21E-01		1.12E-01	9.41E-02
I-125	35.49	6.49	2.34E+00	2.34E+00	1.00E+00	1.12E+00
SB-125	176.33	6.89	1.04E+00	2.57E-01	2.20E-01	5.00E-01
	427.89	29.33	2.57E-01		1.88E-02	1.20E-01
	463.38	10.35	8.90E-01		7.16E-01	4.20E-01
	600.56	17.80	5.84E-01		1.53E-01	2.74E-01
	635.90	11.32	8.55E-01		4.62E-03	3.98E-01
SB-126	414.70	83.30	1.76E-01	1.76E-01	-2.16E-03	8.24E-02
	666.33	99.60	2.12E-01		4.04E-02	9.87E-02
	695.00	99.60	2.11E-01		-6.79E-02	9.82E-02
	720.50	53.80	4.03E-01		2.18E-01	1.87E-01
SN-126	87.57	37.00	2.53E-01	2.53E-01	2.30E-01	1.24E-01
SB-127	473.00	25.00	3.16E+00	2.93E+00	7.72E-01	1.47E+00
	685.20	35.70	2.93E+00		-1.85E-01	1.36E+00
	783.80	14.70	8.02E+00		-4.55E-01	3.73E+00
I-129	29.78	57.00	3.78E-01	3.78E-01	-2.45E-01	1.80E-01
	33.60	13.20	1.15E+00		-2.88E-01	5.51E-01
	39.58	7.52	1.30E+00		-9.39E-01	6.21E-01
I-131	284.30	6.05	3.50E+00	2.68E-01	-2.18E+00	1.66E+00
	364.48	81.20	2.68E-01		-3.63E-02	1.26E-01
	636.97	7.26	4.14E+00		4.05E-02	1.93E+00
	722.89	1.80	1.73E+01		-3.95E+01	8.00E+00
TE-132	49.72	13.10	8.66E+00	1.32E+00	1.23E+00	4.15E+00
	228.16	88.00	1.32E+00		-7.00E-01	6.30E-01
BA-133	81.00	33.00	1.80E-01	1.14E-01	-4.05E-04	8.68E-02
	302.84	17.80	4.21E-01		-2.80E-01	2.00E-01
	356.01	60.00	1.14E-01		2.52E-03	5.36E-02
I-133	529.87	86.30	3.25E+03	3.25E+03	3.45E+01	1.50E+03
XE-133	81.00	38.00	8.87E-01	8.87E-01	-2.00E-03	4.28E-01
CS-134	563.23	8.38	9.60E-01	1.10E-01	-6.83E-02	4.44E-01
	569.32	15.43	5.67E-01		1.51E-02	2.64E-01

Analysis Report for 1606040-06

CP-5023 05-10

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	1.10E-01	1.10E-01	1.94E-02	5.17E-02	
	795.84	85.40	1.56E-01		1.50E-01	7.35E-02	
	801.93	8.73	1.21E+00		-1.18E-01	5.58E-01	
CS-135	268.24	16.00	4.78E-01	4.78E-01	-1.41E-01	2.28E-01	
	1131.51	22.50	9.63E+13		9.63E+13	-9.37E+13	4.26E+13
	1260.41	28.60	1.09E+14			2.67E+13	4.96E+13
I-135	1678.03	9.54	2.22E+14		-6.31E+13	9.37E+13	
	153.22	7.46	1.89E+00	2.05E-01	4.08E-01	9.12E-01	
	163.89	4.61	2.90E+00		1.37E-01	1.39E+00	
	176.55	13.56	1.04E+00		-6.27E-02	4.98E-01	
	273.65	12.66	1.14E+00		-1.54E+00	5.43E-01	
	340.57	48.50	3.88E-01		-6.40E-02	1.85E-01	
	818.50	99.70	2.05E-01		-4.82E-02	9.42E-02	
	1048.07	79.60	2.84E-01		-4.77E-02	1.30E-01	
1235.34	19.70	1.59E+00	-1.32E-01		7.40E-01		
CS-137	661.65	85.12	1.12E-01	1.12E-01	-2.71E-02	5.20E-02	
LA-138	788.74	34.00	3.11E-01	1.27E-01	-2.50E-02	1.44E-01	
	1435.80	66.00	1.27E-01		-5.55E-02	5.41E-02	
CE-139	165.85	80.35	8.50E-02	8.50E-02	-4.92E-03	4.08E-02	
BA-140	162.64	6.70	2.08E+00	6.57E-01	5.28E-01	1.00E+00	
	304.84	4.50	3.29E+00		1.21E-01	1.56E+00	
	423.70	3.20	4.93E+00		1.90E+00	2.31E+00	
	437.55	2.00	7.54E+00		1.57E+00	3.52E+00	
	537.32	25.00	6.57E-01		9.73E-02	3.05E-01	
LA-140	328.77	20.50	8.77E-01	2.44E-01	8.20E-01	4.19E-01	
	487.03	45.50	3.34E-01		-3.72E-02	1.55E-01	
	815.85	23.50	8.92E-01		-1.42E-01	4.11E-01	
	1596.49	95.49	2.44E-01		1.59E-01	1.07E-01	
CE-141	145.44	48.40	1.92E-01	1.92E-01	3.79E-02	9.29E-02	
CE-143	57.36	11.80	4.17E+02	1.84E+02	-1.04E+02	2.01E+02	
	293.26	42.00	1.84E+02		7.48E+01	8.86E+01	
	664.55	5.20	1.49E+03		5.84E+02	6.96E+02	
CE-144	133.54	10.80	6.25E-01	6.25E-01	-6.44E-03	3.02E-01	
PM-144	476.78	42.00	1.76E-01	1.00E-01	-6.87E-02	8.17E-02	
	618.01	98.60	1.00E-01		-1.56E-03	4.68E-02	
	696.49	99.49	1.06E-01		-3.23E-02	4.96E-02	
PM-145	36.85	21.70	5.33E-01	2.81E-01	-2.66E-02	2.55E-01	
	37.36	39.70	2.81E-01		-1.40E-02	1.35E-01	
	42.30	15.10	6.21E-01		1.68E-01	2.98E-01	
	72.40	2.31	2.76E+00		-6.81E-01	1.33E+00	
PM-146	453.90	39.94	1.95E-01	1.95E-01	5.80E-02	9.12E-02	
	735.90	14.01	7.15E-01		2.14E-01	3.31E-01	
	747.13	13.10	7.74E-01		5.35E-02	3.59E-01	
+ ND-147	91.11	*	28.90	8.25E-01	4.51E-01	4.04E-01	
	531.02		13.10		1.32E+00	3.66E-02	6.09E-01
PM-149	285.90	3.10	1.35E+02	1.35E+02	-7.30E+01	6.40E+01	
EU-152	121.78	20.50	3.05E-01	3.05E-01	8.60E-02	1.47E-01	
	244.69	5.40	1.36E+00		2.30E-02	6.53E-01	
	344.27	19.13	3.43E-01		1.79E-02	1.61E-01	
	778.89	9.20	1.16E+00		-3.38E-01	5.37E-01	
	964.01	10.40	1.34E+00		5.46E-01	6.25E-01	
	1085.78	7.22	1.40E+00		-4.16E-01	6.29E-01	
	1112.02	9.60	1.31E+00		6.98E-02	6.02E-01	

Analysis Report for 1606040-06

CP-5023 05-10

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	7.20E-01	3.05E-01	1.81E-01	3.19E-01	
GD-153	97.43	31.30	2.18E-01	2.18E-01	7.32E-02	1.06E-01	
	103.18	22.20	2.89E-01		-1.75E-01	1.40E-01	
EU-154	123.07	40.50	1.57E-01	1.57E-01	6.53E-02	7.60E-02	
	723.30	19.70	5.09E-01		-1.16E+00	2.36E-01	
	873.19	11.50	8.70E-01		1.86E-02	3.98E-01	
	996.32	10.30	1.06E+00		-4.55E-01	4.82E-01	
	1004.76	17.90	6.96E-01		4.10E-01	3.22E-01	
	1274.45	35.50	3.28E-01		-1.74E-02	1.48E-01	
EU-155	86.50	30.90	2.95E-01	2.95E-01	2.09E-01	1.44E-01	
	105.30	20.70	3.11E-01		2.94E-01	1.50E-01	
EU-156	811.77	10.40	1.78E+00	1.78E+00	1.23E-01	8.18E-01	
	1153.47	7.20	3.16E+00		-8.21E-01	1.45E+00	
	1230.71	8.90	2.96E+00		5.69E-01	1.37E+00	
HO-166M	184.41	72.60	1.22E-01	1.22E-01	1.45E-01	5.93E-02	
	280.45	29.60	2.57E-01		-1.17E-01	1.23E-01	
	410.94	11.10	7.35E-01		3.40E-01	3.47E-01	
	711.69	54.10	2.01E-01		1.00E-01	9.41E-02	
TM-171	66.72	0.14	5.05E+01	5.05E+01	1.70E+01	2.44E+01	
HF-172	81.75	4.52	1.33E+00	5.95E-01	-1.72E+00	6.42E-01	
	125.81	11.30	5.95E-01		-5.71E-01	2.87E-01	
LU-172	181.53	20.60	1.28E+00	7.21E-01	6.28E-02	6.16E-01	
	810.06	16.63	2.27E+00		-9.69E-01	1.04E+00	
	912.12	15.25	5.48E+00		1.27E+01	2.63E+00	
	1093.66	62.50	7.21E-01		1.29E-01	3.29E-01	
LU-173	100.72	5.24	1.21E+00	3.87E-01	-1.29E-02	5.84E-01	
	272.11	21.20	3.87E-01		2.44E-01	1.85E-01	
HF-175	343.40	84.00	9.02E-02	9.02E-02	-3.71E-03	4.24E-02	
LU-176	88.34	13.30	7.04E-01	7.52E-02	6.41E-01	3.44E-01	
	201.83	86.00	8.38E-02		-8.62E-03	4.02E-02	
	306.78	94.00	7.52E-02		1.91E-02	3.56E-02	
TA-182	67.75	41.20	1.80E-01	1.80E-01	3.86E-02	8.71E-02	
	1121.30	34.90	5.74E-01		5.91E-01	2.71E-01	
	1189.05	16.23	8.23E-01		-4.94E-01	3.75E-01	
	1221.41	26.98	5.71E-01		1.98E-01	2.63E-01	
	1231.02	11.44	1.34E+00		0.00E+00	6.18E-01	
IR-192	308.46	29.68	2.67E-01	1.70E-01	-5.96E-02	1.26E-01	
	468.07	48.10	1.70E-01		-1.33E-02	7.90E-02	
HG-203	279.19	77.30	1.27E-01	1.27E-01	7.44E-02	6.09E-02	
BI-207	569.67	97.72	8.85E-02	8.85E-02	2.36E-03	4.12E-02	
	1063.62	74.90	1.67E-01		6.25E-02	7.69E-02	
+ TL-208	583.14	*	30.22	5.03E-01	1.45E-01	1.73E+00	2.41E-01
	860.37	*	4.48	2.62E+00		1.54E+00	1.22E+00
	2614.66	*	35.85	1.45E-01		1.11E+00	5.02E-02
BI-210M	262.00		45.00	1.43E-01	1.43E-01	-1.59E-01	6.75E-02
	300.00		23.00	3.49E-01		1.12E-01	1.66E-01
+ PB-210	46.50	*	4.25	3.29E+00	3.29E+00	2.32E+00	1.61E+00
PB-211	404.84		2.90	2.48E+00	2.48E+00	-5.32E-01	1.16E+00
	831.96		2.90	3.57E+00		-1.51E+00	1.64E+00
BI-212	727.17		11.80	1.09E+00	1.09E+00	8.27E-01	5.16E-01
	1620.62		2.75	3.99E+00		-6.07E-02	1.75E+00
+ PB-212	238.63	*	44.60	2.99E-01	2.99E-01	2.06E+00	1.46E-01
	300.09	*	3.41	2.47E+00		1.66E+00	1.18E+00

Analysis Report for 1606040-06

CP-5023 05-10

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
+	BI-214	609.31 *	46.30	3.14E-01	3.14E-01	1.17E+00
		1120.29 *	15.10	1.24E+00		1.78E+00
		1764.49 *	15.80	4.30E-01		1.15E+00
		2204.22 *	4.98	1.79E+00		1.26E+00
+	PB-214	295.21 *	19.19	4.52E-01	2.71E-01	1.34E+00
		351.92 *	37.19	2.71E-01		1.36E+00
	RN-219	401.80	6.50	1.07E+00	1.07E+00	-8.93E-01
	RA-223	323.87	3.88	1.83E+00	1.83E+00	-6.74E-03
	RA-224	240.98	3.95	4.10E+00	4.10E+00	1.60E+01
	RA-225	40.00	31.00	5.70E-01	5.70E-01	-4.12E-01
+	RA-226	186.21 *	3.28	3.12E+00	3.12E+00	5.32E+00
	TH-227	50.10	8.40	8.15E-01	8.15E-01	1.16E-01
		236.00	11.50	9.31E-01		-8.20E+00
		256.20	6.30	1.13E+00		-3.23E-01
+	AC-228	338.32 *	11.40	1.09E+00	5.28E-01	2.26E+00
		911.07 *	27.70	5.28E-01		1.89E+00
		969.11 *	16.60	1.15E+00		1.15E+00
	TH-230	48.44	16.90	4.20E-01	4.20E-01	-5.68E-01
		62.85	4.60	1.81E+00		3.05E+00
		67.67	0.37	1.85E+01		3.97E+00
	PA-231	283.67	1.60	4.25E+00	3.25E+00	-2.65E+00
		302.67	2.30	3.25E+00		-2.16E+00
	TH-231	25.64	14.70	2.86E+00	1.08E+00	-1.56E+00
		84.21	6.40	1.08E+00		1.11E+00
	PA-233	311.98	38.60	2.71E-01	2.71E-01	1.57E-01
	PA-234	131.20	20.40	3.41E-01	3.41E-01	1.17E-02
		733.99	8.80	1.11E+00		-4.79E-01
		946.00	12.00	8.98E-01		-2.13E-01
	PA-234M	1001.03	0.92	1.40E+01	1.40E+01	9.03E+00
+	TH-234	63.29 *	3.80	3.25E+00	3.25E+00	1.92E+00
	U-235	143.76	10.50	6.76E-01	6.76E-01	5.42E-01
		163.35	4.70	1.46E+00		3.70E-01
		205.31	4.70	1.61E+00		2.94E-01
	NP-237	86.50	12.60	7.20E-01	7.20E-01	5.10E-01
	NP-239	106.10	22.70	1.33E+01	1.33E+01	-1.16E+01
		228.18	10.70	3.17E+01		-1.68E+01
		277.60	14.10	2.70E+01		6.48E+00
	AM-241	59.54	35.90	1.92E-01	1.92E-01	5.70E-02
	AM-243	74.67	66.00	1.37E-01	1.37E-01	-4.91E-01
	CM-243	209.75	3.29	2.62E+00	5.68E-01	2.96E+00
		228.14	10.60	6.67E-01		-3.54E-01
		277.60	14.00	5.68E-01		1.36E-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 1606040-06
CP-5023 05-10

No Action Level results available for reporting purposes.

DATA REVIEW COMMENTS REPORT

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

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

Sample Title: CP-5023 05-10

Elapsed Live time: 3600

Elapsed Real Time: 3601

Channel	1	9	17	25	33	41	49	57	65	73	81	89	97	105	113	121	129	137	145	153	161	169	177	185	193	201	209	217	225	233	241	249	257	265	273	281	289	297	305	313	321	329	337	345	353	361	
	0	1056	146	51	65	56	60	66	90	97	89	88	61	73	61	56	89	45	55	51	57	35	42	54	44	34	83	36	37	35	87	29	25	33	24	32	28	20	22	21	19	24	26	13	62	15	
	0	813	106	61	47	80	56	84	107	107	87	164	64	66	52	58	63	54	46	57	39	48	49	170	37	50	70	42	43	25	95	24	33	25	25	25	25	16	25	24	29	29	116	15	17	15	
	0	450	118	43	54	62	66	87	107	363	83	96	68	51	61	50	53	57	47	47	51	35	47	63	51	37	43	27	39	27	41	30	30	35	24	27	21	28	20	23	17	20	19	13	15	16	
	0	193	94	57	59	79	55	100	105	125	150	86	63	42	63	40	59	40	51	50	51	44	44	50	47	49	41	34	33	53	30	29	31	24	18	28	47	23	19	23	17	15	16	20			
	0	2123	72	42	55	66	81	81	100	463	123	229	53	82	61	59	37	41	47	64	37	37	37	40	40	44	38	35	24	36	28	28	30	46	20	28	40	18	25	14	27	18	23	15			
	0	316	62	45	47	87	98	96	89	293	88	118	45	61	46	56	57	56	50	47	44	52	42	35	55	52	45	26	26	25	26	21	51	35	22	28	14	19	22	19	22	22	22	22	15		
	29	119	57	59	55	136	67	145	97	92	180	75	52	65	63	62	52	58	58	57	35	46	43	39	39	37	37	31	41	578	39	32	19	36	29	27	143	29	24	17	28	27	19	24	17	53	16
	507	154	75	64	51	62	72	185	89	82	148	63	52	59	52	65	56	74	54	42	33	42	46	38	32	42	37	30	38	48	33	28	21	29	29	23	84	19	25	21	59	15	15	251	24	15	

369: 14 20 16 23 23 18 17 16

Sample Title: CP-5023 05-10

Channel	1	2	3	4	5	6	7	8
377:	21	16	21	18	20	21	13	20
385:	21	10	17	11	22	19	14	15
393:	14	14	14	20	20	11	23	17
401:	14	13	10	14	19	15	15	19
409:	29	25	14	13	12	16	10	12
417:	17	18	9	15	13	19	20	14
425:	10	16	13	10	19	14	12	18
433:	7	15	11	15	14	16	12	11
441:	14	12	13	15	17	13	16	9
449:	18	12	12	13	11	16	18	13
457:	9	14	20	8	6	21	45	18
465:	7	10	10	19	9	10	14	10
473:	12	12	12	11	10	13	10	16
481:	15	10	11	18	7	17	12	9
489:	13	11	11	7	14	9	13	12
497:	17	15	9	11	11	9	8	15
505:	13	10	6	13	27	40	78	30
513:	20	12	12	9	15	10	14	8
521:	16	12	9	9	6	16	14	6
529:	11	17	9	9	5	9	11	12
537:	16	13	6	10	15	11	16	11
545:	13	13	3	13	10	11	12	9
553:	12	13	6	11	7	8	5	12
561:	8	12	14	9	9	12	13	9
569:	13	16	10	12	14	13	13	13
577:	11	9	18	11	7	27	145	82
585:	14	17	8	9	8	9	10	12
593:	9	6	9	13	11	10	10	9
601:	14	18	9	10	8	10	13	17
609:	126	117	9	9	10	11	7	12
617:	12	7	9	6	14	9	9	14
625:	11	4	12	11	8	12	7	12
633:	5	7	10	10	15	6	10	6
641:	11	8	4	5	6	8	8	11
649:	7	5	10	18	6	11	5	6
657:	7	8	10	4	9	8	14	5
665:	13	11	7	9	6	9	7	10
673:	9	9	4	7	4	8	8	9
681:	12	11	6	8	4	4	11	14
689:	11	3	13	9	9	10	6	10
697:	10	6	12	12	9	15	12	14
705:	12	8	5	15	7	7	7	16
713:	8	8	4	10	9	7	8	12
721:	8	6	10	5	4	10	38	18
729:	13	6	10	7	7	4	4	12
737:	7	4	15	5	2	8	12	9
745:	6	10	13	4	6	5	6	5
753:	6	9	9	8	6	8	7	6
761:	8	6	6	11	7	11	8	17
769:	11	10	6	14	9	11	12	10
777:	7	7	9	8	9	5	7	9
785:	10	15	4	4	8	6	6	5
793:	5	10	30	15	8	9	7	8

801: 4 12 6 5 8 8 6 3

Sample Title: CP-5023 05-10

Channel	1	2	3	4	5	6	7	8
809:	6	6	11	4	6	10	6	5
817:	6	9	5	10	5	10	5	6
825:	4	7	5	8	5	5	4	4
833:	8	8	12	13	9	9	3	14
841:	8	7	6	7	11	10	8	10
849:	5	6	11	3	6	11	10	9
857:	8	6	6	12	21	8	5	5
865:	5	7	5	2	6	8	4	5
873:	3	11	3	5	8	5	3	10
881:	6	8	10	3	3	3	6	6
889:	4	3	7	3	5	4	6	4
897:	6	0	5	3	8	3	6	5
905:	6	6	6	5	3	27	73	60
913:	10	5	6	5	3	1	4	5
921:	4	2	6	6	5	2	6	12
929:	3	1	10	6	8	13	6	5
937:	10	5	8	10	6	6	3	8
945:	6	5	3	7	8	10	5	3
953:	6	4	5	5	4	10	6	9
961:	9	6	2	10	26	7	7	20
969:	58	29	4	8	4	8	3	9
977:	5	2	3	8	5	5	6	3
985:	3	7	3	3	9	5	7	2
993:	6	6	5	5	6	5	4	8
1001:	10	8	13	5	3	3	7	2
1009:	4	3	8	3	7	6	4	6
1017:	5	3	4	2	4	7	7	3
1025:	7	5	13	4	4	4	8	6
1033:	5	5	3	6	6	3	5	4
1041:	6	5	7	10	8	5	4	6
1049:	6	4	4	4	5	5	2	4
1057:	6	3	3	3	7	8	4	12
1065:	4	7	3	9	6	1	2	3
1073:	7	3	4	9	4	7	7	6
1081:	4	4	5	5	2	3	4	4
1089:	3	7	5	3	5	4	6	6
1097:	5	5	7	6	2	8	5	7
1105:	5	8	6	10	9	8	4	4
1113:	7	4	6	8	9	10	11	35
1121:	23	9	5	2	6	5	4	5
1129:	5	2	0	1	6	1	6	8
1137:	3	11	8	3	3	7	7	6
1145:	4	6	4	5	9	3	3	8
1153:	4	7	7	7	6	7	8	7
1161:	6	6	4	7	2	5	6	4
1169:	7	2	6	2	6	3	5	4
1177:	8	7	7	7	5	5	5	9
1185:	6	2	7	8	1	4	9	5
1193:	7	9	5	4	5	6	5	3
1201:	11	7	3	6	7	15	8	15
1209:	4	1	7	10	7	6	5	6
1217:	4	8	7	6	3	6	10	7
1225:	6	4	9	8	2	9	9	6

1233: 5 7 6 8 8 17 12 9

Sample Title: CP-5023 05-10

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1241:	9	6	5	7	4	8	5	8
1249:	5	2	4	2	6	5	6	5
1257:	7	2	2	8	3	8	7	3
1265:	3	1	2	4	3	11	7	1
1273:	2	5	5	5	3	6	3	2
1281:	6	5	2	4	5	2	2	4
1289:	3	3	4	3	6	4	4	4
1297:	6	2	5	5	5	3	5	4
1305:	2	4	3	6	1	2	7	3
1313:	3	2	3	1	3	4	3	6
1321:	5	6	4	1	1	8	5	4
1329:	1	3	3	1	3	4	4	5
1337:	3	5	3	2	4	2	0	4
1345:	2	4	1	2	3	2	2	3
1353:	3	1	2	2	3	1	2	1
1361:	2	3	1	2	2	1	1	2
1369:	0	2	4	3	1	2	2	5
1377:	7	6	1	2	2	1	2	2
1385:	6	3	1	0	3	1	1	2
1393:	1	0	1	3	5	3	2	2
1401:	4	2	3	3	0	1	4	6
1409:	2	4	1	2	1	2	5	5
1417:	1	3	2	2	2	0	1	4
1425:	1	4	1	3	4	2	1	0
1433:	2	0	2	4	2	1	3	5
1441:	4	1	1	2	2	2	1	3
1449:	0	5	1	1	3	2	1	3
1457:	6	3	23	153	265	115	9	2
1465:	1	3	1	0	1	1	2	1
1473:	1	3	1	1	1	2	0	0
1481:	4	0	1	1	1	1	1	1
1489:	3	0	0	1	1	1	2	2
1497:	6	0	1	0	3	2	3	2
1505:	1	2	3	1	2	4	1	1
1513:	2	0	0	2	1	0	4	2
1521:	0	0	2	1	1	0	3	2
1529:	2	1	1	2	1	3	0	0
1537:	0	2	1	0	2	2	1	0
1545:	0	1	1	0	0	1	1	1
1553:	0	1	1	1	2	0	1	0
1561:	3	1	0	1	1	1	1	2
1569:	0	3	1	0	0	4	2	1
1577:	2	3	1	3	4	0	4	4
1585:	1	3	5	8	1	1	2	6
1593:	3	2	1	1	2	2	1	1
1601:	0	0	1	0	0	4	3	1
1609:	2	0	0	1	0	1	2	1
1617:	2	0	1	1	1	5	3	3
1625:	4	2	0	0	2	5	1	0
1633:	1	1	2	4	3	0	0	0
1641:	2	0	1	1	0	0	1	3
1649:	1	1	2	0	3	1	2	0
1657:	1	0	1	1	1	2	0	0

1665: 5 0 4 1 1 1 0 4

Sample Title: CP-5023 05-10

Channel	1	2	3	4	5	6	7	8
1673:	0	2	2	3	1	2	0	0
1681:	0	2	1	0	1	2	2	0
1689:	1	2	0	2	2	0	0	5
1697:	3	4	2	1	0	1	1	3
1705:	1	1	0	0	1	0	1	0
1713:	1	0	2	0	0	0	1	0
1721:	0	2	0	0	1	2	1	1
1729:	5	2	2	3	1	3	0	1
1737:	1	2	3	0	2	1	1	1
1745:	1	2	0	2	1	1	1	1
1753:	1	0	1	1	3	0	0	1
1761:	0	2	2	20	13	0	1	0
1769:	2	0	2	0	2	1	1	2
1777:	0	0	0	3	1	0	3	0
1785:	2	2	2	1	0	0	0	0
1793:	2	1	1	1	0	0	0	3
1801:	0	2	1	1	1	0	0	0
1809:	1	2	2	0	0	1	1	0
1817:	1	2	1	1	1	0	0	0
1825:	1	1	0	0	1	1	1	0
1833:	1	0	1	0	1	4	0	1
1841:	1	1	0	1	1	1	3	8
1849:	2	1	0	2	1	1	1	1
1857:	0	0	2	0	0	0	1	1
1865:	1	1	1	2	1	3	0	0
1873:	0	2	1	1	0	2	0	2
1881:	2	1	1	0	0	2	0	2
1889:	0	0	3	1	3	1	0	1
1897:	0	0	1	1	1	0	4	1
1905:	1	0	2	3	2	1	1	1
1913:	1	2	1	1	0	0	0	2
1921:	0	0	1	0	1	1	1	2
1929:	0	1	3	0	0	0	0	0
1937:	1	0	1	1	0	3	0	0
1945:	0	0	1	0	0	1	1	0
1953:	0	1	0	1	1	1	2	0
1961:	1	2	0	1	1	0	0	0
1969:	0	1	0	2	2	1	1	1
1977:	1	2	0	0	1	0	1	0
1985:	1	0	2	1	0	0	0	0
1993:	2	0	0	0	0	0	1	2
2001:	1	0	1	0	1	0	0	1
2009:	0	1	0	0	0	1	1	0
2017:	1	2	0	0	0	0	1	1
2025:	1	1	0	1	1	0	2	1
2033:	1	0	1	1	2	3	1	0
2041:	1	0	1	0	2	1	0	0
2049:	1	1	1	1	1	0	0	0
2057:	0	0	0	2	0	2	1	0
2065:	0	0	0	1	0	0	0	1
2073:	0	0	1	2	0	1	0	0
2081:	0	0	1	1	0	0	2	0
2089:	2	0	1	2	0	1	0	1

2097: 2 0 1 2 3 5 5 6

Sample Title: CP-5023 05-10

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

2529: 0 0 1 1 0 0 0 1

Sample Title: CP-5023 05-10

Channel	1	2	3	4	5	6	7	8	9
2537:	0	0	0	0	1	0	0	0	0
2545:	0	0	0	0	0	0	0	0	0
2553:	0	1	0	0	0	0	0	0	2
2561:	0	0	0	0	0	0	0	0	0
2569:	1	0	1	0	0	0	0	0	0
2577:	1	0	0	0	0	1	1	0	0
2585:	1	0	1	0	0	1	0	0	0
2593:	2	0	2	0	0	1	0	0	0
2601:	0	1	0	0	0	1	0	0	0
2609:	0	1	2	5	13	20	20	9	9
2617:	1	0	0	0	1	0	0	0	0
2625:	1	0	0	1	0	0	0	0	1
2633:	0	0	0	0	0	0	0	0	0
2641:	0	1	0	0	1	1	0	0	0
2649:	0	0	0	2	0	0	1	2	2
2657:	0	0	1	0	0	1	0	0	0
2665:	0	0	0	0	0	0	1	0	0
2673:	0	2	1	0	0	0	1	0	0
2681:	0	0	1	1	0	1	0	1	1
2689:	0	1	0	0	0	0	0	0	0
2697:	1	1	0	0	0	0	1	0	0
2705:	0	0	1	0	0	1	0	2	2
2713:	1	1	0	0	0	0	1	0	0
2721:	0	1	0	0	0	0	1	1	1
2729:	1	0	0	1	0	0	0	1	1
2737:	2	0	2	0	2	0	0	1	1
2745:	0	1	0	0	1	0	0	0	0
2753:	0	1	0	0	0	0	0	0	0
2761:	0	1	0	0	1	0	0	0	0
2769:	0	1	0	0	1	0	0	0	0
2777:	0	0	0	0	1	0	0	0	0
2785:	0	0	0	0	0	0	0	0	0
2793:	1	0	0	0	0	0	0	0	0
2801:	0	0	0	0	2	1	0	0	0
2809:	0	0	0	1	0	0	0	0	0
2817:	0	0	0	0	0	0	0	1	1
2825:	0	0	0	1	0	0	1	0	0
2833:	0	0	1	1	0	0	0	0	0
2841:	3	0	0	0	1	0	0	0	0
2849:	0	0	0	0	0	0	1	2	2
2857:	0	0	1	0	1	1	0	0	0
2865:	1	0	0	0	1	1	0	0	0
2873:	0	0	0	0	0	1	0	0	0
2881:	0	0	0	0	1	0	1	0	0
2889:	0	0	0	0	0	0	1	1	1
2897:	0	0	0	0	0	0	0	1	1
2905:	0	0	0	2	0	0	0	0	0
2913:	0	0	0	0	0	1	0	0	0
2921:	1	1	0	0	0	2	1	0	0
2929:	2	0	0	0	0	0	1	0	0
2937:	0	0	0	0	0	1	0	0	0
2945:	0	0	0	1	0	0	0	0	0
2953:	0	0	0	0	0	0	1	0	0

2961: 0 0 0 0 0 0 0 0

Sample Title: CP-5023 05-10

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

3393: 0 0 0 0 0 0 0 0 1

Sample Title: CP-5023 05-10

Channel	1	2	3	4	5	6	7	8	9
3401:	0	0	0	0	0	0	0	0	0
3409:	0	0	0	0	0	0	0	1	0
3417:	1	0	0	1	0	0	0	0	0
3425:	0	0	0	1	0	0	0	0	0
3433:	1	1	0	0	1	2	0	0	0
3441:	1	0	0	0	0	0	0	0	0
3449:	0	0	0	0	0	1	0	0	0
3457:	1	0	0	0	0	0	0	0	0
3465:	2	0	0	0	0	0	0	1	0
3473:	0	0	0	1	0	0	0	0	0
3481:	0	0	1	0	1	0	0	1	2
3489:	0	0	1	0	0	0	0	0	0
3497:	0	0	0	0	0	0	0	0	0
3505:	0	0	0	0	0	0	0	0	0
3513:	0	0	0	0	0	0	1	0	0
3521:	0	0	0	0	0	0	0	1	0
3529:	0	0	0	0	0	0	0	0	0
3537:	0	0	0	1	1	1	0	0	0
3545:	0	0	1	0	2	0	0	0	1
3553:	0	0	0	1	0	0	0	1	0
3561:	0	0	0	0	0	0	1	0	0
3569:	0	0	0	0	0	0	0	0	0
3577:	0	0	0	1	1	0	0	1	0
3585:	0	0	0	0	0	0	0	0	0
3593:	1	0	0	0	0	0	0	1	1
3601:	0	0	0	0	0	0	0	0	0
3609:	0	0	0	0	0	0	0	0	0
3617:	0	0	0	0	2	1	0	0	0
3625:	1	0	0	0	0	0	0	0	1
3633:	0	0	0	1	0	0	0	0	0
3641:	0	0	0	1	0	1	0	0	0
3649:	0	0	0	0	0	0	0	0	0
3657:	0	1	0	0	0	1	0	0	0
3665:	0	0	0	0	0	0	0	0	0
3673:	0	0	0	0	0	0	0	0	0
3681:	0	0	1	0	1	1	1	1	0
3689:	0	0	0	1	0	0	0	0	0
3697:	0	0	0	0	1	0	0	0	0
3705:	1	0	0	0	0	0	0	0	0
3713:	0	0	0	0	1	0	0	0	0
3721:	0	0	0	0	0	1	0	0	0
3729:	0	0	1	0	1	0	0	0	0
3737:	0	0	0	1	0	0	0	0	0
3745:	0	0	0	0	0	0	0	0	0
3753:	0	0	0	0	0	0	0	0	0
3761:	1	0	0	0	0	0	0	0	0
3769:	0	0	0	0	0	0	0	0	0
3777:	0	0	0	0	0	1	0	0	0
3785:	1	0	0	0	0	0	0	0	1
3793:	0	0	0	0	0	0	1	0	0
3801:	0	0	0	0	1	0	0	0	0
3809:	0	0	0	0	0	0	0	0	1
3817:	1	1	0	0	0	0	0	0	0

3825: 0 0 0 0 0 0 0 0 0

Sample Title: CP-5023 05-10

Channel	-----	-----	-----	-----	-----	-----	-----	-----
3833:	0	0	0	0	1	0	0	0
3841:	0	1	0	0	1	0	0	0
3849:	0	0	0	0	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	0	0	0	0	0
3881:	0	0	0	1	0	0	0	0
3889:	0	0	0	2	0	0	0	0
3897:	0	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	1	0	0
3937:	0	0	0	0	0	0	0	0
3945:	0	1	0	0	0	0	0	0
3953:	0	1	0	0	0	0	0	0
3961:	0	0	0	0	0	1	0	0
3969:	0	0	0	0	0	0	0	0
3977:	0	0	0	0	1	0	0	0
3985:	0	0	0	0	0	0	0	0
3993:	0	0	0	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	0	0	1	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	2	1	1	1	1
4049:	0	0	0	0	0	0	0	0
4057:	0	0	0	0	0	0	0	0
4065:	0	0	0	0	0	0	0	0
4073:	0	0	0	0	0	0	0	0
4081:	1	0	0	0	0	0	0	0
4089:	0	1	0	0	0	0	0	0

ICB
6/15/16Analysis Report for 1606040-07
CP-5023 10-15

GAMMA SPECTRUM ANALYSIS

Sample Identification : 1606040-07
Sample Description : CP-5023 10-15
Sample Type : SOIL

Sample Size : 3.329E+02 grams
Facility : Countroom

Sample Taken On : 6/2/2016 1:10:15PM
Acquisition Started : 6/15/2016 5:19:24PM

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 : 38947

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
6/16/16

Analysis Report for 1606040-07
CP-5023 10-15

PEAK LOCATE REPORT

Peak Locate Performed on : 6/15/2016 6:19:29PM
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	47.12	47.47	0.0000	0.00
2	76.99	77.33	0.0000	0.00
3	84.94	85.28	0.0000	0.00
4	87.95	88.28	0.0000	0.00
5	90.38	90.72	0.0000	0.00
6	93.50	93.84	0.0000	0.00
7	100.13	100.47	0.0000	0.00
8	186.77	187.08	0.0000	0.00
9	210.10	210.40	0.0000	0.00
10	239.72	240.01	0.0000	0.00
11	271.11	271.39	0.0000	0.00
12	278.00	278.28	0.0000	0.00
13	295.85	296.12	0.0000	0.00
14	300.56	300.83	0.0000	0.00
15	329.25	329.50	0.0000	0.00
16	338.94	339.19	0.0000	0.00
17	349.91	350.16	0.0000	0.00
18	352.69	352.94	0.0000	0.00
19	409.60	409.83	0.0000	0.00
20	460.96	461.17	0.0000	0.00
21	463.96	464.17	0.0000	0.00
22	511.23	511.43	0.0000	0.00
23	583.80	583.97	0.0000	0.00
24	610.04	610.20	0.0000	0.00
25	648.40	648.54	0.0000	0.00
26	727.81	727.93	0.0000	0.00
27	795.16	795.25	0.0000	0.00
28	805.06	805.15	0.0000	0.00
29	912.00	912.06	0.0000	0.00
30	965.04	965.08	0.0000	0.00
31	969.98	970.02	0.0000	0.00
32	1117.02	1117.00	0.0000	0.00
33	1120.96	1120.94	0.0000	0.00
34	1126.61	1126.58	0.0000	0.00
35	1202.36	1202.31	0.0000	0.00
36	1205.49	1205.44	0.0000	0.00
37	1282.77	1282.69	0.0000	0.00
38	1378.41	1378.29	0.0000	0.00
39	1461.55	1461.41	0.0000	0.00
40	1510.11	1509.95	0.0000	0.00
41	1588.70	1588.51	0.0000	0.00
42	1594.12	1593.92	0.0000	0.00

Analysis Report for 1606040-07
CP-5023 10-15

<i>Peak No.</i>	<i>Energy (keV)</i>	<i>Centroid Channel</i>	<i>Centroid Uncertainty</i>	<i>Peak Significance</i>
43	1625.77	1625.57	0.0000	0.00
44	1662.42	1662.21	0.0000	0.00
45	1730.06	1729.82	0.0000	0.00
46	1751.17	1750.92	0.0000	0.00
47	1764.95	1764.70	0.0000	0.00
48	2104.13	2103.74	0.0000	0.00
49	2204.50	2204.08	0.0000	0.00
50	2307.36	2306.89	0.0000	0.00
51	2448.98	2448.47	0.0000	0.00
52	2614.95	2614.37	0.0000	0.00

? = Adjacent peak noted

Errors quoted at 2.000sigma

Analysis Report for 1606040-07

CP-5023 10-15

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 6/15/2016 6:19:29PM

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	47.12	43 - 49	47.47	1.30E+02	71.55	8.37E+02	1.72
	2	76.99	72 - 82	77.33	1.01E+03	142.40	2.16E+03	3.22
M	3	84.94	84 - 97	85.28	1.20E+02	44.80	4.88E+02	1.62
m	4	87.95	84 - 97	88.28	1.44E+02	65.51	7.56E+02	1.63
m	5	90.38	84 - 97	90.72	1.34E+02	66.75	7.16E+02	1.64
m	6	93.50	84 - 97	93.84	3.38E+02	71.49	6.47E+02	1.64
	7	100.13	99 - 103	100.47	5.07E+01	53.74	5.93E+02	1.30
	8	186.77	183 - 191	187.08	2.70E+02	75.12	6.93E+02	1.49
	9	210.10	208 - 213	210.40	7.84E+01	49.23	4.25E+02	1.47
	10	239.72	234 - 245	240.01	1.01E+03	100.72	7.62E+02	1.84
	11	271.11	267 - 274	271.39	6.23E+01	52.73	4.17E+02	1.85
	12	278.00	275 - 281	278.28	5.56E+01	44.03	3.13E+02	1.38
M	13	295.85	292 - 304	296.12	2.32E+02	43.02	2.09E+02	1.71
m	14	300.56	292 - 304	300.83	4.39E+01	38.09	2.39E+02	1.91
	15	329.25	325 - 333	329.50	6.21E+01	49.42	3.38E+02	1.41
	16	338.94	335 - 343	339.19	1.86E+02	54.58	3.38E+02	1.40
M	17	349.91	348 - 357	350.16	2.50E+01	21.79	1.34E+02	1.78
m	18	352.69	348 - 357	352.94	4.03E+02	49.91	2.09E+02	1.79
	19	409.60	407 - 413	409.83	3.50E+01	36.04	2.12E+02	1.60
M	20	460.96	460 - 467	461.17	1.54E+01	12.37	4.63E+01	1.87
m	21	463.96	460 - 467	464.17	7.96E+01	29.82	1.21E+02	1.88
	22	511.23	506 - 516	511.43	1.88E+02	48.58	2.13E+02	2.40
	23	583.80	579 - 588	583.97	2.29E+02	49.22	2.15E+02	1.69
	24	610.04	606 - 614	610.20	2.38E+02	46.93	1.91E+02	1.59
	25	648.40	645 - 652	648.54	2.23E+01	26.61	1.01E+02	3.13
	26	727.81	724 - 734	727.93	4.92E+01	38.05	1.72E+02	2.41
	27	795.16	791 - 798	795.25	3.93E+01	27.50	9.93E+01	1.48
	28	805.06	801 - 809	805.15	2.14E+01	25.87	8.91E+01	4.83
	29	912.00	909 - 917	912.06	1.65E+02	35.34	9.24E+01	1.81
M	30	965.04	961 - 975	965.08	4.25E+01	20.35	5.20E+01	2.12
m	31	969.98	961 - 975	970.02	1.10E+02	26.30	3.97E+01	2.19
M	32	1117.02	1116 - 1130	1117.00	1.26E+01	8.72	2.12E+01	2.05
m	33	1120.96	1116 - 1130	1120.94	6.98E+01	26.53	6.66E+01	2.74
m	34	1126.61	1116 - 1130	1126.58	1.55E+01	19.39	4.06E+01	2.49
M	35	1202.36	1201 - 1210	1202.31	1.11E+01	11.31	2.59E+01	2.27
m	36	1205.49	1201 - 1210	1205.44	2.61E+01	23.41	6.26E+01	2.53
	37	1282.77	1276 - 1290	1282.69	4.21E+01	26.87	5.18E+01	2.79
	38	1378.41	1374 - 1382	1378.29	2.65E+01	17.60	3.10E+01	1.51
	39	1461.55	1455 - 1467	1461.41	6.86E+02	55.96	4.54E+01	2.32
	40	1510.11	1505 - 1515	1509.95	1.89E+01	15.52	2.22E+01	2.04

Analysis Report for 1606040-07

CP-5023 10-15

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
41	1588.70	1585 -	1591	1588.51	8.82E+00	11.37	1.64E+01	1.44
42	1594.12	1592 -	1596	1593.92	8.08E+00	9.12	9.85E+00	2.76
43	1625.77	1624 -	1628	1625.57	4.75E+00	6.67	6.50E+00	1.27
44	1662.42	1659 -	1665	1662.21	1.15E+01	8.02	3.00E+00	3.97
45	1730.06	1726 -	1734	1729.82	9.66E+00	11.17	1.27E+01	2.10
46	1751.17	1747 -	1754	1750.92	1.30E+01	7.21	0.00E+00	1.67
47	1764.95	1759 -	1768	1764.70	4.47E+01	17.78	1.86E+01	1.95
48	2104.13	2099 -	2108	2103.74	1.67E+01	10.05	4.53E+00	2.98
49	2204.50	2200 -	2208	2204.08	2.06E+01	10.59	4.74E+00	1.60
50	2307.36	2304 -	2310	2306.89	9.25E+00	8.51	5.50E+00	3.76
51	2448.98	2444 -	2452	2448.47	1.50E+01	7.75	0.00E+00	3.12
52	2614.95	2611 -	2621	2614.37	9.35E+01	21.37	1.10E+01	2.99

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 : 6/15/2016 6:19:29PM

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	47.12	43 -	49	1.30E+02	71.55	8.37E+02	5.58E+01
2	76.99	72 -	82	1.01E+03	142.40	2.16E+03	1.05E+02
M 3	84.94	84 -	97	1.20E+02	44.80	4.88E+02	3.63E+01
m 4	87.95	84 -	97	1.44E+02	65.51	7.56E+02	4.52E+01
m 5	90.38	84 -	97	1.34E+02	66.75	7.16E+02	4.40E+01
m 6	93.50	84 -	97	3.38E+02	71.49	6.47E+02	4.18E+01
7	100.13	99 -	103	5.07E+01	53.74	5.93E+02	4.26E+01
8	186.77	183 -	191	2.70E+02	75.12	6.93E+02	5.55E+01
9	210.10	208 -	213	7.84E+01	49.23	4.25E+02	3.78E+01
10	239.72	234 -	245	1.01E+03	100.72	7.62E+02	6.42E+01
11	271.11	267 -	274	6.23E+01	52.73	4.17E+02	4.14E+01
12	278.00	275 -	281	5.56E+01	44.03	3.13E+02	3.40E+01
M 13	295.85	292 -	304	2.32E+02	43.02	2.09E+02	2.38E+01
m 14	300.56	292 -	304	4.39E+01	38.09	2.39E+02	2.54E+01
15	329.25	325 -	333	6.21E+01	49.42	3.38E+02	3.85E+01
16	338.94	335 -	343	1.86E+02	54.58	3.38E+02	3.89E+01

: 00498

Analysis Report for 1606040-07

CP-5023 10-15

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
M	17	349.91	348 -	357	2.50E+01	21.79	1.34E+02	1.90E+01
m	18	352.69	348 -	357	4.03E+02	49.91	2.09E+02	2.37E+01
	19	409.60	407 -	413	3.50E+01	36.04	2.12E+02	2.80E+01
M	20	460.96	460 -	467	1.54E+01	12.37	4.63E+01	1.12E+01
m	21	463.96	460 -	467	7.96E+01	29.82	1.21E+02	1.81E+01
	22	511.23	506 -	516	1.88E+02	48.58	2.13E+02	3.29E+01
	23	583.80	579 -	588	2.29E+02	49.22	2.15E+02	3.19E+01
	24	610.04	606 -	614	2.38E+02	46.93	1.91E+02	2.91E+01
	25	648.40	645 -	652	2.23E+01	26.61	1.01E+02	2.04E+01
	26	727.81	724 -	734	4.92E+01	38.05	1.72E+02	2.91E+01
	27	795.16	791 -	798	3.93E+01	27.50	9.93E+01	2.01E+01
	28	805.06	801 -	809	2.14E+01	25.87	8.91E+01	1.99E+01
	29	912.00	909 -	917	1.65E+02	35.34	9.24E+01	2.00E+01
M	30	965.04	961 -	975	4.25E+01	20.35	5.20E+01	1.19E+01
m	31	969.98	961 -	975	1.10E+02	26.30	3.97E+01	1.04E+01
M	32	1117.02	1116 -	1130	1.26E+01	8.72	2.12E+01	7.57E+00
m	33	1120.96	1116 -	1130	6.98E+01	26.53	6.66E+01	1.34E+01
m	34	1126.61	1116 -	1130	1.55E+01	19.39	4.06E+01	1.05E+01
M	35	1202.36	1201 -	1210	1.11E+01	11.31	2.59E+01	8.36E+00
m	36	1205.49	1201 -	1210	2.61E+01	23.41	6.26E+01	1.30E+01
	37	1282.77	1276 -	1290	4.21E+01	26.87	5.18E+01	1.93E+01
	38	1378.41	1374 -	1382	2.65E+01	17.60	3.10E+01	1.17E+01
	39	1461.55	1455 -	1467	6.86E+02	55.96	4.54E+01	1.62E+01
	40	1510.11	1505 -	1515	1.89E+01	15.52	2.22E+01	1.06E+01
	41	1588.70	1585 -	1591	8.82E+00	11.37	1.64E+01	7.97E+00
	42	1594.12	1592 -	1596	8.08E+00	9.12	9.85E+00	5.87E+00
	43	1625.77	1624 -	1628	4.75E+00	6.67	6.50E+00	4.15E+00
	44	1662.42	1659 -	1665	1.15E+01	8.02	3.00E+00	3.51E+00
	45	1730.06	1726 -	1734	9.66E+00	11.17	1.27E+01	7.63E+00
	46	1751.17	1747 -	1754	1.30E+01	7.21	0.00E+00	0.00E+00
	47	1764.95	1759 -	1768	4.47E+01	17.78	1.86E+01	9.63E+00
	48	2104.13	2099 -	2108	1.67E+01	10.05	4.53E+00	4.80E+00
	49	2204.50	2200 -	2208	2.06E+01	10.59	4.74E+00	4.48E+00
	50	2307.36	2304 -	2310	9.25E+00	8.51	5.50E+00	4.90E+00
	51	2448.98	2444 -	2452	1.50E+01	7.75	0.00E+00	0.00E+00
	52	2614.95	2611 -	2621	9.35E+01	21.37	1.10E+01	7.47E+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 1606040-07
CP-5023 10-15

PEAK WITH NID REPORT

Peak Analysis Performed on : 6/15/2016 6:19:29PM

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	43 -	49	47.47	1.30E+02	71.55	8.37E+02	PB-210
	2	72 -	82	77.33	1.01E+03	142.40	2.16E+03	.....
M	3	84 -	97	85.28	1.20E+02	44.80	4.88E+02	TH-231
m	4	84 -	97	88.28	1.44E+02	65.51	7.56E+02	CD-109 SN-126 LU-176
m	5	84 -	97	90.72	1.34E+02	66.75	7.16E+02	ND-147
m	6	84 -	97	93.84	3.38E+02	71.49	6.47E+02	GA-67
	7	99 -	103	100.47	5.07E+01	53.74	5.93E+02	LU-173
	8	183 -	191	187.08	2.70E+02	75.12	6.93E+02	RA-226
	9	208 -	213	210.40	7.84E+01	49.23	4.25E+02	CM-243
	10	234 -	245	240.01	1.01E+03	100.72	7.62E+02	.....
	11	267 -	274	271.39	6.23E+01	52.73	4.17E+02	LU-173
	12	275 -	281	278.28	5.56E+01	44.03	3.13E+02	CM-243 NP-239
M	13	292 -	304	296.12	2.32E+02	43.02	2.09E+02	PB-214
m	14	292 -	304	300.83	4.39E+01	38.09	2.39E+02	GA-67 PB-212 BI-210M
	15	325 -	333	329.50	6.21E+01	49.42	3.38E+02	LA-140
	16	335 -	343	339.19	1.86E+02	54.58	3.38E+02	AC-228
M	17	348 -	357	350.16	2.50E+01	21.79	1.34E+02	.....
m	18	348 -	357	352.94	4.03E+02	49.91	2.09E+02	PB-214
	19	407 -	413	409.83	3.50E+01	36.04	2.12E+02	.....
M	20	460 -	467	461.17	1.54E+01	12.37	4.63E+01	.....
m	21	460 -	467	464.17	7.96E+01	29.82	1.21E+02	SB-125
	22	506 -	516	511.43	1.88E+02	48.58	2.13E+02	.....
	23	579 -	588	583.97	2.29E+02	49.22	2.15E+02	TL-208
	24	606 -	614	610.20	2.38E+02	46.93	1.91E+02	BI-214
	25	645 -	652	648.54	2.23E+01	26.61	1.01E+02	.....
	26	724 -	734	727.93	4.92E+01	38.05	1.72E+02	BI-212
	27	791 -	798	795.25	3.93E+01	27.50	9.93E+01	CS-134
	28	801 -	809	805.15	2.14E+01	25.87	8.91E+01	.....
	29	909 -	917	912.06	1.65E+02	35.34	9.24E+01	LU-172 AC-228
M	30	961 -	975	965.08	4.25E+01	20.35	5.20E+01	.....
m	31	961 -	975	970.02	1.10E+02	26.30	3.97E+01	AC-228
M	32	1116 -	1130	1117.00	1.26E+01	8.72	2.12E+01	.....
m	33	1116 -	1130	1120.94	6.98E+01	26.53	6.66E+01	TA-182 SC-46 BI-214

Analysis Report for 1606040-07

CP-5023 10-15

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
m	34	1126.61	1116 -	1130	1126.58	1.55E+01	19.39	4.06E+01	.....
M	35	1202.36	1201 -	1210	1202.31	1.11E+01	11.31	2.59E+01	.....
m	36	1205.49	1201 -	1210	1205.44	2.61E+01	23.41	6.26E+01	.....
	37	1282.77	1276 -	1290	1282.69	4.21E+01	26.87	5.18E+01	.....
	38	1378.41	1374 -	1382	1378.29	2.65E+01	17.60	3.10E+01	.....
	39	1461.55	1455 -	1467	1461.41	6.86E+02	55.96	4.54E+01	K-40
	40	1510.11	1505 -	1515	1509.95	1.89E+01	15.52	2.22E+01	.....
	41	1588.70	1585 -	1591	1588.51	8.82E+00	11.37	1.64E+01	.....
	42	1594.12	1592 -	1596	1593.92	8.08E+00	9.12	9.85E+00	.....
	43	1625.77	1624 -	1628	1625.57	4.75E+00	6.67	6.50E+00	.....
	44	1662.42	1659 -	1665	1662.21	1.15E+01	8.02	3.00E+00	.....
	45	1730.06	1726 -	1734	1729.82	9.66E+00	11.17	1.27E+01	.....
	46	1751.17	1747 -	1754	1750.92	1.30E+01	7.21	0.00E+00	.....
	47	1764.95	1759 -	1768	1764.70	4.47E+01	17.78	1.86E+01	BI-214
	48	2104.13	2099 -	2108	2103.74	1.67E+01	10.05	4.53E+00	.....
	49	2204.50	2200 -	2208	2204.08	2.06E+01	10.59	4.74E+00	BI-214
	50	2307.36	2304 -	2310	2306.89	9.25E+00	8.51	5.50E+00	.....
	51	2448.98	2444 -	2452	2448.47	1.50E+01	7.75	0.00E+00	.....
	52	2614.95	2611 -	2621	2614.37	9.35E+01	21.37	1.10E+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 : 6/15/2016 6:19:29PM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	47.12	1.30E+02	71.55	1.72E-02	1.78E-03
	2	76.99	1.01E+03	142.40	2.77E-02	2.37E-03
M	3	84.94	1.20E+02	44.80	2.84E-02	2.64E-03
m	4	87.95	1.44E+02	65.51	2.85E-02	2.74E-03
m	5	90.38	1.34E+02	66.75	2.85E-02	2.69E-03
m	6	93.50	3.38E+02	71.49	2.86E-02	2.63E-03
	7	100.13	5.07E+01	53.74	2.84E-02	2.50E-03
	8	186.77	2.70E+02	75.12	2.23E-02	2.02E-03
	9	210.10	7.84E+01	49.23	2.08E-02	1.85E-03
	10	239.72	1.01E+03	100.72	1.92E-02	1.63E-03
	11	271.11	6.23E+01	52.73	1.77E-02	1.40E-03

Analysis Report for 1606040-07
CP-5023 10-15

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	12	278.00	5.56E+01	44.03	1.74E-02	1.35E-03
M	13	295.85	2.32E+02	43.02	1.67E-02	1.31E-03
m	14	300.56	4.39E+01	38.09	1.65E-02	1.30E-03
	15	329.25	6.21E+01	49.42	1.55E-02	1.24E-03
	16	338.94	1.86E+02	54.58	1.52E-02	1.22E-03
M	17	349.91	2.50E+01	21.79	1.48E-02	1.20E-03
m	18	352.69	4.03E+02	49.91	1.47E-02	1.19E-03
	19	409.60	3.50E+01	36.04	1.32E-02	1.10E-03
M	20	460.96	1.54E+01	12.37	1.21E-02	1.04E-03
m	21	463.96	7.96E+01	29.82	1.21E-02	1.04E-03
	22	511.23	1.88E+02	48.58	1.12E-02	9.90E-04
	23	583.80	2.29E+02	49.22	1.02E-02	9.15E-04
	24	610.04	2.38E+02	46.93	9.82E-03	8.88E-04
	25	648.40	2.23E+01	26.61	9.36E-03	8.48E-04
	26	727.81	4.92E+01	38.05	8.55E-03	7.75E-04
	27	795.16	3.93E+01	27.50	7.97E-03	7.15E-04
	28	805.06	2.14E+01	25.87	7.89E-03	7.06E-04
	29	912.00	1.65E+02	35.34	7.14E-03	6.15E-04
M	30	965.04	4.25E+01	20.35	6.83E-03	5.87E-04
m	31	969.98	1.10E+02	26.30	6.80E-03	5.85E-04
M	32	1117.02	1.26E+01	8.72	6.08E-03	5.08E-04
m	33	1120.96	6.98E+01	26.53	6.06E-03	5.06E-04
m	34	1126.61	1.55E+01	19.39	6.04E-03	5.03E-04
M	35	1202.36	1.11E+01	11.31	5.74E-03	4.74E-04
m	36	1205.49	2.61E+01	23.41	5.73E-03	4.73E-04
	37	1282.77	4.21E+01	26.87	5.47E-03	4.60E-04
	38	1378.41	2.65E+01	17.60	5.18E-03	4.40E-04
	39	1461.55	6.86E+02	55.96	4.97E-03	4.19E-04
	40	1510.11	1.89E+01	15.52	4.86E-03	4.07E-04
	41	1588.70	8.82E+00	11.37	4.69E-03	3.87E-04
	42	1594.12	8.08E+00	9.12	4.68E-03	3.86E-04
	43	1625.77	4.75E+00	6.67	4.62E-03	3.78E-04
	44	1662.42	1.15E+01	8.02	4.56E-03	3.69E-04
	45	1730.06	9.66E+00	11.17	4.45E-03	3.52E-04
	46	1751.17	1.30E+01	7.21	4.42E-03	3.47E-04
	47	1764.95	4.47E+01	17.78	4.40E-03	3.44E-04
	48	2104.13	1.67E+01	10.05	4.02E-03	3.26E-04
	49	2204.50	2.06E+01	10.59	3.95E-03	3.26E-04
	50	2307.36	9.25E+00	8.51	3.89E-03	3.26E-04
	51	2448.98	1.50E+01	7.75	3.83E-03	3.26E-04
	52	2614.95	9.35E+01	21.37	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

Analysis Report for 1606040-07

CP-5023 10-15

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 6/15/2016 6:19:29PM

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	1.30E+02	71.55	4.33E+01	8.35E+00	8.64E+01	7.20E+01
	2	1.01E+03	142.40			1.01E+03	1.42E+02
M	3	1.20E+02	44.80	5.15E+00	8.84E+00	1.15E+02	4.57E+01
m	4	1.44E+02	65.51			1.44E+02	6.55E+01
m	5	1.34E+02	66.75			1.34E+02	6.67E+01
m	6	3.38E+02	71.49	1.29E+02	7.14E+00	2.09E+02	7.18E+01
	7	5.07E+01	53.74			5.07E+01	5.37E+01
	8	2.70E+02	75.12	5.81E+01	8.50E+00	2.12E+02	7.56E+01
	9	7.84E+01	49.23			7.84E+01	4.92E+01
	10	1.01E+03	100.72	1.81E+01	5.76E+00	9.94E+02	1.01E+02
	11	6.23E+01	52.73			6.23E+01	5.27E+01
	12	5.56E+01	44.03			5.56E+01	4.40E+01
M	13	2.32E+02	43.02	1.02E+00	5.38E+00	2.31E+02	4.34E+01
m	14	4.39E+01	38.09			4.39E+01	3.81E+01
	15	6.21E+01	49.42			6.21E+01	4.94E+01
	16	1.86E+02	54.58	3.86E+00	4.98E+00	1.82E+02	5.48E+01
M	17	2.50E+01	21.79			2.50E+01	2.18E+01
m	18	4.03E+02	49.91	7.25E+00	4.86E+00	3.96E+02	5.01E+01
	19	3.50E+01	36.04			3.50E+01	3.60E+01
M	20	1.54E+01	12.37			1.54E+01	1.24E+01
m	21	7.96E+01	29.82			7.96E+01	2.98E+01
	22	1.88E+02	48.58	7.58E+01	5.38E+00	1.13E+02	4.89E+01
	23	2.29E+02	49.22	6.11E+00	3.78E+00	2.23E+02	4.94E+01
	24	2.38E+02	46.93	6.74E+00	3.64E+00	2.31E+02	4.71E+01
	25	2.23E+01	26.61			2.23E+01	2.66E+01
	26	4.92E+01	38.05			4.92E+01	3.80E+01
	27	3.93E+01	27.50			3.93E+01	2.75E+01
	28	2.14E+01	25.87			2.14E+01	2.59E+01
	29	1.65E+02	35.34	4.21E+00	2.98E+00	1.61E+02	3.55E+01
M	30	4.25E+01	20.35			4.25E+01	2.03E+01
m	31	1.10E+02	26.30			1.10E+02	2.63E+01
M	32	1.26E+01	8.72			1.26E+01	8.72E+00
m	33	6.98E+01	26.53			6.98E+01	2.65E+01
m	34	1.55E+01	19.39			1.55E+01	1.94E+01
M	35	1.11E+01	11.31			1.11E+01	1.13E+01
m	36	2.61E+01	23.41			2.61E+01	2.34E+01
	37	4.21E+01	26.87			4.21E+01	2.69E+01
	38	2.65E+01	17.60			2.65E+01	1.76E+01
	39	6.86E+02	55.96	6.83E+00	2.10E+00	6.79E+02	5.60E+01
	40	1.89E+01	15.52			1.89E+01	1.55E+01
	41	8.82E+00	11.37			8.82E+00	1.14E+01
	42	8.08E+00	9.12			8.08E+00	9.12E+00
	43	4.75E+00	6.67			4.75E+00	6.67E+00
	44	1.15E+01	8.02			1.15E+01	8.02E+00

Analysis Report for 1606040-07

CP-5023 10-15

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
45	1730.06	9.66E+00	11.17			9.66E+00	1.12E+01
46	1751.17	1.30E+01	7.21			1.30E+01	7.21E+00
47	1764.95	4.47E+01	17.78	1.66E+00	1.65E+00	4.30E+01	1.79E+01
48	2104.13	1.67E+01	10.05			1.67E+01	1.00E+01
49	2204.50	2.06E+01	10.59			2.06E+01	1.06E+01
50	2307.36	9.25E+00	8.51			9.25E+00	8.51E+00
51	2448.98	1.50E+01	7.75			1.50E+01	7.75E+00
52	2614.95	9.35E+01	21.37	4.95E+00	1.35E+00	8.85E+01	2.14E+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 : 6/15/2016 6:19:29PM

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	47.12	1.30E+02	71.55	4.33E+01	8.35E+00	8.64E+01	7.20E+01
	2	76.99	1.01E+03	142.40			1.01E+03	1.42E+02
M	3	84.94	1.20E+02	44.80	5.15E+00	8.84E+00	1.15E+02	4.57E+01
m	4	87.95	1.44E+02	65.51			1.44E+02	6.55E+01
m	5	90.38	1.34E+02	66.75			1.34E+02	6.67E+01
m	6	93.50	3.38E+02	71.49	1.29E+02	7.14E+00	2.09E+02	7.18E+01
	7	100.13	5.07E+01	53.74			5.07E+01	5.37E+01
	8	186.77	2.70E+02	75.12	5.81E+01	8.50E+00	2.12E+02	7.56E+01
	9	210.10	7.84E+01	49.23			7.84E+01	4.92E+01
	10	239.72	1.01E+03	100.72	1.81E+01	5.76E+00	9.94E+02	1.01E+02
	11	271.11	6.23E+01	52.73			6.23E+01	5.27E+01
	12	278.00	5.56E+01	44.03			5.56E+01	4.40E+01
M	13	295.85	2.32E+02	43.02	1.02E+00	5.38E+00	2.31E+02	4.34E+01
m	14	300.56	4.39E+01	38.09			4.39E+01	3.81E+01
	15	329.25	6.21E+01	49.42			6.21E+01	4.94E+01
	16	338.94	1.86E+02	54.58	3.86E+00	4.98E+00	1.82E+02	5.48E+01
M	17	349.91	2.50E+01	21.79			2.50E+01	2.18E+01
m	18	352.69	4.03E+02	49.91	7.25E+00	4.86E+00	3.96E+02	5.01E+01
	19	409.60	3.50E+01	36.04			3.50E+01	3.60E+01
M	20	460.96	1.54E+01	12.37			1.54E+01	1.24E+01

Analysis Report for 1606040-07

CP-5023 10-15

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
m	21	463.96	7.96E+01	29.82			7.96E+01	2.98E+01
	22	511.23	1.88E+02	48.58	7.58E+01	5.38E+00	1.13E+02	4.89E+01
	23	583.80	2.29E+02	49.22	6.11E+00	3.78E+00	2.23E+02	4.94E+01
	24	610.04	2.38E+02	46.93	6.74E+00	3.64E+00	2.31E+02	4.71E+01
	25	648.40	2.23E+01	26.61			2.23E+01	2.66E+01
	26	727.81	4.92E+01	38.05			4.92E+01	3.80E+01
	27	795.16	3.93E+01	27.50			3.93E+01	2.75E+01
	28	805.06	2.14E+01	25.87			2.14E+01	2.59E+01
	29	912.00	1.65E+02	35.34	4.21E+00	2.98E+00	1.61E+02	3.55E+01
M	30	965.04	4.25E+01	20.35			4.25E+01	2.03E+01
m	31	969.98	1.10E+02	26.30			1.10E+02	2.63E+01
M	32	1117.02	1.26E+01	8.72			1.26E+01	8.72E+00
m	33	1120.96	6.98E+01	26.53			6.98E+01	2.65E+01
m	34	1126.61	1.55E+01	19.39			1.55E+01	1.94E+01
M	35	1202.36	1.11E+01	11.31			1.11E+01	1.13E+01
m	36	1205.49	2.61E+01	23.41			2.61E+01	2.34E+01
	37	1282.77	4.21E+01	26.87			4.21E+01	2.69E+01
	38	1378.41	2.65E+01	17.60			2.65E+01	1.76E+01
	39	1461.55	6.86E+02	55.96	6.83E+00	2.10E+00	6.79E+02	5.60E+01
	40	1510.11	1.89E+01	15.52			1.89E+01	1.55E+01
	41	1588.70	8.82E+00	11.37			8.82E+00	1.14E+01
	42	1594.12	8.08E+00	9.12			8.08E+00	9.12E+00
	43	1625.77	4.75E+00	6.67			4.75E+00	6.67E+00
	44	1662.42	1.15E+01	8.02			1.15E+01	8.02E+00
	45	1730.06	9.66E+00	11.17			9.66E+00	1.12E+01
	46	1751.17	1.30E+01	7.21			1.30E+01	7.21E+00
	47	1764.95	4.47E+01	17.78	1.66E+00	1.65E+00	4.30E+01	1.79E+01
	48	2104.13	1.67E+01	10.05			1.67E+01	1.00E+01
	49	2204.50	2.06E+01	10.59			2.06E+01	1.06E+01
	50	2307.36	9.25E+00	8.51			9.25E+00	8.51E+00
	51	2448.98	1.50E+01	7.75			1.50E+01	7.75E+00
	52	2614.95	9.35E+01	21.37	4.95E+00	1.35E+00	8.85E+01	2.14E+01

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

NUCLIDE IDENTIFICATION REPORT

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

IDENTIFIED NUCLIDES

Analysis Report for 1606040-07
CP-5023 10-15

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.916	1460.81 *	10.67	2.89E+01	3.46E+00
GA-67	0.856	93.31 *	35.70	7.62E+00	1.59E+01
		208.95	2.24		
		300.22 *	16.00	6.20E+00	1.38E+01
CD-109	0.999	88.03 *	3.72	3.12E+00	1.46E+00
SN-126	0.978	87.57 *	37.00	3.08E-01	1.43E-01
ND-147	0.589	91.11 *	28.90	8.41E-01	4.27E-01
		531.02	13.10		
LU-173	0.871	100.72 *	5.24	7.81E-01	8.31E-01
		272.11 *	21.20	3.82E-01	3.25E-01
TL-208	0.854	583.14 *	30.22	1.64E+00	3.92E-01
		860.37	4.48		
		2614.66 *	35.85	1.47E+00	3.77E-01
PB-210	0.940	46.50 *	4.25	2.67E+00	2.24E+00
BI-212	0.715	727.17 *	11.80	1.10E+00	8.56E-01
		1620.62	2.75		
BI-214	0.934	609.31 *	46.30	1.15E+00	2.55E-01
		1120.29 *	15.10	1.72E+00	6.69E-01
		1764.49 *	15.80	1.40E+00	5.90E-01
		2204.22 *	4.98	2.37E+00	1.23E+00
PB-214	0.919	295.21 *	19.19	1.63E+00	3.31E-01
		351.92 *	37.19	1.63E+00	2.45E-01
RA-226	0.951	186.21 *	3.28	6.51E+00	1.22E+01
AC-228	0.889	338.32 *	11.40	2.38E+00	7.40E-01
		911.07 *	27.70	1.83E+00	4.34E-01
		969.11 *	16.60	2.19E+00	5.58E-01
TH-231	0.353	25.64	14.70		
		84.21 *	6.40	1.43E+00	5.82E-01
CM-243	0.359	209.75 *	3.29	2.58E+00	1.64E+00
		228.14	10.60		
		277.60 *	14.00	5.16E-01	4.10E-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 : 6/15/2016 6:19:29PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

Analysis Report for 1606040-07
CP-5023 10-15

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
2	76.99	2.80543E-01	7.05		
10	239.72	2.76065E-01	5.08		
15	329.25	1.72499E-02	39.79	Tol.	LA-140
M 17	349.91	6.95043E-03	43.54		
19	409.60	9.72616E-03	51.47		
M 20	460.96	4.29103E-03	40.04		
m 21	463.96	2.21005E-02	18.74	Sum	
22	511.23	3.13061E-02	21.68	Sum	
25	648.40	6.19863E-03	59.62	Sum	
27	795.16	1.09270E-02	34.95	Tol.	CS-134
28	805.06	5.95539E-03	60.32		
M 30	965.04	1.18039E-02	23.94		
M 32	1117.02	3.51143E-03	34.48		
m 34	1126.61	4.31012E-03	62.48		
M 35	1202.36	3.07484E-03	51.10		
m 36	1205.49	7.25873E-03	44.79	Sum	
37	1282.77	1.16953E-02	31.91		
38	1378.41	7.35450E-03	33.24		
40	1510.11	5.25000E-03	41.07		
41	1588.70	2.45098E-03	64.42		
42	1594.12	2.24359E-03	56.48		
43	1625.77	1.31944E-03	70.22		
44	1662.42	3.19444E-03	34.85		
45	1730.06	2.68229E-03	57.83	Sum	
46	1751.17	3.61111E-03	27.74		
48	2104.13	4.64912E-03	30.02	S-Esc	
50	2307.36	2.56944E-03	46.03		
51	2448.98	4.16667E-03	25.82		

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

NUCLIDE IDENTIFICATION REPORT

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

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
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Analysis Report for 1606040-07
CP-5023 10-15

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.91	1460.81 *	10.67	2.89E+01	3.46E+00
GA-67	0.85	93.31 *	35.70	7.62E+00	1.59E+01
		208.95	2.24		
		300.22 *	16.00	6.20E+00	1.38E+01
CD-109	0.99	88.03 *	3.72	3.12E+00	1.46E+00
SN-126	0.97	87.57 *	37.00	3.08E-01	1.43E-01
ND-147	0.58	91.11 *	28.90	8.41E-01	4.27E-01
		531.02	13.10		
LU-173	0.87	100.72 *	5.24	7.81E-01	8.31E-01
		272.11 *	21.20	3.82E-01	3.25E-01
TL-208	0.85	583.14 *	30.22	1.64E+00	3.92E-01
		860.37	4.48		
		2614.66 *	35.85	1.47E+00	3.77E-01
PB-210	0.94	46.50 *	4.25	2.67E+00	2.24E+00
BI-212	0.71	727.17 *	11.80	1.10E+00	8.56E-01
		1620.62	2.75		
BI-214	0.93	609.31 *	46.30	1.15E+00	2.55E-01
		1120.29 *	15.10	1.72E+00	6.69E-01
		1764.49 *	15.80	1.40E+00	5.90E-01
		2204.22 *	4.98	2.37E+00	1.23E+00
PB-214	0.91	295.21 *	19.19	1.63E+00	3.31E-01
		351.92 *	37.19	1.63E+00	2.45E-01
RA-226	0.95	186.21 *	3.28	6.51E+00	1.22E+01
AC-228	0.88	338.32 *	11.40	2.38E+00	7.40E-01
		911.07 *	27.70	1.83E+00	4.34E-01
		969.11 *	16.60	2.19E+00	5.58E-01
TH-231	0.35	25.64	14.70		
		84.21 *	6.40	1.43E+00	5.82E-01
CM-243	0.35	209.75 *	3.29	2.58E+00	1.64E+00
		228.14	10.60		
		277.60 *	14.00	5.16E-01	4.10E-01

* = Energy line found in the spectrum.

- = Manually added nuclide.

? = Manually edited nuclide.

@ = Energy line not used for Weighted Mean Activity

Energy Tolerance : 1.000 keV

Nuclide confidence index threshold = 0.30

Errors quoted at 2.000sigma

INTERFERENCE CORRECTED REPORT

Analysis Report for 1606040-07

CP-5023 10-15

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
K-40	0.916	2.89E+01	3.46E+00	
GA-67	0.856	6.90E+00	1.34E+01	
? CD-109	0.999	3.12E+00	1.46E+00	
? SN-126	0.978	3.08E-01	1.43E-01	
ND-147	0.589	8.41E-01	4.27E-01	
LU-173	0.871	4.35E-01	3.02E-01	
TL-208	0.854	1.55E+00	2.71E-01	
PB-210	0.940	2.67E+00	2.24E+00	
BI-212	0.715	1.10E+00	8.56E-01	
BI-214	0.934	1.28E+00	2.18E-01	
PB-214	0.919	1.63E+00	1.97E-01	
RA-226	0.951	6.51E+00	1.22E+01	
AC-228	0.889	2.04E+00	3.11E-01	
TH-231	0.353	1.43E+00	5.82E-01	
CM-243	0.359	6.38E-01	3.98E-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 1606040-07
CP-5023 10-15

UNIDENTIFIED PEAKS

Peak Locate Performed on : 6/15/2016 6:19:29PM
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	76.99	2.80543E-01	7.05		
10	239.72	2.76065E-01	5.08		
15	329.25	1.72499E-02	39.79	Tol.	LA-140
M 17	349.91	6.95043E-03	43.54		
19	409.60	9.72616E-03	51.47		
M 20	460.96	4.29103E-03	40.04		
m 21	463.96	2.21005E-02	18.74	Sum	
22	511.23	3.13061E-02	21.68	Sum	
25	648.40	6.19863E-03	59.62	Sum	
27	795.16	1.09270E-02	34.95	Tol.	CS-134
28	805.06	5.95539E-03	60.32		
M 30	965.04	1.18039E-02	23.94		
M 32	1117.02	3.51143E-03	34.48		
m 34	1126.61	4.31012E-03	62.48		
M 35	1202.36	3.07484E-03	51.10		
m 36	1205.49	7.25873E-03	44.79	Sum	
37	1282.77	1.16953E-02	31.91		
38	1378.41	7.35450E-03	33.24		
40	1510.11	5.25000E-03	41.07		
41	1588.70	2.45098E-03	64.42		
42	1594.12	2.24359E-03	56.48		
43	1625.77	1.31944E-03	70.22		
44	1662.42	3.19444E-03	34.85		
45	1730.06	2.68229E-03	57.83	Sum	
46	1751.17	3.61111E-03	27.74		
48	2104.13	4.64912E-03	30.02	S-Esc	
50	2307.36	2.56944E-03	46.03		
51	2448.98	4.16667E-03	25.82		

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 1606040-07
CP-5023 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	-1.63E-02	9.85E-01	9.85E-01
+	NA-22	1274.54	99.94	-4.15E-03	1.12E-01	1.12E-01
+	NA-24	1368.53	99.99	1.27E+05	9.94E+04	2.35E+05
		2754.09	99.86	-6.30E+04		9.94E+04
+	AL-26	1808.65	99.76	-8.94E-03	7.83E-02	7.83E-02
+	K-40	1460.81	* 10.67	2.89E+01	1.55E+00	1.55E+00
+	@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88	94.40	-9.16E-02	1.00E-01	1.00E-01
		78.34	96.00	1.94E-01		1.34E-01
+	SC-46	889.25	99.98	6.38E-02	1.28E-01	1.28E-01
		1120.51	99.99	2.99E-01		2.11E-01
+	V-48	983.52	99.98	6.84E-02	1.98E-01	1.98E-01
		1312.10	97.50	6.76E-02		2.25E-01
+	CR-51	320.08	9.83	-2.18E-02	9.96E-01	9.96E-01
+	MN-54	834.83	99.97	2.29E-02	1.20E-01	1.20E-01
+	CO-56	846.75	99.96	2.34E-02	1.21E-01	1.21E-01
		1037.75	14.03	-9.91E-03		9.10E-01
		1238.25	67.00	1.38E-01		2.95E-01
		1771.40	15.51	-9.93E-02		6.20E-01
		2598.48	16.90	-3.95E-02		2.90E-01
+	CO-57	122.06	85.51	1.81E-02	8.22E-02	8.22E-02
		136.48	10.60	-9.91E-02		6.69E-01
+	CO-58	810.76	99.40	1.16E-02	1.03E-01	1.03E-01
+	FE-59	1099.22	56.50	-7.96E-02	2.53E-01	2.53E-01
		1291.56	43.20	-1.45E-02		2.89E-01
+	CO-60	1173.22	100.00	-1.68E-02	1.07E-01	1.37E-01
		1332.49	100.00	3.81E-02		1.07E-01
+	ZN-65	1115.52	50.75	-3.43E-02	2.57E-01	2.57E-01
+	GA-67	93.31	* 35.70	7.62E+00	7.65E+00	7.65E+00
		208.95	2.24	-4.59E+00		6.00E+01
		300.22	* 16.00	6.20E+00		1.50E+01
+	SE-75	121.11	16.70	-6.39E-02	1.27E-01	4.37E-01
		136.00	59.20	3.84E-02		1.27E-01
		264.65	59.80	4.09E-03		1.32E-01
		279.53	25.20	1.95E-01		3.47E-01
		400.65	11.40	-3.34E-01		6.99E-01
+	RB-82	776.52	13.00	-1.13E-01	1.23E+00	1.23E+00
+	RB-83	520.41	46.00	3.69E-02	2.17E-01	2.17E-01
		529.64	30.30	-1.55E-02		3.11E-01
		552.65	16.40	2.40E-01		6.32E-01

Analysis Report for 1606040-07
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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	KR-85	513.99	0.43	5.83E+01	3.33E+01	3.33E+01
+	SR-85	513.99	99.27	2.93E-01	1.67E-01	1.67E-01
+	Y-88	898.02	93.40	-4.72E-02	6.19E-02	1.18E-01
		1836.01	99.38	-4.60E-02		6.19E-02
+	NB-93M	16.57	9.43	-2.62E+02	9.14E+01	9.14E+01
+	NB-94	702.63	100.00	-6.70E-02	9.63E-02	9.63E-02
		871.10	100.00	-3.96E-02		1.01E-01
+	NB-95	765.79	99.81	8.93E-02	1.61E-01	1.61E-01
+	NB-95M	235.69	25.00	-5.77E+01	4.11E+00	4.11E+00
+	ZR-95	724.18	43.70	-1.42E-03	2.09E-01	2.87E-01
		756.72	55.30	6.46E-03		2.09E-01
+	MO-99	181.06	6.20	8.68E+00	2.10E+01	3.26E+01
		739.58	12.80	-7.94E+00		2.10E+01
		778.00	4.50	-2.26E+01		6.65E+01
+	RU-103	497.08	89.00	-5.98E-02	1.35E-01	1.35E-01
+	RU-106	621.84	9.80	3.68E-01	1.00E+00	1.00E+00
+	AG-108M	433.93	89.90	1.14E-02	9.35E-02	9.35E-02
		614.37	90.40	-1.57E-02		1.01E-01
		722.95	90.50	-6.90E-03		1.00E-01
+	CD-109	88.03	*	3.72	4.49E+00	4.49E+00
+	AG-110M	657.75	93.14	1.78E-02	1.03E-01	1.03E-01
		677.61	10.53	-2.70E-01		9.59E-01
		706.67	16.46	-4.87E-02		6.48E-01
		763.93	21.98	-1.42E-01		5.20E-01
		884.67	71.63	-1.34E-02		1.54E-01
		1384.27	23.94	3.78E-02		4.03E-01
+	CD-113M	263.70	0.02	1.17E+01	3.15E+02	3.15E+02
+	SN-113	255.12	1.93	-3.14E-01	1.30E-01	3.98E+00
		391.69	64.90	1.87E-02		1.30E-01
+	TE123M	159.00	84.10	5.50E-03	8.94E-02	8.94E-02
+	SB-124	602.71	97.87	3.12E-02	1.35E-01	1.35E-01
		645.85	7.26	-7.70E-02		1.51E+00
		722.78	11.10	-6.55E-02		9.52E-01
		1691.02	49.00	-8.91E-02		2.07E-01
+	I-125	35.49	6.49	2.64E+00	3.83E+00	3.83E+00
+	SB-125	176.33	6.89	1.74E-01	2.91E-01	1.05E+00
		427.89	29.33	8.47E-02		2.91E-01
		463.38	10.35	1.09E+00		1.06E+00
		600.56	17.80	7.34E-02		6.54E-01
		635.90	11.32	5.29E-02		8.32E-01
+	SB-126	414.70	83.30	-6.03E-02	2.16E-01	2.16E-01
		666.33	99.60	8.49E-02		2.18E-01
		695.00	99.60	1.44E-01		2.37E-01
		720.50	53.80	8.95E-02		3.82E-01
+	SN-126	87.57	*	37.00	4.43E-01	4.43E-01
+	SB-127	473.00	25.00	1.58E+00	3.07E+00	3.97E+00
		685.20	35.70	-6.37E-02		3.07E+00
		783.80	14.70	2.23E+00		8.11E+00

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	I-129	29.78	57.00	5.43E-02	6.72E-01	6.72E-01
		33.60	13.20	-2.02E-01		1.83E+00
		39.58	7.52	6.98E-01		2.15E+00
+	I-131	284.30	6.05	-1.43E+00	2.42E-01	3.54E+00
		364.48	81.20	-9.46E-02		2.42E-01
		636.97	7.26	5.69E-02		3.98E+00
		722.89	1.80	-1.08E+00		1.57E+01
+	TE-132	49.72	13.10	3.04E+00	1.42E+00	1.46E+01
		228.16	88.00	1.19E-01		1.42E+00
+	BA-133	81.00	33.00	-7.92E-01	1.49E-01	2.98E-01
		302.84	17.80	8.60E-02		4.29E-01
		356.01	60.00	-4.33E-01		1.49E-01
+	I-133	529.87	86.30	-1.87E+02	3.75E+03	3.75E+03
+	XE-133	81.00	38.00	-3.93E+00	1.48E+00	1.48E+00
+	CS-134	563.23	8.38	6.34E-01	1.14E-01	1.23E+00
		569.32	15.43	-6.28E-03		6.44E-01
		604.70	97.60	1.90E-02		1.14E-01
		795.84	85.40	1.24E-01		1.50E-01
		801.93	8.73	2.36E-01		1.21E+00
+	CS-135	268.24	16.00	-5.19E-02	5.03E-01	5.03E-01
+	I-135	1131.51	22.50	-3.95E+12	1.16E+14	1.27E+14
		1260.41	28.60	2.89E+13		1.16E+14
		1678.03	9.54	4.81E+13		2.06E+14
+	CS-136	153.22	7.46	6.68E-01	2.09E-01	2.04E+00
		163.89	4.61	8.10E-01		3.07E+00
		176.55	13.56	1.75E-01		1.06E+00
		273.65	12.66	-1.23E+00		1.21E+00
		340.57	48.50	1.04E+00		4.76E-01
		818.50	99.70	-5.07E-02		2.09E-01
		1048.07	79.60	-4.69E-02		2.82E-01
		1235.34	19.70	-1.18E-01		1.65E+00
+	CS-137	661.65	85.12	-4.03E-02	1.13E-01	1.13E-01
+	LA-138	788.74	34.00	9.28E-03	1.32E-01	3.10E-01
		1435.80	66.00	5.20E-02		1.32E-01
+	CE-139	165.85	80.35	1.59E-02	9.50E-02	9.50E-02
+	BA-140	162.64	6.70	-5.15E-01	7.55E-01	2.11E+00
		304.84	4.50	-1.26E-01		3.12E+00
		423.70	3.20	8.14E-02		5.54E+00
		437.55	2.00	1.94E+00		8.28E+00
		537.32	25.00	-4.05E-03		7.55E-01
+	LA-140	328.77	20.50	5.08E-01	2.08E-01	8.53E-01
		487.03	45.50	1.10E-01		4.24E-01
		815.85	23.50	8.10E-02		8.69E-01
		1596.49	95.49	-1.55E-02		2.08E-01
+	CE-141	145.44	48.40	1.42E-02	1.96E-01	1.96E-01
+	CE-143	57.36	11.80	-2.79E+02	1.97E+02	6.11E+02
		293.26	42.00	2.67E+02		1.97E+02
		664.55	5.20	-8.81E+01		1.50E+03
+	CE-144	133.54	10.80	-9.31E-02	6.63E-01	6.63E-01

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	PM-144	476.78	42.00	7.02E-02	8.75E-02	2.22E-01
		618.01	98.60	-8.13E-02		8.75E-02
		696.49	99.49	-1.66E-02		1.09E-01
+	PM-145	36.85	21.70	-2.70E-01	4.65E-01	8.58E-01
		37.36	39.70	-1.21E-01		4.65E-01
		42.30	15.10	3.06E-01		9.25E-01
		72.40	2.31	-2.31E+01		4.20E+00
+	PM-146	453.90	39.94	-2.56E-02	2.24E-01	2.24E-01
		735.90	14.01	2.48E-01		7.51E-01
		747.13	13.10	3.22E-01		7.68E-01
+	ND-147	91.11	*	28.90	8.41E-01	1.30E+00
		531.02	13.10	-4.32E-01		1.46E+00
+	PM-149	285.90	3.10	6.76E+00	1.44E+02	1.44E+02
+	EU-152	121.78	20.50	7.29E-02	3.32E-01	3.32E-01
		244.69	5.40	-2.17E-01		1.66E+00
		344.27	19.13	7.60E-02		3.82E-01
		778.89	9.20	-2.99E-01		1.16E+00
		964.01	10.40	-4.72E-01		1.38E+00
		1085.78	7.22	-2.52E-01		1.52E+00
		1112.02	9.60	-7.04E-02		1.24E+00
		1407.95	14.94	-3.27E-01		6.32E-01
+	GD-153	97.43	31.30	-3.10E-01	2.35E-01	2.35E-01
		103.18	22.20	-5.88E-02		3.10E-01
+	EU-154	123.07	40.50	-3.29E-02	1.66E-01	1.66E-01
		723.30	19.70	-3.18E-02		4.62E-01
		873.19	11.50	2.74E-02		9.38E-01
		996.32	10.30	-1.10E-01		1.05E+00
		1004.76	17.90	-6.40E-02		6.14E-01
		1274.45	35.50	-1.16E-02		3.12E-01
+	EU-155	86.50	30.90	5.24E-01	3.18E-01	3.18E-01
		105.30	20.70	1.83E-01		3.36E-01
+	EU-156	811.77	10.40	5.05E-01	1.62E+00	1.62E+00
		1153.47	7.20	1.64E+00		3.40E+00
		1230.71	8.90	4.66E-01		2.87E+00
+	HO-166M	184.41	72.60	1.46E-01	1.34E-01	1.34E-01
		280.45	29.60	1.54E-02		2.54E-01
		410.94	11.10	5.14E-01		8.94E-01
		711.69	54.10	7.69E-03		1.95E-01
+	TM-171	66.72	0.14	-5.07E+01	7.30E+01	7.30E+01
+	HF-172	81.75	4.52	-8.44E+00	5.94E-01	1.88E+00
		125.81	11.30	4.59E-02		5.94E-01
+	LU-172	181.53	20.60	1.47E-02	7.99E-01	1.37E+00
		810.06	16.63	-2.55E-01		2.17E+00
		912.12	15.25	1.30E+01		5.54E+00
		1093.66	62.50	2.97E-01		7.99E-01
+	LU-173	100.72	*	5.24	7.81E-01	5.24E-01
		272.11	*	21.20	3.82E-01	5.24E-01
+	HF-175	343.40	84.00	-2.20E-02	9.18E-02	9.18E-02
+	LU-176	88.34	13.30	7.16E-01	7.30E-02	7.32E-01

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	LU-176	201.83	86.00	-1.60E-02	7.30E-02	8.70E-02
		306.78	94.00	-1.46E-02		7.30E-02
+	TA-182	67.75	41.20	-2.28E-01	2.50E-01	2.50E-01
		1121.30	34.90	6.99E-01		5.71E-01
		1189.05	16.23	1.39E-01		8.72E-01
		1221.41	26.98	1.65E-01		5.36E-01
		1231.02	11.44	2.15E-01		1.32E+00
+	IR-192	308.46	29.68	9.25E-02	2.11E-01	2.69E-01
		468.07	48.10	4.67E-02		2.11E-01
+	HG-203	279.19	77.30	7.32E-02	1.27E-01	1.27E-01
+	BI-207	569.67	97.72	-2.89E-02	9.59E-02	9.59E-02
		1063.62	74.90	1.69E-02		1.53E-01
+	TL-208	583.14	* 30.22	1.64E+00	3.23E-01	4.95E-01
		860.37	4.48	1.06E+00		2.52E+00
		2614.66	* 35.85	1.47E+00		3.23E-01
+	BI-210M	262.00	45.00	-4.55E-02	1.57E-01	1.57E-01
		300.00	23.00	-8.41E-01		3.60E-01
+	PB-210	46.50	* 4.25	2.67E+00	3.62E+00	3.62E+00
+	PB-211	404.84	2.90	3.25E-01	2.68E+00	2.68E+00
		831.96	2.90	-1.91E+00		3.83E+00
+	BI-212	727.17	* 11.80	1.10E+00	1.36E+00	1.36E+00
		1620.62	2.75	-6.69E-01		2.95E+00
+	PB-212	238.63	44.60	1.61E+00	3.91E-01	3.91E-01
		300.09	3.41	-5.67E+00		2.43E+00
+	BI-214	609.31	* 46.30	1.15E+00	3.07E-01	3.07E-01
		1120.29	* 15.10	1.72E+00		1.37E+00
		1764.49	* 15.80	1.40E+00		7.35E-01
		2204.22	* 4.98	2.37E+00		1.34E+00
+	PB-214	295.21	* 19.19	1.63E+00	3.52E-01	7.49E-01
		351.92	* 37.19	1.63E+00		3.52E-01
+	RN-219	401.80	6.50	-1.42E-01	1.16E+00	1.16E+00
+	RA-223	323.87	3.88	1.86E-02	1.77E+00	1.77E+00
+	RA-224	240.98	3.95	2.64E+01	4.69E+00	4.69E+00
+	RA-225	40.00	31.00	3.06E-01	9.41E-01	9.41E-01
+	RA-226	186.21	* 3.28	6.51E+00	3.62E+00	3.62E+00
+	TH-227	50.10	8.40	2.83E-01	7.10E-01	1.36E+00
		236.00	11.50	-9.97E+00		7.10E-01
		256.20	6.30	8.78E-02		1.13E+00
+	AC-228	338.32	* 11.40	2.38E+00	4.96E-01	1.06E+00
		911.07	* 27.70	1.83E+00		4.96E-01
		969.11	* 16.60	2.19E+00		1.02E+00
+	TH-230	48.44	16.90	1.18E-01	7.55E-01	7.55E-01
		62.85	4.60	3.83E+00		2.38E+00
		67.67	0.37	-2.34E+01		2.57E+01
+	PA-231	283.67	1.60	-8.18E-01	3.31E+00	4.43E+00
		302.67	2.30	6.64E-01		3.31E+00
+	TH-231	25.64	14.70	-3.14E+01	2.53E+00	8.16E+00
		84.21	* 6.40	1.43E+00		2.53E+00

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	PA-233	311.98	38.60	-1.48E-02	2.45E-01	2.45E-01
+	PA-234	131.20	20.40	1.66E-01	3.56E-01	3.56E-01
		733.99	8.80	2.68E-01		1.17E+00
		946.00	12.00	-4.42E-01		8.70E-01
+	PA-234M	1001.03	0.92	-3.19E+00	1.21E+01	1.21E+01
+	TH-234	63.29	3.80	3.58E+00	2.88E+00	2.88E+00
+	U-235	143.76	10.50	5.67E-01	6.95E-01	6.95E-01
		163.35	4.70	3.96E-01		1.50E+00
		205.31	4.70	8.99E-01		1.57E+00
+	NP-237	86.50	12.60	1.28E+00	7.76E-01	7.76E-01
+	NP-239	106.10	22.70	8.08E+00	1.48E+01	1.48E+01
		228.18	10.70	2.88E+00		3.42E+01
		277.60	14.10	2.64E+01		2.84E+01
+	AM-241	59.54	35.90	-1.10E-01	2.60E-01	2.60E-01
+	AM-243	74.67	66.00	-7.29E-01	1.80E-01	1.80E-01
+	CM-243	209.75	* 3.29	2.58E+00	6.57E-01	2.58E+00
		228.14	10.60	5.98E-02		7.10E-01
		277.60	* 14.00	5.16E-01		6.57E-01

- + = Nuclide identified during the nuclide identification
 * = Energy line found in the spectrum
 > = MDA value not calculated
 @ = Half-life too short to be able to perform the decay correction
 ? = 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	9.85E-01	9.85E-01	-1.63E-02	4.63E-01
NA-22	1274.54	99.94	1.12E-01	1.12E-01	-4.15E-03	5.01E-02
NA-24	1368.53	99.99	2.35E+05	9.94E+04	1.27E+05	1.04E+05
	2754.09	99.86	9.94E+04		-6.30E+04	3.14E+04

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
AL-26	1808.65	99.76	7.83E-02	7.83E-02	-8.94E-03	3.21E-02
+ K-40	1460.81	* 10.67	1.55E+00	1.55E+00	2.89E+01	7.15E-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	1.00E-01	1.00E-01	-9.16E-02	4.90E-02
	78.34	96.00	1.34E-01		1.94E-01	6.59E-02
SC-46	889.25	99.98	1.28E-01	1.28E-01	6.38E-02	5.95E-02
	1120.51	99.99	2.11E-01		2.99E-01	9.98E-02
V-48	983.52	99.98	1.98E-01	1.98E-01	6.84E-02	9.07E-02
	1312.10	97.50	2.25E-01		6.76E-02	1.02E-01
CR-51	320.08	9.83	9.96E-01	9.96E-01	-2.18E-02	4.70E-01
MN-54	834.83	99.97	1.20E-01	1.20E-01	2.29E-02	5.59E-02
CO-56	846.75	99.96	1.21E-01	1.21E-01	2.34E-02	5.61E-02
	1037.75	14.03	9.10E-01		-9.91E-03	4.17E-01
	1238.25	67.00	2.95E-01		1.38E-01	1.38E-01
	1771.40	15.51	6.20E-01		-9.93E-02	2.60E-01
	2598.48	16.90	2.90E-01		-3.95E-02	9.18E-02
CO-57	122.06	85.51	8.22E-02	8.22E-02	1.81E-02	3.97E-02
	136.48	10.60	6.69E-01		-9.91E-02	3.23E-01
CO-58	810.76	99.40	1.03E-01	1.03E-01	1.16E-02	4.72E-02
FE-59	1099.22	56.50	2.53E-01	2.53E-01	-7.96E-02	1.16E-01
	1291.56	43.20	2.89E-01		-1.45E-02	1.29E-01
CO-60	1173.22	100.00	1.37E-01	1.07E-01	-1.68E-02	6.31E-02
	1332.49	100.00	1.07E-01		3.81E-02	4.76E-02
ZN-65	1115.52	50.75	2.57E-01	2.57E-01	-3.43E-02	1.18E-01
+ GA-67	93.31	* 35.70	7.65E+00	7.65E+00	7.62E+00	3.77E+00
	208.95	2.24	6.00E+01		-4.59E+00	2.89E+01
	300.22	* 16.00	1.50E+01		6.20E+00	7.33E+00
SE-75	121.11	16.70	4.37E-01	1.27E-01	-6.39E-02	2.11E-01
	136.00	59.20	1.27E-01		3.84E-02	6.12E-02
	264.65	59.80	1.32E-01		4.09E-03	6.28E-02
	279.53	25.20	3.47E-01		1.95E-01	1.66E-01
	400.65	11.40	6.99E-01		-3.34E-01	3.28E-01
RB-82	776.52	13.00	1.23E+00	1.23E+00	-1.13E-01	5.73E-01
RB-83	520.41	46.00	2.17E-01	2.17E-01	3.69E-02	1.02E-01
	529.64	30.30	3.11E-01		-1.55E-02	1.45E-01
	552.65	16.40	6.32E-01		2.40E-01	2.97E-01
KR-85	513.99	0.43	3.33E+01	3.33E+01	5.83E+01	1.60E+01
SR-85	513.99	99.27	1.67E-01	1.67E-01	2.93E-01	8.05E-02
Y-88	898.02	93.40	1.18E-01	6.19E-02	-4.72E-02	5.42E-02
	1836.01	99.38	6.19E-02		-4.60E-02	2.32E-02
NB-93M	16.57	9.43	9.14E+01	9.14E+01	-2.62E+02	4.17E+01
NB-94	702.63	100.00	9.63E-02	9.63E-02	-6.70E-02	4.47E-02
	871.10	100.00	1.01E-01		-3.96E-02	4.64E-02
NB-95	765.79	99.81	1.61E-01	1.61E-01	8.93E-02	7.57E-02
NB-95M	235.69	25.00	4.11E+00	4.11E+00	-5.77E+01	1.98E+00
ZR-95	724.18	43.70	2.87E-01	2.09E-01	-1.42E-03	1.34E-01
	756.72	55.30	2.09E-01		6.46E-03	9.70E-02
MO-99	181.06	6.20	3.26E+01	2.10E+01	8.68E+00	1.57E+01
	739.58	12.80	2.10E+01		-7.94E+00	9.73E+00
	778.00	4.50	6.65E+01		-2.26E+01	3.09E+01
RU-103	497.08	89.00	1.35E-01	1.35E-01	-5.98E-02	6.38E-02
RU-106	621.84	9.80	1.00E+00	1.00E+00	3.68E-01	4.68E-01
AG-108M	433.93	89.90	9.35E-02	9.35E-02	1.14E-02	4.41E-02

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
AG-108M	614.37	90.40	1.01E-01	9.35E-02	-1.57E-02	4.72E-02
	722.95	90.50	1.00E-01		-6.90E-03	4.62E-02
+ CD-109	88.03	* 3.72	4.49E+00	4.49E+00	3.12E+00	2.22E+00
AG-110M	657.75	93.14	1.03E-01	1.03E-01	1.78E-02	4.76E-02
	677.61	10.53	9.59E-01		-2.70E-01	4.46E-01
	706.67	16.46	6.48E-01		-4.87E-02	3.02E-01
	763.93	21.98	5.20E-01		-1.42E-01	2.43E-01
	884.67	71.63	1.54E-01		-1.34E-02	7.12E-02
	1384.27	23.94	4.03E-01		3.78E-02	1.76E-01
CD-113M	263.70	0.02	3.15E+02	3.15E+02	1.17E+01	1.50E+02
SN-113	255.12	1.93	3.98E+00	1.30E-01	-3.14E-01	1.90E+00
	391.69	64.90	1.30E-01		1.87E-02	6.14E-02
TE123M	159.00	84.10	8.94E-02	8.94E-02	5.50E-03	4.31E-02
SB-124	602.71	97.87	1.35E-01	1.35E-01	3.12E-02	6.36E-02
	645.85	7.26	1.51E+00		-7.70E-02	7.05E-01
	722.78	11.10	9.52E-01		-6.55E-02	4.39E-01
	1691.02	49.00	2.07E-01		-8.91E-02	8.74E-02
I-125	35.49	6.49	3.83E+00	3.83E+00	2.64E+00	1.85E+00
SB-125	176.33	6.89	1.05E+00	2.91E-01	1.74E-01	5.04E-01
	427.89	29.33	2.91E-01		8.47E-02	1.37E-01
	463.38	10.35	1.06E+00		1.09E+00	5.04E-01
	600.56	17.80	6.54E-01		7.34E-02	3.10E-01
	635.90	11.32	8.32E-01		5.29E-02	3.87E-01
SB-126	414.70	83.30	2.16E-01	2.16E-01	-6.03E-02	1.02E-01
	666.33	99.60	2.18E-01		8.49E-02	1.02E-01
	695.00	99.60	2.37E-01		1.44E-01	1.11E-01
	720.50	53.80	3.82E-01		8.95E-02	1.77E-01
+ SN-126	87.57	* 37.00	4.43E-01	4.43E-01	3.08E-01	2.18E-01
SB-127	473.00	25.00	3.97E+00	3.07E+00	1.58E+00	1.88E+00
	685.20	35.70	3.07E+00		-6.37E-02	1.43E+00
	783.80	14.70	8.11E+00		2.23E+00	3.78E+00
I-129	29.78	57.00	6.72E-01	6.72E-01	5.43E-02	3.24E-01
	33.60	13.20	1.83E+00		-2.02E-01	8.84E-01
	39.58	7.52	2.15E+00		6.98E-01	1.04E+00
I-131	284.30	6.05	3.54E+00	2.42E-01	-1.43E+00	1.68E+00
	364.48	81.20	2.42E-01		-9.46E-02	1.13E-01
	636.97	7.26	3.98E+00		5.69E-02	1.85E+00
	722.89	1.80	1.57E+01		-1.08E+00	7.25E+00
TE-132	49.72	13.10	1.46E+01	1.42E+00	3.04E+00	7.11E+00
	228.16	88.00	1.42E+00		1.19E-01	6.79E-01
BA-133	81.00	33.00	2.98E-01	1.49E-01	-7.92E-01	1.46E-01
	302.84	17.80	4.29E-01		8.60E-02	2.04E-01
	356.01	60.00	1.49E-01		-4.33E-01	7.11E-02
I-133	529.87	86.30	3.75E+03	3.75E+03	-1.87E+02	1.75E+03
XE-133	81.00	38.00	1.48E+00	1.48E+00	-3.93E+00	7.23E-01
CS-134	563.23	8.38	1.23E+00	1.14E-01	6.34E-01	5.82E-01
	569.32	15.43	6.44E-01		-6.28E-03	3.03E-01
	604.70	97.60	1.14E-01		1.90E-02	5.39E-02
	795.84	85.40	1.50E-01		1.24E-01	7.03E-02
	801.93	8.73	1.21E+00		2.36E-01	5.59E-01
CS-135	268.24	16.00	5.03E-01	5.03E-01	-5.19E-02	2.41E-01
I-135	1131.51	22.50	1.27E+14	1.16E+14	-3.95E+12	5.77E+13
	1260.41	28.60	1.16E+14		2.89E+13	5.31E+13

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
I-135	1678.03	9.54	2.06E+14	1.16E+14	4.81E+13	8.46E+13
CS-136	153.22	7.46	2.04E+00	2.09E-01	6.68E-01	9.86E-01
	163.89	4.61	3.07E+00		8.10E-01	1.48E+00
	176.55	13.56	1.06E+00		1.75E-01	5.09E-01
	273.65	12.66	1.21E+00		-1.23E+00	5.77E-01
	340.57	48.50	4.76E-01		1.04E+00	2.30E-01
	818.50	99.70	2.09E-01		-5.07E-02	9.67E-02
	1048.07	79.60	2.82E-01		-4.69E-02	1.29E-01
	1235.34	19.70	1.65E+00		-1.18E-01	7.71E-01
CS-137	661.65	85.12	1.13E-01	1.13E-01	-4.03E-02	5.27E-02
LA-138	788.74	34.00	3.10E-01	1.32E-01	9.28E-03	1.44E-01
	1435.80	66.00	1.32E-01		5.20E-02	5.70E-02
CE-139	165.85	80.35	9.50E-02	9.50E-02	1.59E-02	4.58E-02
BA-140	162.64	6.70	2.11E+00	7.55E-01	-5.15E-01	1.02E+00
	304.84	4.50	3.12E+00		-1.26E-01	1.47E+00
	423.70	3.20	5.54E+00		8.14E-02	2.62E+00
	437.55	2.00	8.28E+00		1.94E+00	3.89E+00
	537.32	25.00	7.55E-01		-4.05E-03	3.55E-01
LA-140	328.77	20.50	8.53E-01	2.08E-01	5.08E-01	4.07E-01
	487.03	45.50	4.24E-01		1.10E-01	2.00E-01
	815.85	23.50	8.69E-01		8.10E-02	4.01E-01
	1596.49	95.49	2.08E-01		-1.55E-02	8.98E-02
CE-141	145.44	48.40	1.96E-01	1.96E-01	1.42E-02	9.48E-02
CE-143	57.36	11.80	6.11E+02	1.97E+02	-2.79E+02	2.96E+02
	293.26	42.00	1.97E+02		2.67E+02	9.53E+01
	664.55	5.20	1.50E+03		-8.81E+01	7.01E+02
CE-144	133.54	10.80	6.63E-01	6.63E-01	-9.31E-02	3.21E-01
PM-144	476.78	42.00	2.22E-01	8.75E-02	7.02E-02	1.05E-01
	618.01	98.60	8.75E-02		-8.13E-02	4.05E-02
	696.49	99.49	1.09E-01		-1.66E-02	5.07E-02
PM-145	36.85	21.70	8.58E-01	4.65E-01	-2.70E-01	4.14E-01
	37.36	39.70	4.65E-01		-1.21E-01	2.25E-01
	42.30	15.10	9.25E-01		3.06E-01	4.48E-01
	72.40	2.31	4.20E+00		-2.31E+01	2.05E+00
PM-146	453.90	39.94	2.24E-01	2.24E-01	-2.56E-02	1.06E-01
	735.90	14.01	7.51E-01		2.48E-01	3.49E-01
	747.13	13.10	7.68E-01		3.22E-01	3.56E-01
+ ND-147	91.11 *	28.90	1.30E+00	1.30E+00	8.41E-01	6.41E-01
	531.02	13.10	1.46E+00		-4.32E-01	6.80E-01
PM-149	285.90	3.10	1.44E+02	1.44E+02	6.76E+00	6.82E+01
EU-152	121.78	20.50	3.32E-01	3.32E-01	7.29E-02	1.60E-01
	244.69	5.40	1.66E+00		-2.17E-01	8.01E-01
	344.27	19.13	3.82E-01		7.60E-02	1.80E-01
	778.89	9.20	1.16E+00		-2.99E-01	5.37E-01
	964.01	10.40	1.38E+00		-4.72E-01	6.49E-01
	1085.78	7.22	1.52E+00		-2.52E-01	6.93E-01
	1112.02	9.60	1.24E+00		-7.04E-02	5.67E-01
	1407.95	14.94	6.32E-01		-3.27E-01	2.76E-01
GD-153	97.43	31.30	2.35E-01	2.35E-01	-3.10E-01	1.14E-01
	103.18	22.20	3.10E-01		-5.88E-02	1.50E-01
EU-154	123.07	40.50	1.66E-01	1.66E-01	-3.29E-02	8.02E-02
	723.30	19.70	4.62E-01		-3.18E-02	2.13E-01
	873.19	11.50	9.38E-01		2.74E-02	4.33E-01

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)	
EU-154	996.32	10.30	1.05E+00	1.66E-01	-1.10E-01	4.79E-01	
	1004.76	17.90	6.14E-01		-6.40E-02	2.81E-01	
	1274.45	35.50	3.12E-01		-1.16E-02	1.40E-01	
EU-155	86.50	30.90	3.18E-01	3.18E-01	5.24E-01	1.56E-01	
	105.30	20.70	3.36E-01		1.83E-01	1.63E-01	
EU-156	811.77	10.40	1.62E+00	1.62E+00	5.05E-01	7.43E-01	
	1153.47	7.20	3.40E+00		1.64E+00	1.57E+00	
	1230.71	8.90	2.87E+00		4.66E-01	1.32E+00	
HO-166M	184.41	72.60	1.34E-01	1.34E-01	1.46E-01	6.54E-02	
	280.45	29.60	2.54E-01		1.54E-02	1.21E-01	
	410.94	11.10	8.94E-01		5.14E-01	4.26E-01	
	711.69	54.10	1.95E-01		7.69E-03	9.12E-02	
TM-171	66.72	0.14	7.30E+01	7.30E+01	-5.07E+01	3.57E+01	
HF-172	81.75	4.52	1.88E+00	5.94E-01	-8.44E+00	9.15E-01	
	125.81	11.30	5.94E-01		4.59E-02	2.87E-01	
LU-172	181.53	20.60	1.37E+00	7.99E-01	1.47E-02	6.62E-01	
	810.06	16.63	2.17E+00		-2.55E-01	9.95E-01	
	912.12	15.25	5.54E+00		1.30E+01	2.66E+00	
	1093.66	62.50	7.99E-01		2.97E-01	3.68E-01	
+ LU-173	100.72	* 5.24	1.35E+00	5.24E-01	7.81E-01	6.57E-01	
	272.11	* 21.20	5.24E-01		3.82E-01	2.54E-01	
HF-175	343.40	84.00	9.18E-02	9.18E-02	-2.20E-02	4.32E-02	
LU-176	88.34	13.30	7.32E-01	7.30E-02	7.16E-01	3.58E-01	
	201.83	86.00	8.70E-02		-1.60E-02	4.18E-02	
	306.78	94.00	7.30E-02		-1.46E-02	3.45E-02	
TA-182	67.75	41.20	2.50E-01	2.50E-01	-2.28E-01	1.22E-01	
	1121.30	34.90	5.71E-01		6.99E-01	2.70E-01	
	1189.05	16.23	8.72E-01		1.39E-01	4.01E-01	
	1221.41	26.98	5.36E-01		1.65E-01	2.46E-01	
	1231.02	11.44	1.32E+00		2.15E-01	6.10E-01	
IR-192	308.46	29.68	2.69E-01	2.11E-01	9.25E-02	1.27E-01	
	468.07	48.10	2.11E-01		4.67E-02	9.97E-02	
HG-203	279.19	77.30	1.27E-01	1.27E-01	7.32E-02	6.08E-02	
BI-207	569.67	97.72	9.59E-02	9.59E-02	-2.89E-02	4.50E-02	
	1063.62	74.90	1.53E-01		1.69E-02	7.02E-02	
	583.14	* 30.22	4.95E-01		3.23E-01	1.64E+00	2.37E-01
+ TL-208	860.37	* 4.48	2.52E+00	3.23E-01	1.06E+00	1.17E+00	
	2614.66	* 35.85	3.23E-01		1.47E+00	1.39E-01	
	262.00	45.00	1.57E-01		1.57E-01	-4.55E-02	7.46E-02
+ BI-210M	300.00	23.00	3.60E-01	1.57E-01	-8.41E-01	1.72E-01	
	46.50	* 4.25	3.62E+00		3.62E+00	2.67E+00	1.77E+00
	404.84	2.90	2.68E+00		2.68E+00	3.25E-01	1.26E+00
+ PB-210	831.96	2.90	3.83E+00	1.36E+00	-1.91E+00	1.78E+00	
	727.17	* 11.80	1.36E+00		1.10E+00	6.50E-01	
+ BI-212	1620.62	2.75	2.95E+00	1.36E+00	-6.69E-01	1.24E+00	
	238.63	44.60	3.91E-01		3.91E-01	1.61E+00	1.92E-01
	300.09	3.41	2.43E+00		-5.67E+00	1.16E+00	
+ BI-214	609.31	* 46.30	3.07E-01	3.07E-01	1.15E+00	1.47E-01	
	1120.29	* 15.10	1.37E+00		1.72E+00	6.51E-01	
	1764.49	* 15.80	7.35E-01		1.40E+00	3.23E-01	
	2204.22	* 4.98	1.34E+00		2.37E+00	5.14E-01	
+ PB-214	295.21	* 19.19	7.49E-01	3.52E-01	1.63E+00	3.65E-01	
	351.92	* 37.19	3.52E-01		1.63E+00	1.71E-01	

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
RN-219	401.80	6.50	1.16E+00	1.16E+00	-1.42E-01	5.44E-01
RA-223	323.87	3.88	1.77E+00	1.77E+00	1.86E-02	8.33E-01
RA-224	240.98	3.95	4.69E+00	4.69E+00	2.64E+01	2.31E+00
RA-225	40.00	31.00	9.41E-01	9.41E-01	3.06E-01	4.55E-01
+ RA-226	186.21 *	3.28	3.62E+00	3.62E+00	6.51E+00	1.77E+00
TH-227	50.10	8.40	1.36E+00	7.10E-01	2.83E-01	6.61E-01
	236.00	11.50	7.10E-01		-9.97E+00	3.41E-01
	256.20	6.30	1.13E+00		8.78E-02	5.41E-01
+ AC-228	338.32 *	11.40	1.06E+00	4.96E-01	2.38E+00	5.12E-01
	911.07 *	27.70	4.96E-01		1.83E+00	2.33E-01
	969.11 *	16.60	1.02E+00		2.19E+00	4.84E-01
TH-230	48.44	16.90	7.55E-01	7.55E-01	1.18E-01	3.67E-01
	62.85	4.60	2.38E+00		3.83E+00	1.16E+00
	67.67	0.37	2.57E+01		-2.34E+01	1.25E+01
PA-231	283.67	1.60	4.43E+00	3.31E+00	-8.18E-01	2.10E+00
	302.67	2.30	3.31E+00		6.64E-01	1.57E+00
+ TH-231	25.64	14.70	8.16E+00	2.53E+00	-3.14E+01	3.98E+00
	84.21 *	6.40	2.53E+00		1.43E+00	1.25E+00
PA-233	311.98	38.60	2.45E-01	2.45E-01	-1.48E-02	1.16E-01
PA-234	131.20	20.40	3.56E-01	3.56E-01	1.66E-01	1.72E-01
	733.99	8.80	1.17E+00		2.68E-01	5.44E-01
	946.00	12.00	8.70E-01		-4.42E-01	3.99E-01
PA-234M	1001.03	0.92	1.21E+01	1.21E+01	-3.19E+00	5.57E+00
TH-234	63.29	3.80	2.88E+00	2.88E+00	3.58E+00	1.41E+00
U-235	143.76	10.50	6.95E-01	6.95E-01	5.67E-01	3.36E-01
	163.35	4.70	1.50E+00		3.96E-01	7.24E-01
	205.31	4.70	1.57E+00		8.99E-01	7.57E-01
NP-237	86.50	12.60	7.76E-01	7.76E-01	1.28E+00	3.80E-01
NP-239	106.10	22.70	1.48E+01	1.48E+01	8.08E+00	7.19E+00
	228.18	10.70	3.42E+01		2.88E+00	1.64E+01
	277.60	14.10	2.84E+01		2.64E+01	1.36E+01
AM-241	59.54	35.90	2.60E-01	2.60E-01	-1.10E-01	1.26E-01
AM-243	74.67	66.00	1.80E-01	1.80E-01	-7.29E-01	8.82E-02
+ CM-243	209.75 *	3.29	2.58E+00	6.57E-01	2.58E+00	1.24E+00
	228.14	10.60	7.10E-01		5.98E-02	3.41E-01
	277.60 *	14.00	6.57E-01		5.16E-01	3.16E-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 1606040-07
CP-5023 10-15

DATA REVIEW COMMENTS REPORT

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

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

Sample Title: CP-5023 10-15

Elapsed Live time: 3600

Elapsed Real Time: 3601

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	37	126	108	121	786	333
25:	82	67	46	58	61	46	44	40
33:	50	56	43	65	59	63	43	62
41:	75	65	54	60	63	62	120	139
49:	50	70	77	71	74	90	77	75
57:	82	69	82	76	91	99	99	183
65:	165	100	105	109	112	106	100	106
73:	99	126	167	364	170	485	261	107
81:	108	97	91	78	149	115	105	162
89:	142	105	155	106	174	273	126	77
97:	54	61	65	90	69	65	58	56
105:	60	60	67	83	54	53	76	63
113:	60	66	61	76	55	62	57	63
121:	49	66	54	59	53	57	47	54
129:	52	89	62	52	55	58	57	62
137:	57	47	49	56	48	50	52	62
145:	73	59	44	44	57	48	58	61
153:	63	68	58	52	53	49	49	51
161:	41	45	57	51	40	50	47	57
169:	39	49	56	53	38	41	47	46
177:	41	43	52	45	44	48	42	48
185:	45	94	185	79	47	42	34	33
193:	38	30	36	39	43	49	46	46
201:	35	40	48	45	45	51	37	27
209:	42	82	56	49	35	41	45	30
217:	37	39	35	46	37	49	37	38
225:	38	38	37	39	32	39	39	30
233:	34	29	41	44	42	54	349	465
241:	73	106	106	45	39	25	27	33
249:	21	41	35	29	26	24	30	30
257:	31	27	27	28	30	28	21	27
265:	31	33	30	23	18	33	67	53
273:	25	22	21	28	25	51	34	33
281:	20	26	26	25	22	22	18	34
289:	24	20	24	20	22	25	51	155
297:	72	30	23	34	42	26	21	21
305:	18	23	19	19	22	12	34	15
313:	16	18	19	19	24	27	19	19
321:	18	17	22	17	20	17	15	30
329:	51	26	23	31	18	20	27	15
337:	17	39	137	63	24	16	17	13
345:	18	19	30	15	22	35	28	119
353:	249	62	24	17	19	19	18	15
361:	13	18	18	14	9	13	11	15

369: 18 16 15 22 9 19 17 20

Sample Title: CP-5023 10-15

Channel	1	2	3	4	5	6	7	8
377:	19	14	25	16	14	13	12	15
385:	21	18	11	9	21	16	17	23
393:	15	21	15	22	19	18	17	15
401:	16	14	17	20	22	13	15	20
409:	17	33	25	15	16	16	17	16
417:	11	13	21	16	19	18	13	15
425:	14	12	11	12	12	16	18	8
433:	11	13	14	10	18	11	11	11
441:	9	12	7	16	16	12	14	14
449:	17	9	14	10	16	8	17	20
457:	12	16	16	8	20	10	14	54
465:	22	10	12	5	18	13	14	10
473:	8	20	17	16	9	13	11	8
481:	10	15	7	15	16	17	7	19
489:	14	10	11	15	16	10	16	16
497:	12	17	16	10	14	22	10	11
505:	13	9	18	15	18	23	69	72
513:	36	13	12	10	7	8	15	13
521:	12	8	10	13	14	9	11	7
529:	6	7	5	13	19	8	9	15
537:	12	10	14	11	9	11	9	12
545:	8	8	10	11	4	14	15	10
553:	11	14	7	7	9	10	12	10
561:	6	15	16	21	10	14	6	11
569:	12	12	19	9	6	12	14	7
577:	11	12	7	9	9	11	66	141
585:	62	12	8	12	12	15	5	10
593:	10	8	11	17	17	11	19	17
601:	13	16	14	17	12	13	10	14
609:	45	144	71	11	13	12	6	8
617:	4	9	5	6	14	11	13	9
625:	10	10	7	6	6	14	10	7
633:	9	14	9	9	8	8	5	8
641:	9	9	8	8	7	11	8	15
649:	5	15	7	5	6	10	6	7
657:	8	8	10	8	10	8	5	12
665:	9	10	16	8	12	10	4	5
673:	12	8	11	9	6	6	8	14
681:	7	11	10	15	8	9	9	4
689:	10	8	3	12	17	7	10	13
697:	10	11	13	5	8	8	10	7
705:	10	8	15	8	7	9	8	12
713:	10	11	10	8	7	8	13	7
721:	10	7	5	6	7	5	29	26
729:	20	14	5	9	8	6	13	10
737:	9	10	6	5	9	7	6	11
745:	5	8	7	10	4	10	4	6
753:	11	8	10	12	7	7	4	6
761:	8	6	9	12	8	11	11	15
769:	17	9	10	9	15	15	9	8
777:	11	6	7	9	10	7	7	9
785:	9	14	7	8	6	6	8	7
793:	3	15	17	28	7	4	7	9

801: 2 6 10 9 10 11 9 6

Sample Title: CP-5023 10-15

Channel	1	2	3	4	5	6	7	8
809:	3	6	4	9	3	7	8	3
817:	6	9	11	4	8	10	11	8
825:	3	10	9	11	6	5	12	10
833:	10	7	7	10	13	6	8	7
841:	8	5	9	7	7	12	4	4
849:	11	7	7	5	5	5	3	7
857:	6	3	7	3	17	15	5	4
865:	9	8	5	3	9	11	7	4
873:	2	7	9	9	6	9	5	7
881:	5	4	10	8	3	9	8	5
889:	7	9	12	5	6	4	5	9
897:	6	4	7	7	3	5	14	7
905:	6	11	4	6	3	9	39	89
913:	46	6	7	7	5	6	6	2
921:	6	10	6	7	4	8	6	3
929:	4	8	2	9	5	9	12	9
937:	6	9	8	6	12	7	7	8
945:	1	4	10	5	5	12	2	10
953:	12	5	6	6	5	3	9	5
961:	5	8	6	14	24	14	6	7
969:	31	55	14	9	8	2	0	4
977:	1	5	5	4	9	8	6	4
985:	4	8	4	6	3	7	4	7
993:	3	6	7	6	5	6	6	4
1001:	9	7	5	5	10	7	1	5
1009:	6	6	3	10	1	7	5	8
1017:	3	7	7	5	5	5	6	6
1025:	7	5	4	9	7	4	6	7
1033:	6	7	6	6	4	12	2	7
1041:	4	5	6	6	10	6	6	4
1049:	4	5	4	4	9	3	8	2
1057:	4	3	3	5	4	10	6	4
1065:	7	5	4	4	8	6	11	4
1073:	6	6	7	2	5	9	7	3
1081:	7	5	4	4	6	6	6	6
1089:	3	7	4	6	10	8	6	5
1097:	9	5	5	5	5	5	4	10
1105:	5	5	4	4	5	7	6	6
1113:	2	7	7	4	11	5	9	23
1121:	28	21	10	5	4	5	10	4
1129:	7	1	4	7	3	6	6	6
1137:	6	7	11	5	5	6	7	7
1145:	8	7	5	1	1	6	4	6
1153:	9	5	9	10	9	7	9	4
1161:	6	4	6	6	9	6	3	12
1169:	5	10	6	5	7	7	7	7
1177:	10	4	6	4	5	6	6	7
1185:	3	5	4	8	6	6	5	10
1193:	7	5	7	8	6	9	11	5
1201:	4	13	6	4	16	9	8	9
1209:	8	1	6	6	3	7	6	8
1217:	5	6	7	8	5	3	6	9
1225:	3	4	3	10	4	5	6	6

1233: 12 5 11 5 11 16 17 11

Sample Title: CP-5023 10-15

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1241:	7	10	6	6	7	9	5	7
1249:	5	2	6	4	3	5	9	4
1257:	4	5	7	6	8	2	5	3
1265:	2	1	6	4	5	3	3	3
1273:	4	3	6	1	7	4	7	5
1281:	5	11	6	6	4	2	1	5
1289:	3	1	0	5	4	4	6	4
1297:	3	8	2	5	7	4	1	3
1305:	4	6	7	6	5	6	4	7
1313:	3	5	3	2	1	1	4	2
1321:	4	1	6	2	2	7	2	1
1329:	3	3	0	5	4	3	5	3
1337:	2	3	2	4	4	4	1	2
1345:	5	1	3	2	2	4	6	2
1353:	6	3	3	2	2	1	0	3
1361:	3	6	1	0	7	3	2	1
1369:	1	5	2	3	0	4	3	2
1377:	5	6	13	5	3	1	2	1
1385:	4	5	0	3	1	7	3	2
1393:	5	0	4	1	2	1	2	2
1401:	2	3	3	7	1	1	2	1
1409:	5	3	3	1	4	1	4	3
1417:	2	3	1	1	2	1	1	2
1425:	3	4	1	1	1	1	3	0
1433:	3	4	1	2	3	0	0	0
1441:	1	1	2	1	3	0	1	6
1449:	3	1	0	1	2	2	2	2
1457:	1	6	16	93	260	247	66	8
1465:	6	1	1	2	3	0	2	0
1473:	0	2	2	0	1	2	2	1
1481:	2	4	0	2	3	2	2	0
1489:	1	2	2	3	0	2	3	5
1497:	5	3	0	2	0	3	1	0
1505:	1	2	3	0	3	7	5	2
1513:	2	3	2	1	1	1	2	1
1521:	2	3	4	2	2	0	0	3
1529:	1	1	1	2	0	0	0	2
1537:	1	1	3	2	1	1	3	4
1545:	0	1	3	4	0	2	0	1
1553:	1	2	0	0	1	1	1	0
1561:	1	2	3	1	3	1	2	1
1569:	1	2	0	0	0	2	1	0
1577:	0	1	2	0	3	0	3	1
1585:	0	2	0	3	7	3	2	2
1593:	4	4	3	0	1	2	0	3
1601:	0	3	0	0	2	3	0	0
1609:	0	1	1	1	1	0	2	1
1617:	1	2	1	2	3	0	0	0
1625:	4	2	2	0	2	0	6	2
1633:	4	2	0	3	1	2	2	1
1641:	1	2	0	1	1	1	1	0
1649:	1	2	3	3	1	1	0	3
1657:	4	0	1	1	4	1	3	3

1665: 0 0 1 1 0 2 1 0

Sample Title: CP-5023 10-15

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1673:	0	1	0	0	2	2	2	1
1681:	0	1	0	1	0	5	0	1
1689:	1	1	1	3	2	1	0	5
1697:	0	0	1	1	1	2	0	1
1705:	0	1	1	1	4	1	0	0
1713:	1	0	1	1	0	1	5	0
1721:	1	0	1	2	0	2	0	2
1729:	4	3	1	2	2	0	1	3
1737:	0	4	0	3	1	1	0	1
1745:	2	0	0	1	1	2	5	2
1753:	2	0	0	0	1	1	0	2
1761:	2	0	3	12	21	9	5	0
1769:	3	0	0	3	0	3	2	1
1777:	1	2	0	0	1	2	0	0
1785:	2	1	1	1	0	0	1	1
1793:	0	0	0	2	1	0	1	2
1801:	1	1	4	0	1	2	3	0
1809:	1	0	0	1	1	0	0	0
1817:	0	1	0	2	0	2	3	1
1825:	1	0	0	0	1	0	2	2
1833:	0	0	0	0	1	1	1	1
1841:	0	0	0	1	2	1	4	1
1849:	2	3	2	0	0	2	1	0
1857:	1	1	0	0	3	1	1	2
1865:	1	2	0	0	0	0	0	0
1873:	0	2	1	1	4	0	1	2
1881:	1	0	0	0	1	1	1	0
1889:	1	0	2	1	1	1	0	1
1897:	0	0	0	0	1	0	3	1
1905:	1	0	2	1	2	1	1	1
1913:	2	2	0	1	1	2	1	1
1921:	3	0	2	1	1	0	1	0
1929:	0	0	0	1	0	0	3	0
1937:	0	3	0	1	1	0	0	1
1945:	1	3	0	0	1	1	1	1
1953:	2	1	2	2	2	0	0	0
1961:	1	1	0	1	1	1	1	1
1969:	2	2	0	0	0	0	1	2
1977:	1	1	1	0	2	0	1	1
1985:	1	2	1	1	0	1	1	0
1993:	1	2	1	2	1	1	1	0
2001:	0	1	2	0	2	1	1	0
2009:	0	1	0	2	0	0	1	0
2017:	1	1	2	1	0	0	0	1
2025:	1	1	0	4	1	0	4	0
2033:	2	0	2	2	1	0	0	1
2041:	1	0	1	2	1	0	2	0
2049:	1	2	0	2	1	1	0	0
2057:	1	3	1	2	1	1	1	0
2065:	1	1	0	0	2	0	1	3
2073:	0	1	0	0	1	0	0	0
2081:	1	1	0	1	1	1	0	1
2089:	0	2	2	1	0	0	0	1

2097: 1 0 1 0 1 4 2 6

Sample Title: CP-5023 10-15

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

2529: 0 1 0 2 0 0 0 3

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Channel	-----	-----	-----	-----	-----	-----	-----	-----
2537:	0	0	0	0	0	1	0	0
2545:	0	1	0	0	0	0	0	0
2553:	0	1	1	0	0	0	0	1
2561:	0	0	0	0	0	1	0	0
2569:	1	0	1	0	0	0	1	0
2577:	0	0	0	1	0	0	0	0
2585:	0	1	1	0	0	1	0	0
2593:	1	0	0	0	0	0	0	1
2601:	0	0	0	0	0	0	1	0
2609:	0	1	0	4	24	25	31	7
2617:	4	1	1	1	1	0	0	0
2625:	1	0	1	0	0	0	2	0
2633:	0	1	2	0	1	0	1	0
2641:	0	0	1	0	0	0	0	0
2649:	0	1	0	0	0	0	0	0
2657:	0	0	1	1	0	0	1	0
2665:	1	1	0	0	0	0	3	0
2673:	0	1	0	0	0	0	0	1
2681:	0	0	3	0	1	1	0	0
2689:	1	0	0	0	1	0	0	1
2697:	0	0	0	0	0	0	1	0
2705:	0	2	1	0	0	0	0	0
2713:	0	0	1	0	1	0	0	0
2721:	0	0	0	0	0	0	1	0
2729:	0	0	0	1	0	0	0	0
2737:	1	0	0	0	0	1	0	0
2745:	0	0	1	0	0	1	0	0
2753:	0	0	0	0	0	0	2	0
2761:	0	0	1	1	0	0	0	0
2769:	0	0	0	1	0	1	1	0
2777:	0	0	0	0	0	0	0	0
2785:	1	0	1	0	2	1	0	0
2793:	1	1	1	0	1	0	0	0
2801:	0	0	1	0	0	0	0	0
2809:	0	0	0	1	0	0	0	0
2817:	0	0	0	0	0	0	0	0
2825:	1	0	1	0	0	0	0	0
2833:	0	0	0	0	0	1	1	0
2841:	0	1	0	0	1	1	2	0
2849:	0	0	0	0	0	0	0	0
2857:	0	0	0	0	0	0	0	0
2865:	2	0	0	0	1	0	1	0
2873:	0	0	0	0	0	0	0	0
2881:	0	0	1	0	0	0	1	0
2889:	0	0	1	0	0	0	0	0
2897:	0	1	0	1	0	0	0	0
2905:	0	0	0	0	0	0	0	1
2913:	0	0	0	1	0	0	0	0
2921:	1	0	0	0	0	0	0	0
2929:	1	0	0	1	2	0	0	0
2937:	0	0	0	0	0	0	0	0
2945:	0	0	0	0	0	0	0	0
2953:	1	1	0	0	1	0	1	0

2961: 0 0 1 0 0 0 1 0

Sample Title: CP-5023 10-15

Channel	1	2	3	4	5	6	7	8
2969:	0	0	0	1	0	0	0	1
2977:	0	0	1	0	0	1	0	0
2985:	1	0	0	0	0	1	0	0
2993:	1	0	0	0	2	1	0	0
3001:	0	0	0	0	0	0	0	0
3009:	0	0	0	0	1	0	3	0
3017:	0	1	0	0	0	0	0	1
3025:	1	0	1	2	1	0	0	1
3033:	0	0	0	0	3	0	0	0
3041:	0	0	0	0	0	0	0	0
3049:	0	0	1	0	0	0	0	0
3057:	1	0	0	0	0	0	0	0
3065:	0	0	0	1	0	0	1	0
3073:	0	0	0	1	1	0	0	0
3081:	0	0	0	0	1	0	0	1
3089:	0	0	0	0	0	1	0	0
3097:	0	0	0	1	0	2	0	0
3105:	0	0	0	0	0	0	0	1
3113:	0	0	0	0	0	1	0	0
3121:	1	0	0	2	1	1	1	0
3129:	0	0	0	0	0	0	0	0
3137:	0	0	0	1	0	1	1	0
3145:	0	0	0	1	0	0	0	0
3153:	1	1	0	1	0	1	0	0
3161:	0	0	0	0	0	0	0	0
3169:	0	0	0	0	0	0	0	0
3177:	0	0	0	0	0	0	0	0
3185:	0	0	1	1	0	1	0	0
3193:	1	0	0	0	0	0	1	0
3201:	0	0	0	0	0	1	0	1
3209:	0	0	0	1	0	0	0	0
3217:	0	0	0	0	0	0	0	1
3225:	0	0	0	0	0	0	0	0
3233:	0	0	0	0	0	0	0	0
3241:	0	0	0	2	0	0	1	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	0	0
3273:	0	0	0	1	0	0	0	1
3281:	0	1	0	0	0	0	0	0
3289:	0	0	0	0	0	0	0	0
3297:	0	1	0	0	0	0	1	0
3305:	0	0	0	0	0	0	0	0
3313:	0	0	0	1	0	0	1	0
3321:	0	0	0	0	0	0	0	1
3329:	1	0	0	0	0	0	0	0
3337:	0	0	0	0	0	0	1	0
3345:	0	0	0	0	0	0	0	0
3353:	1	0	0	0	0	0	0	0
3361:	0	0	0	0	1	1	0	1
3369:	0	0	0	0	0	1	1	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 1 1

Sample Title: CP-5023 10-15

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

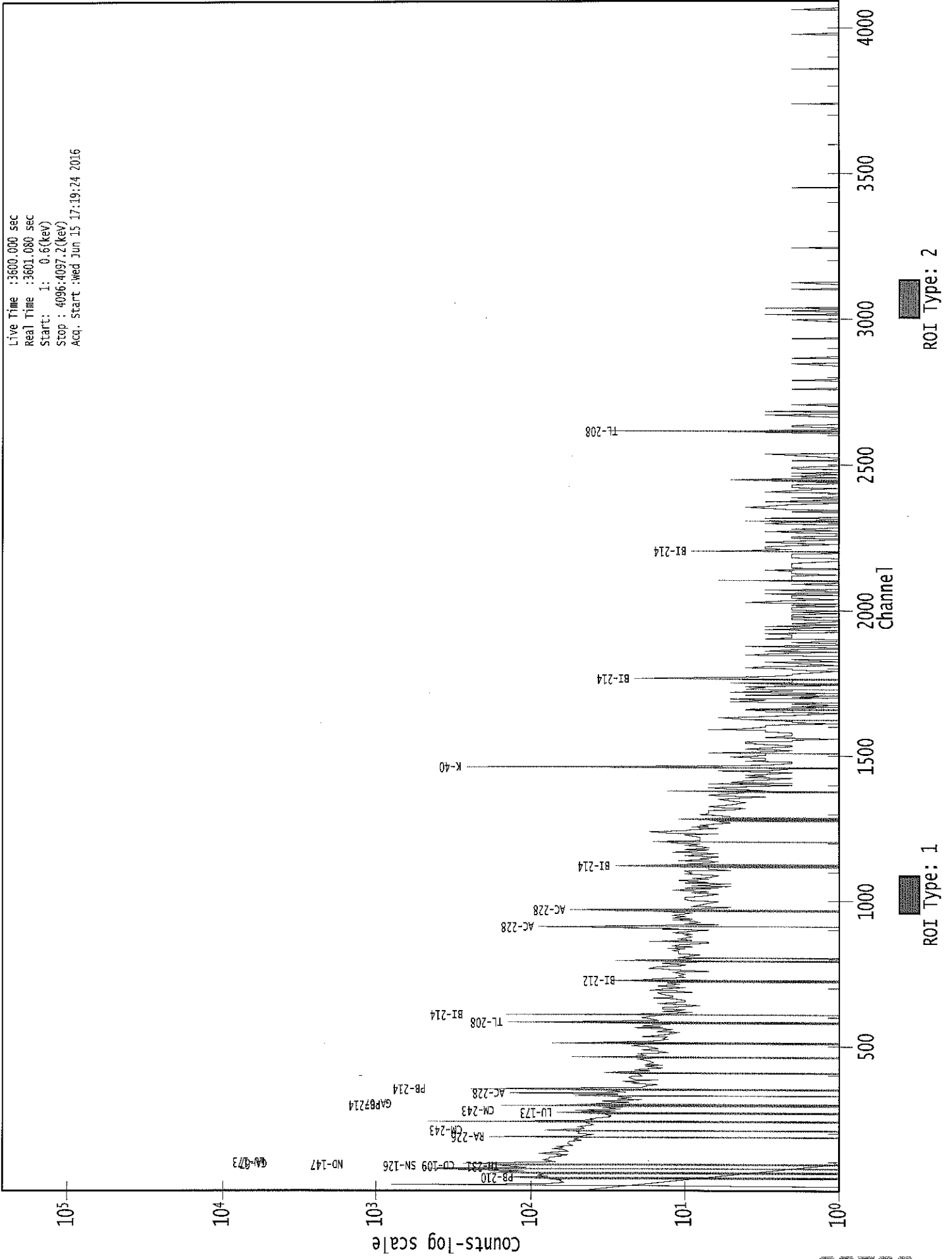
3825: 0 0 0 0 0 0 0 0

Sample Title: CP-5023 10-15

Channel								
3833:	0	0	0	0	0	0	0	0
3841:	0	1	0	0	0	0	0	0
3849:	0	0	0	0	0	0	0	0
3857:	0	2	0	0	0	0	0	0
3865:	0	0	0	1	0	0	1	0
3873:	0	0	0	0	0	0	0	0
3881:	1	0	0	0	0	0	0	0
3889:	0	0	0	0	0	0	1	0
3897:	0	0	0	0	0	1	0	0
3905:	0	0	1	0	0	0	1	0
3913:	0	0	0	0	0	0	0	0
3921:	0	0	0	0	0	0	0	0
3929:	0	1	0	0	0	0	0	0
3937:	0	0	0	0	0	0	0	1
3945:	0	0	0	0	1	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	1	0
3977:	0	2	0	0	0	1	0	0
3985:	0	0	0	0	0	0	1	0
3993:	0	0	0	0	1	0	0	0
4001:	0	0	0	0	0	0	1	1
4009:	0	0	0	0	0	0	0	0
4017:	0	1	0	0	0	1	0	0
4025:	0	0	1	0	0	0	0	0
4033:	0	0	1	0	0	0	0	0
4041:	0	1	0	0	0	0	1	0
4049:	0	0	1	0	0	0	0	0
4057:	0	0	0	0	0	2	0	0
4065:	0	0	0	1	0	0	0	0
4073:	1	0	0	0	0	0	0	0
4081:	0	0	1	0	0	0	0	0
4089:	0	0	0	0	0	0	0	0

0000038947.CNF

Live Time : 3600.000 sec
Real Time : 3601.080 sec
Start : 1: 0.6(keV)
Stop : 4096.4097.2(keV)
Acq. Start : wed Jun 15 17:19:24 2016



KBS
6/15/16Analysis Report for 1606040-08
CP-5024 00-02

GAMMA SPECTRUM ANALYSIS

Sample Identification : 1606040-08
Sample Description : CP-5024 00-02
Sample Type : SOIL

Sample Size : 3.925E+02 grams
Facility : Countroom

Sample Taken On : 6/2/2016 1:10:42PM
Acquisition Started : 6/15/2016 5:20:45PM

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 : 38948

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
6/16/16

Analysis Report for 1606040-08
CP-5024 00-02

PEAK LOCATE REPORT

Peak Locate Performed on : 6/15/2016 6:20:52PM
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	12.95	13.08	0.0000	0.00
2	54.98	55.08	0.0000	0.00
3	63.20	63.29	0.0000	0.00
4	76.43	76.52	0.0000	0.00
5	87.16	87.24	0.0000	0.00
6	89.70	89.78	0.0000	0.00
7	92.83	92.91	0.0000	0.00
8	99.76	99.83	0.0000	0.00
9	185.95	185.98	0.0000	0.00
10	239.06	239.06	0.0000	0.00
11	242.02	242.01	0.0000	0.00
12	270.04	270.02	0.0000	0.00
13	295.32	295.29	0.0000	0.00
14	300.05	300.02	0.0000	0.00
15	338.77	338.71	0.0000	0.00
16	352.07	352.00	0.0000	0.00
17	365.95	365.88	0.0000	0.00
18	438.71	438.60	0.0000	0.00
19	463.89	463.77	0.0000	0.00
20	477.71	477.58	0.0000	0.00
21	511.17	511.03	0.0000	0.00
22	583.52	583.34	0.0000	0.00
23	593.82	593.63	0.0000	0.00
24	596.35	596.17	0.0000	0.00
25	609.33	609.14	0.0000	0.00
26	727.10	726.85	0.0000	0.00
27	767.48	767.21	0.0000	0.00
28	782.27	782.00	0.0000	0.00
29	787.09	786.81	0.0000	0.00
30	795.11	794.83	0.0000	0.00
31	911.55	911.23	0.0000	0.00
32	965.23	964.89	0.0000	0.00
33	969.55	969.20	0.0000	0.00
34	1001.44	1001.08	0.0000	0.00
35	1015.29	1014.93	0.0000	0.00
36	1120.85	1120.45	0.0000	0.00
37	1186.57	1186.14	0.0000	0.00
38	1238.91	1238.46	0.0000	0.00
39	1461.39	1460.87	0.0000	0.00
40	1471.25	1470.73	0.0000	0.00
41	1588.87	1588.31	0.0000	0.00
42	1593.34	1592.78	0.0000	0.00

Analysis Report for 1606040-08
CP-5024 00-02

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
43	1620.58	1620.01	0.0000	0.00
44	1631.17	1630.60	0.0000	0.00
45	1730.62	1730.02	0.0000	0.00
46	1738.86	1738.26	0.0000	0.00
47	1765.18	1764.57	0.0000	0.00
48	1848.18	1847.56	0.0000	0.00
49	2104.59	2103.91	0.0000	0.00
50	2119.06	2118.38	0.0000	0.00
51	2286.08	2285.38	0.0000	0.00
52	2448.53	2447.81	0.0000	0.00
53	2614.93	2614.19	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

00 535A

Analysis Report for 1606040-08
CP-5024 00-02

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 6/15/2016 6:20:52PM

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	12.95	12 -	16	13.08	1.85E+03	131.61	1.96E+03	1.02
2	54.98	52 -	59	55.08	7.61E+01	90.04	1.31E+03	3.62
3	63.20	59 -	67	63.29	4.10E+02	112.38	1.70E+03	1.80
4	76.43	72 -	79	76.52	8.21E+02	118.32	1.78E+03	3.33
M	5	83 -	97	87.24	1.42E+02	60.46	7.52E+02	1.47
m	6	83 -	97	89.78	1.59E+02	60.37	6.97E+02	1.48
m	7	83 -	97	92.91	6.37E+02	73.21	6.16E+02	1.49
	8	98 -	103	99.83	1.07E+02	64.68	7.45E+02	2.00
	9	183 -	189	185.98	2.69E+02	63.83	5.51E+02	1.18
M	10	234 -	247	239.06	6.77E+02	64.41	3.10E+02	1.55
m	11	234 -	247	242.01	1.46E+02	45.40	2.66E+02	1.56
	12	267 -	272	270.02	6.32E+01	44.20	3.38E+02	1.81
M	13	292 -	303	295.29	2.34E+02	43.12	1.89E+02	1.65
m	14	292 -	303	300.02	3.84E+01	31.98	1.94E+02	1.66
	15	335 -	344	338.71	1.89E+02	56.19	3.38E+02	1.80
	16	348 -	355	352.00	3.99E+02	56.75	2.67E+02	1.31
	17	362 -	369	365.88	4.41E+01	37.31	2.00E+02	2.53
	18	435 -	442	438.60	3.25E+01	34.41	1.75E+02	2.78
	19	460 -	468	463.77	4.57E+01	36.25	1.71E+02	1.94
	20	472 -	483	477.58	5.98E+01	42.47	1.88E+02	2.77
	21	505 -	516	511.03	1.48E+02	50.12	2.40E+02	2.16
	22	579 -	587	583.34	2.27E+02	44.87	1.68E+02	1.52
M	23	592 -	603	593.63	1.88E+01	13.42	2.14E+01	1.90
m	24	592 -	603	596.17	2.31E+01	18.55	3.45E+01	1.86
	25	604 -	613	609.14	2.96E+02	45.72	1.28E+02	1.90
	26	722 -	732	726.85	6.17E+01	36.37	1.45E+02	2.04
	27	763 -	772	767.21	3.60E+01	33.53	1.40E+02	5.75
M	28	781 -	808	782.00	1.08E+01	8.77	2.19E+01	1.85
m	29	781 -	808	786.81	2.07E+01	20.81	6.45E+01	2.04
m	30	781 -	808	794.83	3.86E+01	20.42	6.27E+01	2.05
	31	907 -	915	911.23	1.33E+02	37.94	1.40E+02	1.59
M	32	962 -	973	964.89	3.43E+01	23.32	6.42E+01	2.19
m	33	962 -	973	969.20	1.03E+02	28.07	5.14E+01	2.19
	34	997 -	1006	1001.08	2.39E+01	23.43	6.43E+01	2.03
	35	1012 -	1018	1014.93	2.39E+01	18.63	4.61E+01	4.05
	36	1116 -	1125	1120.45	5.89E+01	31.19	1.06E+02	2.04
	37	1182 -	1190	1186.14	1.80E+01	23.24	7.20E+01	1.54
	38	1234 -	1243	1238.46	2.37E+01	28.14	9.85E+01	1.82
	39	1455 -	1466	1460.87	5.11E+02	48.29	3.56E+01	1.96
	40	1467 -	1475	1470.73	9.00E+00	12.37	1.80E+01	2.66

Analysis Report for 1606040-08

CP-5024 00-02

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
M	41	1588.87	1586 -	1595	1588.31	2.06E+01	11.18	1.00E+01	2.42
m	42	1593.34	1586 -	1595	1592.78	9.13E+00	9.80	1.20E+01	3.98
	43	1620.58	1617 -	1622	1620.01	6.68E+00	8.43	8.64E+00	1.47
	44	1631.17	1626 -	1636	1630.60	1.68E+01	10.31	4.42E+00	1.44
	45	1730.62	1726 -	1734	1730.02	1.76E+01	10.01	4.85E+00	3.05
	46	1738.86	1735 -	1741	1738.26	1.35E+01	8.50	3.07E+00	3.73
	47	1765.18	1761 -	1769	1764.57	5.03E+01	17.92	1.94E+01	1.91
	48	1848.18	1845 -	1849	1847.56	9.00E+00	6.00	0.00E+00	1.24
	49	2104.59	2099 -	2108	2103.91	1.10E+01	6.63	0.00E+00	3.50
	50	2119.06	2114 -	2122	2118.38	8.77E+00	8.02	4.45E+00	4.62
	51	2286.08	2283 -	2288	2285.38	8.00E+00	5.66	0.00E+00	1.66
	52	2448.53	2445 -	2450	2447.81	6.69E+00	6.40	2.63E+00	2.40
	53	2614.93	2609 -	2618	2614.19	5.80E+01	17.38	1.00E+01	2.59

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 : 6/15/2016 6:20:52PM

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	12.95	12 -	16	1.85E+03	131.61	1.96E+03	8.18E+01
	2	54.98	52 -	59	7.61E+01	90.04	1.31E+03	7.26E+01
	3	63.20	59 -	67	4.10E+02	112.38	1.70E+03	8.62E+01
	4	76.43	72 -	79	8.21E+02	118.32	1.78E+03	8.51E+01
M	5	87.16	83 -	97	1.42E+02	60.46	7.52E+02	4.51E+01
m	6	89.70	83 -	97	1.59E+02	60.37	6.97E+02	4.34E+01
m	7	92.83	83 -	97	6.37E+02	73.21	6.16E+02	4.08E+01
	8	99.76	98 -	103	1.07E+02	64.68	7.45E+02	5.04E+01
	9	185.95	183 -	189	2.69E+02	63.83	5.51E+02	4.50E+01
M	10	239.06	234 -	247	6.77E+02	64.41	3.10E+02	2.89E+01
m	11	242.02	234 -	247	1.46E+02	45.40	2.66E+02	2.68E+01
	12	270.04	267 -	272	6.32E+01	44.20	3.38E+02	3.39E+01
M	13	295.32	292 -	303	2.34E+02	43.12	1.89E+02	2.26E+01
m	14	300.05	292 -	303	3.84E+01	31.98	1.94E+02	2.29E+01
	15	338.77	335 -	344	1.89E+02	56.19	3.38E+02	4.03E+01

: 00537

Analysis Report for 1606040-08
CP-5024 00-02

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
16	352.07	348 -	355	3.99E+02	56.75	2.67E+02	3.31E+01
17	365.95	362 -	369	4.41E+01	37.31	2.00E+02	2.87E+01
18	438.71	435 -	442	3.25E+01	34.41	1.75E+02	2.67E+01
19	463.89	460 -	468	4.57E+01	36.25	1.71E+02	2.76E+01
20	477.71	472 -	483	5.98E+01	42.47	1.88E+02	3.25E+01
21	511.17	505 -	516	1.48E+02	50.12	2.40E+02	3.60E+01
22	583.52	579 -	587	2.27E+02	44.87	1.68E+02	2.73E+01
M 23	593.82	592 -	603	1.88E+01	13.42	2.14E+01	7.61E+00
m 24	596.35	592 -	603	2.31E+01	18.55	3.45E+01	9.66E+00
25	609.33	604 -	613	2.96E+02	45.72	1.28E+02	2.47E+01
26	727.10	722 -	732	6.17E+01	36.37	1.45E+02	2.70E+01
27	767.48	763 -	772	3.60E+01	33.53	1.40E+02	2.57E+01
M 28	782.27	781 -	808	1.08E+01	8.77	2.19E+01	7.70E+00
m 29	787.09	781 -	808	2.07E+01	20.81	6.45E+01	1.32E+01
m 30	795.11	781 -	808	3.86E+01	20.42	6.27E+01	1.30E+01
31	911.55	907 -	915	1.33E+02	37.94	1.40E+02	2.48E+01
M 32	965.23	962 -	973	3.43E+01	23.32	6.42E+01	1.32E+01
m 33	969.55	962 -	973	1.03E+02	28.07	5.14E+01	1.18E+01
34	1001.44	997 -	1006	2.39E+01	23.43	6.43E+01	1.75E+01
35	1015.29	1012 -	1018	2.39E+01	18.63	4.61E+01	1.30E+01
36	1120.85	1116 -	1125	5.89E+01	31.19	1.06E+02	2.23E+01
37	1186.57	1182 -	1190	1.80E+01	23.24	7.20E+01	1.78E+01
38	1238.91	1234 -	1243	2.37E+01	28.14	9.85E+01	2.17E+01
39	1461.39	1455 -	1466	5.11E+02	48.29	3.56E+01	1.39E+01
40	1471.25	1467 -	1475	9.00E+00	12.37	1.80E+01	8.89E+00
M 41	1588.87	1586 -	1595	2.06E+01	11.18	1.00E+01	5.20E+00
m 42	1593.34	1586 -	1595	9.13E+00	9.80	1.20E+01	5.70E+00
43	1620.58	1617 -	1622	6.68E+00	8.43	8.64E+00	5.47E+00
44	1631.17	1626 -	1636	1.68E+01	10.31	4.42E+00	5.14E+00
45	1730.62	1726 -	1734	1.76E+01	10.01	4.85E+00	4.50E+00
46	1738.86	1735 -	1741	1.35E+01	8.50	3.07E+00	3.52E+00
47	1765.18	1761 -	1769	5.03E+01	17.92	1.94E+01	9.00E+00
48	1848.18	1845 -	1849	9.00E+00	6.00	0.00E+00	0.00E+00
49	2104.59	2099 -	2108	1.10E+01	6.63	0.00E+00	0.00E+00
50	2119.06	2114 -	2122	8.77E+00	8.02	4.45E+00	4.44E+00
51	2286.08	2283 -	2288	8.00E+00	5.66	0.00E+00	0.00E+00
52	2448.53	2445 -	2450	6.69E+00	6.40	2.63E+00	3.10E+00
53	2614.93	2609 -	2618	5.80E+01	17.38	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

Analysis Report for 1606040-08
CP-5024 00-02

PEAK WITH NID REPORT

Peak Analysis Performed on : 6/15/2016 6:20:52PM

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	12.95	12 -	16	13.08	1.85E+03	131.61	1.96E+03	.....
2	54.98	52 -	59	55.08	7.61E+01	90.04	1.31E+03	.....
3	63.20	59 -	67	63.29	4.10E+02	112.38	1.70E+03	TH-234 TH-230
4	76.43	72 -	79	76.52	8.21E+02	118.32	1.78E+03	.....
M 5	87.16	83 -	97	87.24	1.42E+02	60.46	7.52E+02	SN-126 NP-237 EU-155 CD-109
m 6	89.70	83 -	97	89.78	1.59E+02	60.37	6.97E+02	.....
m 7	92.83	83 -	97	92.91	6.37E+02	73.21	6.16E+02	GA-67
8	99.76	98 -	103	99.83	1.07E+02	64.68	7.45E+02	LU-173
9	185.95	183 -	189	185.98	2.69E+02	63.83	5.51E+02	RA-226
M 10	239.06	234 -	247	239.06	6.77E+02	64.41	3.10E+02	PB-212
m 11	242.02	234 -	247	242.01	1.46E+02	45.40	2.66E+02	.....
12	270.04	267 -	272	270.02	6.32E+01	44.20	3.38E+02	.....
M 13	295.32	292 -	303	295.29	2.34E+02	43.12	1.89E+02	PB-214
m 14	300.05	292 -	303	300.02	3.84E+01	31.98	1.94E+02	PB-212 BI-210M GA-67
15	338.77	335 -	344	338.71	1.89E+02	56.19	3.38E+02	AC-228
16	352.07	348 -	355	352.00	3.99E+02	56.75	2.67E+02	PB-214
17	365.95	362 -	369	365.88	4.41E+01	37.31	2.00E+02	.....
18	438.71	435 -	442	438.60	3.25E+01	34.41	1.75E+02	.....
19	463.89	460 -	468	463.77	4.57E+01	36.25	1.71E+02	SB-125
20	477.71	472 -	483	477.58	5.98E+01	42.47	1.88E+02	BE-7 PM-144
21	511.17	505 -	516	511.03	1.48E+02	50.12	2.40E+02	.....
22	583.52	579 -	587	583.34	2.27E+02	44.87	1.68E+02	TL-208
M 23	593.82	592 -	603	593.63	1.88E+01	13.42	2.14E+01	.....
m 24	596.35	592 -	603	596.17	2.31E+01	18.55	3.45E+01	.....
25	609.33	604 -	613	609.14	2.96E+02	45.72	1.28E+02	BI-214
26	727.10	722 -	732	726.85	6.17E+01	36.37	1.45E+02	BI-212
27	767.48	763 -	772	767.21	3.60E+01	33.53	1.40E+02	.....
M 28	782.27	781 -	808	782.00	1.08E+01	8.77	2.19E+01	.....
m 29	787.09	781 -	808	786.81	2.07E+01	20.81	6.45E+01	.....
m 30	795.11	781 -	808	794.83	3.86E+01	20.42	6.27E+01	CS-134
31	911.55	907 -	915	911.23	1.33E+02	37.94	1.40E+02	AC-228 LU-172
M 32	965.23	962 -	973	964.89	3.43E+01	23.32	6.42E+01	.....
m 33	969.55	962 -	973	969.20	1.03E+02	28.07	5.14E+01	AC-228

Analysis Report for 1606040-08
CP-5024 00-02

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide	
34	1001.44	997 -	1006	1001.08	2.39E+01	23.43	6.43E+01	PA-234M	
35	1015.29	1012 -	1018	1014.93	2.39E+01	18.63	4.61E+01	.....
36	1120.85	1116 -	1125	1120.45	5.89E+01	31.19	1.06E+02	SC-46 TA-182 BI-214	
37	1186.57	1182 -	1190	1186.14	1.80E+01	23.24	7.20E+01	.....
38	1238.91	1234 -	1243	1238.46	2.37E+01	28.14	9.85E+01	CO-56	
39	1461.39	1455 -	1466	1460.87	5.11E+02	48.29	3.56E+01	K-40	
40	1471.25	1467 -	1475	1470.73	9.00E+00	12.37	1.80E+01	.....
M	41	1588.87	1586 -	1595	1588.31	2.06E+01	11.18	1.00E+01
m	42	1593.34	1586 -	1595	1592.78	9.13E+00	9.80	1.20E+01
43	1620.58	1617 -	1622	1620.01	6.68E+00	8.43	8.64E+00	BI-212	
44	1631.17	1626 -	1636	1630.60	1.68E+01	10.31	4.42E+00	.....
45	1730.62	1726 -	1734	1730.02	1.76E+01	10.01	4.85E+00	.....
46	1738.86	1735 -	1741	1738.26	1.35E+01	8.50	3.07E+00	.....
47	1765.18	1761 -	1769	1764.57	5.03E+01	17.92	1.94E+01	BI-214	
48	1848.18	1845 -	1849	1847.56	9.00E+00	6.00	0.00E+00	.....
49	2104.59	2099 -	2108	2103.91	1.10E+01	6.63	0.00E+00	.....
50	2119.06	2114 -	2122	2118.38	8.77E+00	8.02	4.45E+00	.....
51	2286.08	2283 -	2288	2285.38	8.00E+00	5.66	0.00E+00	.....
52	2448.53	2445 -	2450	2447.81	6.69E+00	6.40	2.63E+00	.....
53	2614.93	2609 -	2618	2614.19	5.80E+01	17.38	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 : 6/15/2016 6:20:52PM

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
1	12.95	1.85E+03	131.61	1.20E-05	1.66E-03
2	54.98	7.61E+01	90.04	2.11E-02	1.66E-03
3	63.20	4.10E+02	112.38	2.37E-02	1.74E-03
4	76.43	8.21E+02	118.32	2.56E-02	2.02E-03
M	5	1.42E+02	60.46	2.60E-02	2.26E-03
m	6	1.59E+02	60.37	2.60E-02	2.27E-03
m	7	6.37E+02	73.21	2.60E-02	2.27E-03
8	99.76	1.07E+02	64.68	2.58E-02	2.27E-03

Analysis Report for 1606040-08
CP-5024 00-02

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	9	185.95	2.69E+02	63.83	1.99E-02	2.40E-03
M	10	239.06	6.77E+02	64.41	1.70E-02	2.31E-03
m	11	242.02	1.46E+02	45.40	1.69E-02	2.30E-03
	12	270.04	6.32E+01	44.20	1.57E-02	2.26E-03
M	13	295.32	2.34E+02	43.12	1.47E-02	2.21E-03
m	14	300.05	3.84E+01	31.98	1.45E-02	2.21E-03
	15	338.77	1.89E+02	56.19	1.33E-02	2.14E-03
	16	352.07	3.99E+02	56.75	1.30E-02	2.12E-03
	17	365.95	4.41E+01	37.31	1.26E-02	2.09E-03
	18	438.71	3.25E+01	34.41	1.10E-02	1.81E-03
	19	463.89	4.57E+01	36.25	1.05E-02	1.68E-03
	20	477.71	5.98E+01	42.47	1.03E-02	1.60E-03
	21	511.17	1.48E+02	50.12	9.76E-03	1.43E-03
	22	583.52	2.27E+02	44.87	8.79E-03	1.06E-03
M	23	593.82	1.88E+01	13.42	8.66E-03	1.00E-03
m	24	596.35	2.31E+01	18.55	8.63E-03	9.90E-04
	25	609.33	2.96E+02	45.72	8.48E-03	9.23E-04
	26	727.10	6.17E+01	36.37	7.34E-03	7.36E-04
	27	767.48	3.60E+01	33.53	7.02E-03	7.88E-04
M	28	782.27	1.08E+01	8.77	6.91E-03	8.07E-04
m	29	787.09	2.07E+01	20.81	6.88E-03	8.13E-04
m	30	795.11	3.86E+01	20.42	6.82E-03	8.23E-04
	31	911.55	1.33E+02	37.94	6.09E-03	9.28E-04
M	32	965.23	3.43E+01	23.32	5.81E-03	8.19E-04
m	33	969.55	1.03E+02	28.07	5.79E-03	8.11E-04
	34	1001.44	2.39E+01	23.43	5.64E-03	7.46E-04
	35	1015.29	2.39E+01	18.63	5.58E-03	7.18E-04
	36	1120.85	5.89E+01	31.19	5.15E-03	5.05E-04
	37	1186.57	1.80E+01	23.24	4.93E-03	3.96E-04
	38	1238.91	2.37E+01	28.14	4.77E-03	3.84E-04
	39	1461.39	5.11E+02	48.29	4.23E-03	3.72E-04
	40	1471.25	9.00E+00	12.37	4.21E-03	3.73E-04
M	41	1588.87	2.06E+01	11.18	4.01E-03	3.82E-04
m	42	1593.34	9.13E+00	9.80	4.00E-03	3.82E-04
	43	1620.58	6.68E+00	8.43	3.96E-03	3.85E-04
	44	1631.17	1.68E+01	10.31	3.94E-03	3.85E-04
	45	1730.62	1.76E+01	10.01	3.81E-03	3.93E-04
	46	1738.86	1.35E+01	8.50	3.80E-03	3.94E-04
	47	1765.18	5.03E+01	17.92	3.77E-03	3.96E-04
	48	1848.18	9.00E+00	6.00	3.69E-03	4.01E-04
	49	2104.59	1.10E+01	6.63	3.50E-03	4.01E-04
	50	2119.06	8.77E+00	8.02	3.49E-03	4.01E-04
	51	2286.08	8.00E+00	5.66	3.43E-03	4.01E-04
	52	2448.53	6.69E+00	6.40	3.40E-03	4.01E-04
	53	2614.93	5.80E+01	17.38	3.40E-03	4.01E-04

Analysis Report for 1606040-08
CP-5024 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 : 6/15/2016 6:20:52PM

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	12.95	1.85E+03	131.61			1.85E+03	1.32E+02
2	54.98	7.61E+01	90.04			7.61E+01	9.00E+01
3	63.20	4.10E+02	112.38	2.91E+01	8.34E+00	3.81E+02	1.13E+02
4	76.43	8.21E+02	118.32			8.21E+02	1.18E+02
M 5	87.16	1.42E+02	60.46			1.42E+02	6.05E+01
m 6	89.70	1.59E+02	60.37			1.59E+02	6.04E+01
m 7	92.83	6.37E+02	73.21	4.47E+01	7.30E+00	5.92E+02	7.36E+01
8	99.76	1.07E+02	64.68			1.07E+02	6.47E+01
9	185.95	2.69E+02	63.83	3.13E+01	6.95E+00	2.37E+02	6.42E+01
M 10	239.06	6.77E+02	64.41	1.19E+01	7.10E+00	6.65E+02	6.48E+01
m 11	242.02	1.46E+02	45.40	2.33E+00	1.42E+00	1.44E+02	4.54E+01
12	270.04	6.32E+01	44.20			6.32E+01	4.42E+01
M 13	295.32	2.34E+02	43.12			2.34E+02	4.31E+01
m 14	300.05	3.84E+01	31.98			3.84E+01	3.20E+01
15	338.77	1.89E+02	56.19			1.89E+02	5.62E+01
16	352.07	3.99E+02	56.75	9.12E+00	4.79E+00	3.90E+02	5.69E+01
17	365.95	4.41E+01	37.31			4.41E+01	3.73E+01
18	438.71	3.25E+01	34.41			3.25E+01	3.44E+01
19	463.89	4.57E+01	36.25			4.57E+01	3.62E+01
20	477.71	5.98E+01	42.47			5.98E+01	4.25E+01
21	511.17	1.48E+02	50.12	6.97E+01	5.00E+00	7.82E+01	5.04E+01
22	583.52	2.27E+02	44.87	3.98E+00	3.57E+00	2.23E+02	4.50E+01
M 23	593.82	1.88E+01	13.42			1.88E+01	1.34E+01
m 24	596.35	2.31E+01	18.55	3.05E+00	3.80E+00	2.00E+01	1.89E+01
25	609.33	2.96E+02	45.72	8.66E+00	3.90E+00	2.87E+02	4.59E+01
26	727.10	6.17E+01	36.37			6.17E+01	3.64E+01
27	767.48	3.60E+01	33.53			3.60E+01	3.35E+01
M 28	782.27	1.08E+01	8.77			1.08E+01	8.77E+00
m 29	787.09	2.07E+01	20.81			2.07E+01	2.08E+01
m 30	795.11	3.86E+01	20.42			3.86E+01	2.04E+01
31	911.55	1.33E+02	37.94	2.01E+00	2.72E+00	1.31E+02	3.80E+01
M 32	965.23	3.43E+01	23.32			3.43E+01	2.33E+01
m 33	969.55	1.03E+02	28.07			1.03E+02	2.81E+01
34	1001.44	2.39E+01	23.43	2.30E+00	2.69E+00	2.16E+01	2.36E+01
35	1015.29	2.39E+01	18.63			2.39E+01	1.86E+01

Analysis Report for 1606040-08
CP-5024 00-02

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	36	1120.85	5.89E+01	31.19		5.89E+01	3.12E+01
	37	1186.57	1.80E+01	23.24		1.80E+01	2.32E+01
	38	1238.91	2.37E+01	28.14		2.37E+01	2.81E+01
	39	1461.39	5.11E+02	48.29	3.09E+00	1.97E+00	5.08E+02
	40	1471.25	9.00E+00	12.37		9.00E+00	1.24E+01
M	41	1588.87	2.06E+01	11.18		2.06E+01	1.12E+01
m	42	1593.34	9.13E+00	9.80		9.13E+00	9.80E+00
	43	1620.58	6.68E+00	8.43		6.68E+00	8.43E+00
	44	1631.17	1.68E+01	10.31		1.68E+01	1.03E+01
	45	1730.62	1.76E+01	10.01		1.76E+01	1.00E+01
	46	1738.86	1.35E+01	8.50		1.35E+01	8.50E+00
	47	1765.18	5.03E+01	17.92	2.70E+00	1.86E+00	4.76E+01
	48	1848.18	9.00E+00	6.00		9.00E+00	6.00E+00
	49	2104.59	1.10E+01	6.63		1.10E+01	6.63E+00
	50	2119.06	8.77E+00	8.02		8.77E+00	8.02E+00
	51	2286.08	8.00E+00	5.66		8.00E+00	5.66E+00
	52	2448.53	6.69E+00	6.40		6.69E+00	6.40E+00
	53	2614.93	5.80E+01	17.38	3.07E+00	1.34E+00	5.49E+01

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

AREA CORRECTION REPORT REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 6/15/2016 6:20:52PM
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	12.95	1.85E+03	131.61		1.85E+03	1.32E+02
	2	54.98	7.61E+01	90.04		7.61E+01	9.00E+01
	3	63.20	4.10E+02	112.38	2.91E+01	8.34E+00	3.81E+02
	4	76.43	8.21E+02	118.32		8.21E+02	1.18E+02
M	5	87.16	1.42E+02	60.46		1.42E+02	6.05E+01
m	6	89.70	1.59E+02	60.37		1.59E+02	6.04E+01
m	7	92.83	6.37E+02	73.21	4.47E+01	7.30E+00	5.92E+02
	8	99.76	1.07E+02	64.68		1.07E+02	6.47E+01
	9	185.95	2.69E+02	63.83	3.13E+01	6.95E+00	2.37E+02
M	10	239.06	6.77E+02	64.41	1.19E+01	7.10E+00	6.65E+02

Analysis Report for 1606040-08

CP-5024 00-02

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
m	11	242.02	1.46E+02	45.40	2.33E+00	1.42E+00	1.44E+02	4.54E+01
	12	270.04	6.32E+01	44.20			6.32E+01	4.42E+01
M	13	295.32	2.34E+02	43.12			2.34E+02	4.31E+01
m	14	300.05	3.84E+01	31.98			3.84E+01	3.20E+01
	15	338.77	1.89E+02	56.19			1.89E+02	5.62E+01
	16	352.07	3.99E+02	56.75	9.12E+00	4.79E+00	3.90E+02	5.69E+01
	17	365.95	4.41E+01	37.31			4.41E+01	3.73E+01
	18	438.71	3.25E+01	34.41			3.25E+01	3.44E+01
	19	463.89	4.57E+01	36.25			4.57E+01	3.62E+01
	20	477.71	5.98E+01	42.47			5.98E+01	4.25E+01
	21	511.17	1.48E+02	50.12	6.97E+01	5.00E+00	7.82E+01	5.04E+01
	22	583.52	2.27E+02	44.87	3.98E+00	3.57E+00	2.23E+02	4.50E+01
M	23	593.82	1.88E+01	13.42			1.88E+01	1.34E+01
m	24	596.35	2.31E+01	18.55	3.05E+00	3.80E+00	2.00E+01	1.89E+01
	25	609.33	2.96E+02	45.72	8.66E+00	3.90E+00	2.87E+02	4.59E+01
	26	727.10	6.17E+01	36.37			6.17E+01	3.64E+01
	27	767.48	3.60E+01	33.53			3.60E+01	3.35E+01
M	28	782.27	1.08E+01	8.77			1.08E+01	8.77E+00
m	29	787.09	2.07E+01	20.81			2.07E+01	2.08E+01
m	30	795.11	3.86E+01	20.42			3.86E+01	2.04E+01
	31	911.55	1.33E+02	37.94	2.01E+00	2.72E+00	1.31E+02	3.80E+01
M	32	965.23	3.43E+01	23.32			3.43E+01	2.33E+01
m	33	969.55	1.03E+02	28.07			1.03E+02	2.81E+01
	34	1001.44	2.39E+01	23.43	2.30E+00	2.69E+00	2.16E+01	2.36E+01
	35	1015.29	2.39E+01	18.63			2.39E+01	1.86E+01
	36	1120.85	5.89E+01	31.19			5.89E+01	3.12E+01
	37	1186.57	1.80E+01	23.24			1.80E+01	2.32E+01
	38	1238.91	2.37E+01	28.14			2.37E+01	2.81E+01
	39	1461.39	5.11E+02	48.29	3.09E+00	1.97E+00	5.08E+02	4.83E+01
	40	1471.25	9.00E+00	12.37			9.00E+00	1.24E+01
M	41	1588.87	2.06E+01	11.18			2.06E+01	1.12E+01
m	42	1593.34	9.13E+00	9.80			9.13E+00	9.80E+00
	43	1620.58	6.68E+00	8.43			6.68E+00	8.43E+00
	44	1631.17	1.68E+01	10.31			1.68E+01	1.03E+01
	45	1730.62	1.76E+01	10.01			1.76E+01	1.00E+01
	46	1738.86	1.35E+01	8.50			1.35E+01	8.50E+00
	47	1765.18	5.03E+01	17.92	2.70E+00	1.86E+00	4.76E+01	1.80E+01
	48	1848.18	9.00E+00	6.00			9.00E+00	6.00E+00
	49	2104.59	1.10E+01	6.63			1.10E+01	6.63E+00
	50	2119.06	8.77E+00	8.02			8.77E+00	8.02E+00
	51	2286.08	8.00E+00	5.66			8.00E+00	5.66E+00
	52	2448.53	6.69E+00	6.40			6.69E+00	6.40E+00
	53	2614.93	5.80E+01	17.38	3.07E+00	1.34E+00	5.49E+01	1.74E+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 1606040-08
CP-5024 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
BE-7	0.997	477.59 *	10.42	1.26E+00	9.20E-01
K-40	0.947	1460.81 *	10.67	2.15E+01	2.83E+00
GA-67	0.842	93.31 *	35.70	2.02E+01	4.15E+01
		208.95	2.24		
		300.22 *	16.00	5.22E+00	1.16E+01
CD-109	0.885	88.03 *	3.72	2.86E+00	1.25E+00
SN-126	0.973	87.57 *	37.00	2.82E-01	1.22E-01
EU-155	0.321	86.50 *	30.90	3.39E-01	1.47E-01
		105.30	20.70		
TL-208	0.876	583.14 *	30.22	1.61E+00	3.78E-01
		860.37	4.48		
		2614.66 *	35.85	8.63E-01	2.92E-01
BI-212	0.999	727.17 *	11.80	1.36E+00	8.14E-01
		1620.62 *	2.75	1.17E+00	1.48E+00
PB-212	0.973	238.63 *	44.60	1.68E+00	2.81E-01
		300.09 *	3.41	1.48E+00	1.25E+00
BI-214	0.906	609.31 *	46.30	1.40E+00	2.70E-01
		1120.29 *	15.10	1.45E+00	7.80E-01
		1764.49 *	15.80	1.53E+00	6.00E-01
		2204.22	4.98		
PB-214	0.997	295.21 *	19.19	1.58E+00	3.77E-01
		351.92 *	37.19	1.55E+00	3.39E-01
RA-226	0.989	186.21 *	3.28	6.96E+00	1.29E+01
AC-228	0.966	338.32 *	11.40	2.38E+00	8.03E-01
		911.07 *	27.70	1.49E+00	4.87E-01
		969.11 *	16.60	2.06E+00	6.28E-01
PA-234M	0.974	1001.03 *	0.92	7.96E+00	8.76E+00
TH-234	0.999	63.29 *	3.80	8.10E+00	2.47E+00
NP-237	0.934	86.50 *	12.60	8.28E-01	3.60E-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 1606040-08
CP-5024 00-02

UNIDENTIFIED PEAKS

Peak Locate Performed on : 6/15/2016 6:20:52PM
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	12.95	5.14722E-01	3.55		
2	54.98	2.11343E-02	59.17		
4	76.43	2.28159E-01	7.20		
m 6	89.70	4.41395E-02	18.99		
8	99.76	2.96144E-02	30.34	D-Esc	
m 11	242.02	4.00292E-02	15.76		
12	270.04	1.75431E-02	35.00		
17	365.95	1.22483E-02	42.31		
18	438.71	9.02546E-03	52.95	D-Esc	
19	463.89	1.26855E-02	39.68	Tol.	SB-125
21	511.17	2.17348E-02	32.19		
M 23	593.82	5.22158E-03	35.69		
m 24	596.35	5.56140E-03	47.28	Sum	
27	767.48	1.00000E-02	46.56		
M 28	782.27	3.01000E-03	40.49		
m 29	787.09	5.74922E-03	50.27		
m 30	795.11	1.07304E-02	26.43	Sum	
M 32	965.23	9.51913E-03	34.03	Sum	
35	1015.29	6.64598E-03	38.94		
37	1186.57	5.00000E-03	64.55	Sum	
38	1238.91	6.59056E-03	59.31	Tol.	CO-56
40	1471.25	2.50000E-03	68.72		
M 41	1588.87	5.70878E-03	27.20		
m 42	1593.34	2.53631E-03	53.65	D-Esc	
44	1631.17	4.66374E-03	30.70		
45	1730.62	4.88194E-03	28.49	Sum	
46	1738.86	3.74074E-03	31.56		
48	1848.18	2.50000E-03	33.33	Sum	
49	2104.59	3.05556E-03	30.15	S-Esc	
50	2119.06	2.43687E-03	45.68		
51	2286.08	2.22222E-03	35.36		
52	2448.53	1.85764E-03	47.87		

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 1606040-08
CP-5024 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
BE-7	0.99	477.59	*	10.42	1.26E+00	9.20E-01
K-40	0.94	1460.81	*	10.67	2.15E+01	2.83E+00
GA-67	0.84	93.31	*	35.70	2.02E+01	4.15E+01
		208.95		2.24		
		300.22	*	16.00	5.22E+00	1.16E+01
CD-109	0.88	88.03	*	3.72	2.86E+00	1.25E+00
SN-126	0.97	87.57	*	37.00	2.82E-01	1.22E-01
EU-155	0.32	86.50	*	30.90	3.39E-01	1.47E-01
		105.30		20.70		
TL-208	0.87	583.14	*	30.22	1.61E+00	3.78E-01
		860.37		4.48		
		2614.66	*	35.85	8.63E-01	2.92E-01
BI-212	0.99	727.17	*	11.80	1.36E+00	8.14E-01
		1620.62	*	2.75	1.17E+00	1.48E+00
PB-212	0.97	238.63	*	44.60	1.68E+00	2.81E-01
		300.09	*	3.41	1.48E+00	1.25E+00
BI-214	0.90	609.31	*	46.30	1.40E+00	2.70E-01
		1120.29	*	15.10	1.45E+00	7.80E-01
		1764.49	*	15.80	1.53E+00	6.00E-01
		2204.22		4.98		
PB-214	0.99	295.21	*	19.19	1.58E+00	3.77E-01
		351.92	*	37.19	1.55E+00	3.39E-01
RA-226	0.98	186.21	*	3.28	6.96E+00	1.29E+01
AC-228	0.96	338.32	*	11.40	2.38E+00	8.03E-01
		911.07	*	27.70	1.49E+00	4.87E-01
		969.11	*	16.60	2.06E+00	6.28E-01
PA-234M	0.97	1001.03	*	0.92	7.96E+00	8.76E+00
TH-234	0.99	63.29	*	3.80	8.10E+00	2.47E+00
NP-237	0.93	86.50	*	12.60	8.28E-01	3.60E-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 1606040-08
CP-5024 00-02

INTERFERENCE CORRECTED REPORT

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
BE-7	0.997	1.26E+00	9.20E-01	
K-40	0.947	2.15E+01	2.83E+00	
GA-67	0.842	1.36E+01	2.35E+01	
? CD-109	0.885	2.86E+00	1.25E+00	
? SN-126	0.973	2.82E-01	1.22E-01	
? EU-155	0.321	3.39E-01	1.47E-01	
TL-208	0.876	1.14E+00	2.31E-01	
BI-212	0.999	1.32E+00	7.14E-01	
PB-212	0.973	1.48E+00	2.76E-01	
BI-214	0.906	1.42E+00	2.35E-01	
PB-214	0.997	1.56E+00	2.52E-01	
RA-226	0.989	6.96E+00	1.29E+01	
AC-228	0.966	1.83E+00	3.47E-01	
PA-234M	0.974	7.96E+00	8.76E+00	
TH-234	0.999	8.10E+00	2.47E+00	
? NP-237	0.934	8.28E-01	3.60E-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 1606040-08
CP-5024 00-02

UNIDENTIFIED PEAKS

Peak Locate Performed on : 6/15/2016 6:20:52PM
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	12.95	5.14722E-01	3.55		
2	54.98	2.11343E-02	59.17		
4	76.43	2.28159E-01	7.20		
m 6	89.70	4.41395E-02	18.99		
8	99.76	2.96144E-02	30.34	D-Esc	
m 11	242.02	4.00292E-02	15.76		
12	270.04	1.75431E-02	35.00		
17	365.95	1.22483E-02	42.31		
18	438.71	9.02546E-03	52.95	D-Esc	
19	463.89	1.26855E-02	39.68	Tol.	SB-125
21	511.17	2.17348E-02	32.19		
M 23	593.82	5.22158E-03	35.69		
m 24	596.35	5.56140E-03	47.28	Sum	
27	767.48	1.00000E-02	46.56		
M 28	782.27	3.01000E-03	40.49		
m 29	787.09	5.74922E-03	50.27		
m 30	795.11	1.07304E-02	26.43	Sum	
M 32	965.23	9.51913E-03	34.03	Sum	
35	1015.29	6.64598E-03	38.94		
37	1186.57	5.00000E-03	64.55	Sum	
38	1238.91	6.59056E-03	59.31	Tol.	CO-56
40	1471.25	2.50000E-03	68.72		
M 41	1588.87	5.70878E-03	27.20		
m 42	1593.34	2.53631E-03	53.65	D-Esc	
44	1631.17	4.66374E-03	30.70		
45	1730.62	4.88194E-03	28.49	Sum	
46	1738.86	3.74074E-03	31.56		
48	1848.18	2.50000E-03	33.33	Sum	
49	2104.59	3.05556E-03	30.15	S-Esc	
50	2119.06	2.43687E-03	45.68		
51	2286.08	2.22222E-03	35.36		
52	2448.53	1.85764E-03	47.87		

Analysis Report for 1606040-08
 CP-5024 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	1.26E+00	1.43E+00	1.43E+00
+	NA-22	1274.54		99.94	7.91E-03	1.13E-01	1.13E-01
+	NA-24	1368.53		99.99	-9.93E+04	1.37E+05	1.91E+05
		2754.09		99.86	3.38E+04		1.37E+05
+	AL-26	1808.65		99.76	-1.03E-02	6.18E-02	6.18E-02
+	K-40	1460.81	*	10.67	2.15E+01	1.33E+00	1.33E+00
+	@ AR-41	1293.64		99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88		94.40	1.99E-03	6.94E-02	6.94E-02
		78.34		96.00	3.73E-01		1.05E-01
+	SC-46	889.25		99.98	1.92E-02	1.10E-01	1.10E-01
		1120.51		99.99	2.60E-01		2.02E-01
+	V-48	983.52		99.98	3.31E-02	1.88E-01	1.88E-01
		1312.10		97.50	7.24E-02		2.05E-01
+	CR-51	320.08		9.83	9.07E-02	9.77E-01	9.77E-01
+	MN-54	834.83		99.97	3.54E-02	1.25E-01	1.25E-01
+	CO-56	846.75		99.96	1.67E-02	1.09E-01	1.09E-01
		1037.75		14.03	3.21E-01		8.67E-01
		1238.25		67.00	1.77E-01		2.59E-01
		1771.40		15.51	-3.07E-02		6.67E-01
		2598.48		16.90	5.61E-02		4.50E-01
+	CO-57	122.06		85.51	-1.99E-03	7.83E-02	7.83E-02
		136.48		10.60	7.95E-02		6.53E-01
+	CO-58	810.76		99.40	3.54E-02	1.02E-01	1.02E-01
+	FE-59	1099.22		56.50	-5.51E-02	2.49E-01	2.49E-01
		1291.56		43.20	-1.38E-01		3.27E-01
+	CO-60	1173.22		100.00	6.51E-02	1.07E-01	1.24E-01
		1332.49		100.00	-2.13E-02		1.07E-01
+	ZN-65	1115.52		50.75	-1.59E-03	2.20E-01	2.20E-01
+	GA-67	93.31	*	35.70	2.02E+01	8.12E+00	8.12E+00
		208.95		2.24	1.90E+01		5.88E+01
		300.22	*	16.00	5.22E+00		1.28E+01
+	SE-75	121.11		16.70	1.02E-01	1.21E-01	4.17E-01

Analysis Report for 1606040-08
CP-5024 00-02

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	SE-75	136.00	59.20	7.45E-03	1.21E-01	1.21E-01
		264.65	59.80	9.91E-03		1.32E-01
		279.53	25.20	-4.88E-02		3.04E-01
		400.65	11.40	-2.19E-02		7.20E-01
+	RB-82	776.52	13.00	4.58E-01	1.13E+00	1.13E+00
+	RB-83	520.41	46.00	8.22E-02	1.89E-01	1.89E-01
		529.64	30.30	4.58E-03		3.02E-01
		552.65	16.40	-1.39E-01		5.17E-01
+	KR-85	513.99	0.43	-1.58E+01	2.17E+01	2.17E+01
+	SR-85	513.99	99.27	-7.95E-02	1.09E-01	1.09E-01
+	Y-88	898.02	93.40	5.97E-02	9.45E-02	1.26E-01
		1836.01	99.38	9.03E-03		9.45E-02
+	NB-93M	16.57	9.43	2.96E+01	1.25E+02	1.25E+02
+	NB-94	702.63	100.00	1.83E-02	1.05E-01	1.05E-01
		871.10	100.00	3.93E-02		1.06E-01
+	NB-95	765.79	99.81	6.73E-02	1.59E-01	1.59E-01
+	NB-95M	235.69	25.00	-4.36E+01	5.04E+00	5.04E+00
+	ZR-95	724.18	43.70	-2.07E-01	1.92E-01	2.98E-01
		756.72	55.30	-8.09E-02		1.92E-01
+	MO-99	181.06	6.20	1.15E+01	2.17E+01	2.91E+01
		739.58	12.80	8.60E+00		2.17E+01
		778.00	4.50	-2.91E+00		5.94E+01
+	RU-103	497.08	89.00	-2.79E-02	9.94E-02	9.94E-02
+	RU-106	621.84	9.80	4.72E-02	9.43E-01	9.43E-01
+	AG-108M	433.93	89.90	5.76E-03	7.66E-02	7.66E-02
		614.37	90.40	2.34E-02		1.06E-01
		722.95	90.50	9.95E-03		1.16E-01
+	CD-109	88.03	* 3.72	2.86E+00	4.80E+00	4.80E+00
+	AG-110M	657.75	93.14	2.40E-02	1.07E-01	1.07E-01
		677.61	10.53	-1.04E-01		8.46E-01
		706.67	16.46	-2.11E-01		6.02E-01
		763.93	21.98	3.50E-02		5.37E-01
		884.67	71.63	-1.64E-03		1.52E-01
		1384.27	23.94	6.66E-02		4.13E-01
+	CD-113M	263.70	0.02	9.83E+01	3.19E+02	3.19E+02
+	SN-113	255.12	1.93	-1.06E+00	1.20E-01	3.81E+00
		391.69	64.90	2.52E-02		1.20E-01
+	TE123M	159.00	84.10	3.18E-02	8.74E-02	8.74E-02
+	SB-124	602.71	97.87	-1.18E-01	1.01E-01	1.01E-01
		645.85	7.26	1.01E-01		1.59E+00
		722.78	11.10	9.44E-02		1.10E+00
		1691.02	49.00	6.47E-02		2.05E-01
+	I-125	35.49	6.49	-1.40E-01	2.24E+00	2.24E+00
+	SB-125	176.33	6.89	3.53E-01	2.40E-01	1.04E+00
		427.89	29.33	5.91E-02		2.40E-01
		463.38	10.35	5.58E-01		8.37E-01
		600.56	17.80	-1.54E-01		4.70E-01
		635.90	11.32	2.50E-01		8.12E-01

Analysis Report for 1606040-08
CP-5024 00-02

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	SB-126	414.70	83.30	-1.61E-02	1.82E-01	1.82E-01
		666.33	99.60	-2.74E-02		2.02E-01
		695.00	99.60	8.85E-03		2.15E-01
		720.50	53.80	5.56E-02		3.92E-01
+	SN-126	87.57 *	37.00	2.82E-01	4.74E-01	4.74E-01
+	SB-127	473.00	25.00	1.35E-01	2.92E+00	3.30E+00
		685.20	35.70	6.86E-02		2.92E+00
		783.80	14.70	2.94E+00		8.27E+00
+	I-129	29.78	57.00	-1.73E-01	4.02E-01	4.02E-01
		33.60	13.20	-3.49E-01		1.13E+00
		39.58	7.52	6.82E-01		1.38E+00
+	I-131	284.30	6.05	-9.52E-01	2.79E-01	3.30E+00
		364.48	81.20	1.56E-02		2.79E-01
		636.97	7.26	-1.01E+00		3.74E+00
		722.89	1.80	1.56E+00		1.82E+01
+	TE-132	49.72	13.10	2.96E+00	1.28E+00	9.40E+00
		228.16	88.00	-5.58E-01		1.28E+00
+	BA-133	81.00	33.00	4.91E-02	1.13E-01	1.92E-01
		302.84	17.80	1.19E-02		3.87E-01
		356.01	60.00	4.31E-02		1.13E-01
+	I-133	529.87	86.30	1.36E+03	3.77E+03	3.77E+03
+	XE-133	81.00	38.00	2.43E-01	9.50E-01	9.50E-01
+	CS-134	563.23	8.38	2.75E-01	9.74E-02	1.01E+00
		569.32	15.43	-6.30E-02		5.25E-01
		604.70	97.60	-8.89E-01		9.74E-02
		795.84	85.40	9.34E-02		1.37E-01
		801.93	8.73	-4.90E-01		1.11E+00
+	CS-135	268.24	16.00	4.14E-02	5.11E-01	5.11E-01
+	I-135	1131.51	22.50	-6.39E+13	1.07E+14	1.34E+14
		1260.41	28.60	-8.47E+12		1.07E+14
		1678.03	9.54	-5.29E+13		1.64E+14
+	CS-136	153.22	7.46	1.61E+00	1.79E-01	1.85E+00
		163.89	4.61	1.79E+00		2.91E+00
		176.55	13.56	6.77E-01		1.05E+00
		273.65	12.66	-3.18E-01		1.14E+00
		340.57	48.50	-2.07E-01		3.73E-01
		818.50	99.70	1.90E-02		1.79E-01
		1048.07	79.60	7.67E-02		3.00E-01
		1235.34	19.70	8.48E-03		1.48E+00
+	CS-137	661.65	85.12	-3.10E-02	1.08E-01	1.08E-01
+	LA-138	788.74	34.00	2.63E-01	1.44E-01	3.32E-01
		1435.80	66.00	-2.83E-02		1.44E-01
+	CE-139	165.85	80.35	-6.17E-03	8.65E-02	8.65E-02
+	BA-140	162.64	6.70	-5.24E-01	5.88E-01	2.03E+00
		304.84	4.50	-1.04E+00		3.14E+00
		423.70	3.20	1.10E+00		4.45E+00
		437.55	2.00	8.30E-01		7.77E+00
		537.32	25.00	-5.24E-02		5.88E-01
+	LA-140	328.77	20.50	6.98E-01	2.24E-01	8.51E-01

Analysis Report for 1606040-08
CP-5024 00-02

Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
LA-140	487.03	45.50	1.70E-01	2.24E-01	3.33E-01
	815.85	23.50	1.97E-01		7.82E-01
	1596.49	95.49	3.00E-02		2.24E-01
+ CE-141	145.44	48.40	8.56E-02	1.89E-01	1.89E-01
+ CE-143	57.36	11.80	1.62E+02	1.79E+02	4.70E+02
CE-144	293.26	42.00	-1.32E+02	6.33E-01	1.79E+02
	664.55	5.20	-2.50E+02		1.43E+03
	133.54	10.80	2.42E-04		6.33E-01
+ PM-144	476.78	42.00	9.45E-02	1.01E-01	2.02E-01
PM-145	618.01	98.60	3.03E-02	2.77E-01	1.01E-01
	696.49	99.49	1.96E-02		1.04E-01
	36.85	21.70	7.92E-02		5.25E-01
PM-146	37.36	39.70	4.18E-02	1.64E-01	2.77E-01
	42.30	15.10	-1.51E-01		6.05E-01
	72.40	2.31	4.60E-01		3.05E+00
+ ND-147	453.90	39.94	-2.62E-02	1.64E-01	1.64E-01
PM-149	735.90	14.01	2.05E-01	9.30E-01	7.14E-01
	747.13	13.10	2.01E-01		7.67E-01
	91.11	28.90	1.56E+00		9.30E-01
+ EU-152	531.02	13.10	1.08E+00	1.36E+02	1.55E+00
EU-152	285.90	3.10	-5.39E+01	3.16E-01	1.36E+02
	121.78	20.50	-8.03E-03	3.16E-01	3.16E-01
	244.69	5.40	-3.21E+00		1.24E+00
	344.27	19.13	-1.31E-01		3.56E-01
	778.89	9.20	-2.93E-01		1.04E+00
	964.01	10.40	-3.42E+00		1.27E+00
	1085.78	7.22	-4.27E-01		1.48E+00
	1112.02	9.60	1.87E-01		1.19E+00
	1407.95	14.94	2.96E-02		6.12E-01
	97.43	31.30	1.64E-01	2.38E-01	2.38E-01
+ GD-153	103.18	22.20	-6.42E-02		3.10E-01
+ EU-154	123.07	40.50	1.05E-03	1.60E-01	1.60E-01
EU-155	723.30	19.70	4.59E-02	3.30E-01	5.35E-01
	873.19	11.50	1.52E-01		8.96E-01
	996.32	10.30	8.22E-02		9.94E-01
	1004.76	17.90	1.03E-01		6.26E-01
	1274.45	35.50	2.21E-02		3.16E-01
	86.50	30.90	3.39E-01		5.70E-01
+ EU-156	105.30	20.70	1.82E-01	1.45E+00	3.30E-01
HO-166M	811.77	10.40	4.93E-01	1.29E-01	1.45E+00
	1153.47	7.20	7.95E-01		3.16E+00
	1230.71	8.90	-3.28E-01		2.57E+00
+ TM-171	184.41	72.60	1.58E-01	4.72E+01	1.29E-01
HF-172	280.45	29.60	-3.86E-02	5.82E-01	2.40E-01
	410.94	11.10	4.16E-01		7.27E-01
	711.69	54.10	-4.38E-02		1.65E-01
+ HF-172	66.72	0.14	1.36E+00	5.82E-01	4.72E+01
	81.75	4.52	6.68E-02		1.40E+00
	125.81	11.30	-7.52E-01		5.82E-01

Analysis Report for 1606040-08
CP-5024 00-02

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	LU-172	181.53	20.60	2.40E-01	7.33E-01	1.22E+00
		810.06	16.63	7.28E-01		2.11E+00
		912.12	15.25	1.13E+01		5.41E+00
		1093.66	62.50	-1.85E-02		7.33E-01
+	LU-173	100.72	5.24	1.30E+00	3.95E-01	1.38E+00
		272.11	21.20	-1.80E-02		3.95E-01
+	HF-175	343.40	84.00	2.27E-02	9.67E-02	9.67E-02
+	LU-176	88.34	13.30	1.19E+00	7.60E-02	7.20E-01
		201.83	86.00	-3.13E-02		7.85E-02
		306.78	94.00	2.34E-02		7.60E-02
+	TA-182	67.75	41.20	4.94E-03	1.72E-01	1.72E-01
		1121.30	34.90	7.70E-01		5.73E-01
		1189.05	16.23	-3.89E-02		8.71E-01
		1221.41	26.98	2.30E-01		6.08E-01
		1231.02	11.44	-2.41E-01		1.17E+00
+	IR-192	308.46	29.68	2.82E-03	1.56E-01	2.68E-01
		468.07	48.10	-7.42E-03		1.56E-01
+	HG-203	279.19	77.30	1.62E-01	1.22E-01	1.22E-01
+	BI-207	569.67	97.72	-9.84E-03	8.21E-02	8.21E-02
		1063.62	74.90	-9.27E-03		1.51E-01
+	TL-208	583.14	* 30.22	1.61E+00	2.79E-01	4.18E-01
		860.37	4.48	7.71E-01		2.61E+00
		2614.66	* 35.85	8.63E-01		2.79E-01
+	BI-210M	262.00	45.00	-3.32E-03	1.61E-01	1.61E-01
		300.00	23.00	6.82E-02		3.27E-01
+	PB-210	46.50	4.25	7.90E-01	2.08E+00	2.08E+00
+	PB-211	404.84	2.90	-1.69E+00	2.64E+00	2.64E+00
		831.96	2.90	4.08E-01		3.83E+00
+	BI-212	727.17	* 11.80	1.36E+00	1.25E+00	1.25E+00
		1620.62	* 2.75	1.17E+00		2.40E+00
+	PB-212	238.63	* 44.60	1.68E+00	3.50E-01	3.50E-01
		300.09	* 3.41	1.48E+00		3.65E+00
+	BI-214	609.31	* 46.30	1.40E+00	2.61E-01	2.61E-01
		1120.29	* 15.10	1.45E+00		1.17E+00
		1764.49	* 15.80	1.53E+00		6.98E-01
		2204.22	4.98	8.35E-01		2.31E+00
+	PB-214	295.21	* 19.19	1.58E+00	2.78E-01	6.40E-01
		351.92	* 37.19	1.55E+00		2.78E-01
+	RN-219	401.80	6.50	1.34E-01	1.20E+00	1.20E+00
+	RA-223	323.87	3.88	3.98E-01	1.83E+00	1.83E+00
+	RA-224	240.98	3.95	1.41E+01	3.79E+00	3.79E+00
+	RA-225	40.00	31.00	3.00E-01	6.05E-01	6.05E-01
+	RA-226	186.21	* 3.28	6.96E+00	2.79E+00	2.79E+00
+	TH-227	50.10	8.40	2.76E-01	8.71E-01	8.76E-01
		236.00	11.50	-7.53E+00		8.71E-01
		256.20	6.30	-1.22E+00		1.04E+00
+	AC-228	338.32	* 11.40	2.38E+00	5.97E-01	1.05E+00
		911.07	* 27.70	1.49E+00		5.97E-01

Analysis Report for 1606040-08
CP-5024 00-02

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	AC-228	969.11	*	16.60	2.06E+00	5.97E-01	9.07E-01
+	TH-230	48.44		16.90	-3.86E-01	4.47E-01	4.47E-01
		62.85		4.60	6.50E+00		2.19E+00
		67.67		0.37	5.09E-01		1.77E+01
+	PA-231	283.67		1.60	-1.15E+00	2.99E+00	4.00E+00
		302.67		2.30	9.20E-02		2.99E+00
+	TH-231	25.64		14.70	-2.77E-02	1.03E+00	3.09E+00
		84.21		6.40	4.03E-01		1.03E+00
+	PA-233	311.98		38.60	6.00E-03	2.46E-01	2.46E-01
+	PA-234	131.20		20.40	1.75E-01	3.41E-01	3.41E-01
		733.99		8.80	3.00E-01		1.16E+00
		946.00		12.00	-7.09E-02		8.16E-01
+	PA-234M	1001.03	*	0.92	7.96E+00	1.41E+01	1.41E+01
+	TH-234	63.29	*	3.80	8.10E+00	3.76E+00	3.76E+00
+	U-235	143.76		10.50	5.87E-01	6.62E-01	6.62E-01
		163.35		4.70	-3.66E-01		1.42E+00
		205.31		4.70	2.01E-01		1.54E+00
+	NP-237	86.50	*	12.60	8.28E-01	1.39E+00	1.39E+00
+	NP-239	106.10		22.70	-1.34E+00	1.44E+01	1.44E+01
		228.18		10.70	-1.35E+01		3.10E+01
		277.60		14.10	3.43E+00		2.64E+01
+	AM-241	59.54		35.90	2.86E-02	1.94E-01	1.94E-01
+	AM-243	74.67		66.00	-4.32E-01	1.37E-01	1.37E-01
+	CM-243	209.75		3.29	1.51E+00	5.48E-01	2.45E+00
		228.14		10.60	-2.80E-01		6.44E-01
		277.60		14.00	7.12E-02		5.48E-01

- + = Nuclide identified during the nuclide identification
 * = Energy line found in the spectrum
 > = MDA value not calculated
 @ = Half-life too short to be able to perform the decay correction
 ? = CAUTION: MDA value is inconsistent with Currie MDA at 95% confidence level

NUCLIDE MDA REPORT

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

: 00555

Analysis Report for 1606040-08

CP-5024 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	1.43E+00	1.43E+00	1.26E+00	6.88E-01
	NA-22	1274.54		99.94	1.13E-01	1.13E-01	7.91E-03	5.10E-02
	NA-24	1368.53		99.99	1.91E+05	1.37E+05	-9.93E+04	8.21E+04
		2754.09		99.86	1.37E+05		3.38E+04	5.11E+04
	AL-26	1808.65		99.76	6.18E-02	6.18E-02	-1.03E-02	2.40E-02
+	K-40	1460.81	*	10.67	1.33E+00	1.33E+00	2.15E+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	6.94E-02	6.94E-02	1.99E-03	3.36E-02
		78.34		96.00	1.05E-01		3.73E-01	5.17E-02
	SC-46	889.25		99.98	1.10E-01	1.10E-01	1.92E-02	5.05E-02
		1120.51		99.99	2.02E-01		2.60E-01	9.53E-02
	V-48	983.52		99.98	1.88E-01	1.88E-01	3.31E-02	8.61E-02
		1312.10		97.50	2.05E-01		7.24E-02	9.21E-02
	CR-51	320.08		9.83	9.77E-01	9.77E-01	9.07E-02	4.62E-01
	MN-54	834.83		99.97	1.25E-01	1.25E-01	3.54E-02	5.85E-02
	CO-56	846.75		99.96	1.09E-01	1.09E-01	1.67E-02	5.01E-02
		1037.75		14.03	8.67E-01		3.21E-01	3.95E-01
		1238.25		67.00	2.59E-01		1.77E-01	1.20E-01
		1771.40		15.51	6.67E-01		-3.07E-02	2.84E-01
		2598.48		16.90	4.50E-01		5.61E-02	1.74E-01
	CO-57	122.06		85.51	7.83E-02	7.83E-02	-1.99E-03	3.79E-02
		136.48		10.60	6.53E-01		7.95E-02	3.16E-01
	CO-58	810.76		99.40	1.02E-01	1.02E-01	3.54E-02	4.68E-02
	FE-59	1099.22		56.50	2.49E-01	2.49E-01	-5.51E-02	1.14E-01
		1291.56		43.20	3.27E-01		-1.38E-01	1.47E-01
	CO-60	1173.22		100.00	1.24E-01	1.07E-01	6.51E-02	5.69E-02
		1332.49		100.00	1.07E-01		-2.13E-02	4.75E-02
	ZN-65	1115.52		50.75	2.20E-01	2.20E-01	-1.59E-03	9.96E-02
+	GA-67	93.31	*	35.70	8.12E+00	8.12E+00	2.02E+01	4.01E+00
		208.95		2.24	5.88E+01		1.90E+01	2.84E+01
		300.22	*	16.00	1.28E+01		5.22E+00	6.24E+00
	SE-75	121.11		16.70	4.17E-01	1.21E-01	1.02E-01	2.02E-01
		136.00		59.20	1.21E-01		7.45E-03	5.84E-02
		264.65		59.80	1.32E-01		9.91E-03	6.32E-02
		279.53		25.20	3.04E-01		-4.88E-02	1.45E-01
		400.65		11.40	7.20E-01		-2.19E-02	3.39E-01
	RB-82	776.52		13.00	1.13E+00	1.13E+00	4.58E-01	5.22E-01
	RB-83	520.41		46.00	1.89E-01	1.89E-01	8.22E-02	8.80E-02
		529.64		30.30	3.02E-01		4.58E-03	1.41E-01
		552.65		16.40	5.17E-01		-1.39E-01	2.39E-01
	KR-85	513.99		0.43	2.17E+01	2.17E+01	-1.58E+01	1.03E+01
	SR-85	513.99		99.27	1.09E-01	1.09E-01	-7.95E-02	5.15E-02
	Y-88	898.02		93.40	1.26E-01	9.45E-02	5.97E-02	5.83E-02
		1836.01		99.38	9.45E-02		9.03E-03	3.96E-02
	NB-93M	16.57		9.43	1.25E+02	1.25E+02	2.96E+01	6.07E+01
	NB-94	702.63		100.00	1.05E-01	1.05E-01	1.83E-02	4.93E-02
		871.10		100.00	1.06E-01		3.93E-02	4.88E-02
	NB-95	765.79		99.81	1.59E-01	1.59E-01	6.73E-02	7.45E-02
	NB-95M	235.69		25.00	5.04E+00	5.04E+00	-4.36E+01	2.44E+00
	ZR-95	724.18		43.70	2.98E-01	1.92E-01	-2.07E-01	1.40E-01
		756.72		55.30	1.92E-01		-8.09E-02	8.86E-02

Analysis Report for 1606040-08

CP-5024 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	2.91E+01	2.17E+01	1.15E+01	1.40E+01
	739.58	12.80	2.17E+01		8.60E+00	1.01E+01
	778.00	4.50	5.94E+01		-2.91E+00	2.74E+01
RU-103	497.08	89.00	9.94E-02	9.94E-02	-2.79E-02	4.60E-02
RU-106	621.84	9.80	9.43E-01	9.43E-01	4.72E-02	4.39E-01
AG-108M	433.93	89.90	7.66E-02	7.66E-02	5.76E-03	3.57E-02
	614.37	90.40	1.06E-01		2.34E-02	4.96E-02
	722.95	90.50	1.16E-01		9.95E-03	5.42E-02
+ CD-109	88.03	* 3.72	4.80E+00	4.80E+00	2.86E+00	2.38E+00
AG-110M	657.75	93.14	1.07E-01	1.07E-01	2.40E-02	5.01E-02
	677.61	10.53	8.46E-01		-1.04E-01	3.90E-01
	706.67	16.46	6.02E-01		-2.11E-01	2.79E-01
	763.93	21.98	5.37E-01		3.50E-02	2.51E-01
	884.67	71.63	1.52E-01		-1.64E-03	7.00E-02
	1384.27	23.94	4.13E-01		6.66E-02	1.81E-01
CD-113M	263.70	0.02	3.19E+02	3.19E+02	9.83E+01	1.53E+02
SN-113	255.12	1.93	3.81E+00	1.20E-01	-1.06E+00	1.81E+00
	391.69	64.90	1.20E-01		2.52E-02	5.64E-02
TE123M	159.00	84.10	8.74E-02	8.74E-02	3.18E-02	4.22E-02
SB-124	602.71	97.87	1.01E-01	1.01E-01	-1.18E-01	4.67E-02
	645.85	7.26	1.59E+00		1.01E-01	7.43E-01
	722.78	11.10	1.10E+00		9.44E-02	5.14E-01
	1691.02	49.00	2.05E-01		6.47E-02	8.66E-02
I-125	35.49	6.49	2.24E+00	2.24E+00	-1.40E-01	1.07E+00
SB-125	176.33	6.89	1.04E+00	2.40E-01	3.53E-01	5.01E-01
	427.89	29.33	2.40E-01		5.91E-02	1.12E-01
	463.38	10.35	8.37E-01		5.58E-01	3.95E-01
	600.56	17.80	4.70E-01		-1.54E-01	2.18E-01
	635.90	11.32	8.12E-01		2.50E-01	3.78E-01
SB-126	414.70	83.30	1.82E-01	1.82E-01	-1.61E-02	8.54E-02
	666.33	99.60	2.02E-01		-2.74E-02	9.40E-02
	695.00	99.60	2.15E-01		8.85E-03	1.00E-01
	720.50	53.80	3.92E-01		5.56E-02	1.83E-01
+ SN-126	87.57	* 37.00	4.74E-01	4.74E-01	2.82E-01	2.34E-01
SB-127	473.00	25.00	3.30E+00	2.92E+00	1.35E-01	1.54E+00
	685.20	35.70	2.92E+00		6.86E-02	1.36E+00
	783.80	14.70	8.27E+00		2.94E+00	3.86E+00
I-129	29.78	57.00	4.02E-01	4.02E-01	-1.73E-01	1.93E-01
	33.60	13.20	1.13E+00		-3.49E-01	5.43E-01
	39.58	7.52	1.38E+00		6.82E-01	6.61E-01
I-131	284.30	6.05	3.30E+00	2.79E-01	-9.52E-01	1.56E+00
	364.48	81.20	2.79E-01		1.56E-02	1.32E-01
	636.97	7.26	3.74E+00		-1.01E+00	1.73E+00
	722.89	1.80	1.82E+01		1.56E+00	8.49E+00
TE-132	49.72	13.10	9.40E+00	1.28E+00	2.96E+00	4.52E+00
	228.16	88.00	1.28E+00		-5.58E-01	6.14E-01
BA-133	81.00	33.00	1.92E-01	1.13E-01	4.91E-02	9.27E-02
	302.84	17.80	3.87E-01		1.19E-02	1.83E-01
	356.01	60.00	1.13E-01		4.31E-02	5.33E-02
I-133	529.87	86.30	3.77E+03	3.77E+03	1.36E+03	1.77E+03
XE-133	81.00	38.00	9.50E-01	9.50E-01	2.43E-01	4.60E-01
CS-134	563.23	8.38	1.01E+00	9.74E-02	2.75E-01	4.68E-01
	569.32	15.43	5.25E-01		-6.30E-02	2.44E-01

Analysis Report for 1606040-08
CP-5024 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	9.74E-02	9.74E-02	-8.89E-01	4.56E-02
	795.84	85.40	1.37E-01		9.34E-02	6.38E-02
	801.93	8.73	1.11E+00		-4.90E-01	5.11E-01
CS-135	268.24	16.00	5.11E-01	5.11E-01	4.14E-02	2.45E-01
I-135	1131.51	22.50	1.34E+14	1.07E+14	-6.39E+13	6.12E+13
	1260.41	28.60	1.07E+14		-8.47E+12	4.86E+13
	1678.03	9.54	1.64E+14		-5.29E+13	6.35E+13
CS-136	153.22	7.46	1.85E+00	1.79E-01	1.61E+00	8.92E-01
	163.89	4.61	2.91E+00		1.79E+00	1.40E+00
	176.55	13.56	1.05E+00		6.77E-01	5.07E-01
	273.65	12.66	1.14E+00		-3.18E-01	5.45E-01
	340.57	48.50	3.73E-01		-2.07E-01	1.78E-01
	818.50	99.70	1.79E-01		1.90E-02	8.17E-02
	1048.07	79.60	3.00E-01		7.67E-02	1.38E-01
	1235.34	19.70	1.48E+00		8.48E-03	6.83E-01
CS-137	661.65	85.12	1.08E-01	1.08E-01	-3.10E-02	5.02E-02
LA-138	788.74	34.00	3.32E-01	1.44E-01	2.63E-01	1.55E-01
	1435.80	66.00	1.44E-01		-2.83E-02	6.30E-02
CE-139	165.85	80.35	8.65E-02	8.65E-02	-6.17E-03	4.16E-02
BA-140	162.64	6.70	2.03E+00	5.88E-01	-5.24E-01	9.80E-01
	304.84	4.50	3.14E+00		-1.04E+00	1.49E+00
	423.70	3.20	4.45E+00		1.10E+00	2.08E+00
	437.55	2.00	7.77E+00		8.30E-01	3.65E+00
	537.32	25.00	5.88E-01		-5.24E-02	2.71E-01
LA-140	328.77	20.50	8.51E-01	2.24E-01	6.98E-01	4.07E-01
	487.03	45.50	3.33E-01		1.70E-01	1.55E-01
	815.85	23.50	7.82E-01		1.97E-01	3.57E-01
	1596.49	95.49	2.24E-01		3.00E-02	9.83E-02
CE-141	145.44	48.40	1.89E-01	1.89E-01	8.56E-02	9.14E-02
CE-143	57.36	11.80	4.70E+02	1.79E+02	1.62E+02	2.27E+02
	293.26	42.00	1.79E+02		-1.32E+02	8.64E+01
	664.55	5.20	1.43E+03		-2.50E+02	6.65E+02
CE-144	133.54	10.80	6.33E-01	6.33E-01	2.42E-04	3.06E-01
PM-144	476.78	42.00	2.02E-01	1.01E-01	9.45E-02	9.48E-02
	618.01	98.60	1.01E-01		3.03E-02	4.71E-02
	696.49	99.49	1.04E-01		1.96E-02	4.86E-02
PM-145	36.85	21.70	5.25E-01	2.77E-01	7.92E-02	2.51E-01
	37.36	39.70	2.77E-01		4.18E-02	1.33E-01
	42.30	15.10	6.05E-01		-1.51E-01	2.90E-01
	72.40	2.31	3.05E+00		4.60E-01	1.48E+00
PM-146	453.90	39.94	1.64E-01	1.64E-01	-2.62E-02	7.61E-02
	735.90	14.01	7.14E-01		2.05E-01	3.31E-01
	747.13	13.10	7.67E-01		2.01E-01	3.56E-01
ND-147	91.11	28.90	9.30E-01	9.30E-01	1.56E+00	4.57E-01
	531.02	13.10	1.55E+00		1.08E+00	7.28E-01
PM-149	285.90	3.10	1.36E+02	1.36E+02	-5.39E+01	6.45E+01
EU-152	121.78	20.50	3.16E-01	3.16E-01	-8.03E-03	1.53E-01
	244.69	5.40	1.24E+00		-3.21E+00	5.90E-01
	344.27	19.13	3.56E-01		-1.31E-01	1.68E-01
	778.89	9.20	1.04E+00		-2.93E-01	4.79E-01
	964.01	10.40	1.27E+00		-3.42E+00	5.94E-01
	1085.78	7.22	1.48E+00		-4.27E-01	6.71E-01
	1112.02	9.60	1.19E+00		1.87E-01	5.45E-01

Analysis Report for 1606040-08
CP-5024 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	6.12E-01	3.16E-01	2.96E-02	2.66E-01
GD-153	97.43	31.30	2.38E-01	2.38E-01	1.64E-01	1.16E-01
	103.18	22.20	3.10E-01		-6.42E-02	1.50E-01
EU-154	123.07	40.50	1.60E-01	1.60E-01	1.05E-03	7.75E-02
	723.30	19.70	5.35E-01		4.59E-02	2.50E-01
	873.19	11.50	8.96E-01		1.52E-01	4.12E-01
	996.32	10.30	9.94E-01		8.22E-02	4.53E-01
	1004.76	17.90	6.26E-01		1.03E-01	2.87E-01
	1274.45	35.50	3.16E-01		2.21E-02	1.43E-01
+ EU-155	86.50	* 30.90	5.70E-01	3.30E-01	3.39E-01	2.82E-01
	105.30	20.70	3.30E-01		1.82E-01	1.60E-01
EU-156	811.77	10.40	1.45E+00	1.45E+00	4.93E-01	6.59E-01
	1153.47	7.20	3.16E+00		7.95E-01	1.45E+00
	1230.71	8.90	2.57E+00		-3.28E-01	1.17E+00
HO-166M	184.41	72.60	1.29E-01	1.29E-01	1.58E-01	6.27E-02
	280.45	29.60	2.40E-01		-3.86E-02	1.15E-01
	410.94	11.10	7.27E-01		4.16E-01	3.43E-01
	711.69	54.10	1.65E-01		-4.38E-02	7.63E-02
TM-171	66.72	0.14	4.72E+01	4.72E+01	1.36E+00	2.28E+01
HF-172	81.75	4.52	1.40E+00	5.82E-01	6.68E-02	6.79E-01
	125.81	11.30	5.82E-01		-7.52E-01	2.81E-01
LU-172	181.53	20.60	1.22E+00	7.33E-01	2.40E-01	5.84E-01
	810.06	16.63	2.11E+00		7.28E-01	9.62E-01
	912.12	15.25	5.41E+00		1.13E+01	2.59E+00
	1093.66	62.50	7.33E-01		-1.85E-02	3.36E-01
LU-173	100.72	5.24	1.38E+00	3.95E-01	1.30E+00	6.71E-01
	272.11	21.20	3.95E-01		-1.80E-02	1.90E-01
HF-175	343.40	84.00	9.67E-02	9.67E-02	2.27E-02	4.57E-02
LU-176	88.34	13.30	7.20E-01	7.60E-02	1.19E+00	3.53E-01
	201.83	86.00	7.85E-02		-3.13E-02	3.77E-02
	306.78	94.00	7.60E-02		2.34E-02	3.61E-02
TA-182	67.75	41.20	1.72E-01	1.72E-01	4.94E-03	8.34E-02
	1121.30	34.90	5.73E-01		7.70E-01	2.71E-01
	1189.05	16.23	8.71E-01		-3.89E-02	4.00E-01
	1221.41	26.98	6.08E-01		2.30E-01	2.82E-01
	1231.02	11.44	1.17E+00		-2.41E-01	5.35E-01
IR-192	308.46	29.68	2.68E-01	1.56E-01	2.82E-03	1.27E-01
	468.07	48.10	1.56E-01		-7.42E-03	7.22E-02
HG-203	279.19	77.30	1.22E-01	1.22E-01	1.62E-01	5.84E-02
BI-207	569.67	97.72	8.21E-02	8.21E-02	-9.84E-03	3.81E-02
	1063.62	74.90	1.51E-01		-9.27E-03	6.91E-02
+ TL-208	583.14	* 30.22	4.18E-01	2.79E-01	1.61E+00	1.99E-01
	860.37	4.48	2.61E+00		7.71E-01	1.21E+00
	2614.66	* 35.85	2.79E-01		8.63E-01	1.18E-01
BI-210M	262.00	45.00	1.61E-01	1.61E-01	-3.32E-03	7.68E-02
	300.00	23.00	3.27E-01		6.82E-02	1.56E-01
PB-210	46.50	4.25	2.08E+00	2.08E+00	7.90E-01	1.00E+00
PB-211	404.84	2.90	2.64E+00	2.64E+00	-1.69E+00	1.25E+00
	831.96	2.90	3.83E+00		4.08E-01	1.78E+00
+ BI-212	727.17	* 11.80	1.25E+00	1.25E+00	1.36E+00	5.96E-01
	1620.62	* 2.75	2.40E+00		1.17E+00	9.62E-01
+ PB-212	238.63	* 44.60	3.50E-01	3.50E-01	1.68E+00	1.72E-01
	300.09	* 3.41	3.65E+00		1.48E+00	1.77E+00

Analysis Report for 1606040-08
CP-5024 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	2.61E-01	2.61E-01	1.40E+00	1.24E-01
		1120.29	*	15.10	1.17E+00		1.45E+00	5.49E-01
		1764.49	*	15.80	6.98E-01		1.53E+00	3.06E-01
		2204.22		4.98	2.31E+00		8.35E-01	1.00E+00
+	PB-214	295.21	*	19.19	6.40E-01	2.78E-01	1.58E+00	3.11E-01
		351.92	*	37.19	2.78E-01		1.55E+00	1.34E-01
	RN-219	401.80		6.50	1.20E+00	1.20E+00	1.34E-01	5.65E-01
	RA-223	323.87		3.88	1.83E+00	1.83E+00	3.98E-01	8.65E-01
	RA-224	240.98		3.95	3.79E+00	3.79E+00	1.41E+01	1.85E+00
	RA-225	40.00		31.00	6.05E-01	6.05E-01	3.00E-01	2.90E-01
+	RA-226	186.21	*	3.28	2.79E+00	2.79E+00	6.96E+00	1.36E+00
		TH-227	50.10		8.40	8.76E-01	8.71E-01	2.76E-01	4.22E-01
		236.00		11.50	8.71E-01		-7.53E+00	4.22E-01
		256.20		6.30	1.04E+00		-1.22E+00	4.94E-01
+	AC-228	338.32	*	11.40	1.05E+00	5.97E-01	2.38E+00	5.07E-01
		911.07	*	27.70	5.97E-01		1.49E+00	2.83E-01
		969.11	*	16.60	9.07E-01		2.06E+00	4.26E-01
	TH-230	48.44		16.90	4.47E-01	4.47E-01	-3.86E-01	2.15E-01
		62.85		4.60	2.19E+00		6.50E+00	1.07E+00
		67.67		0.37	1.77E+01		5.09E-01	8.58E+00
	PA-231	283.67		1.60	4.00E+00	2.99E+00	-1.15E+00	1.89E+00
		302.67		2.30	2.99E+00		9.20E-02	1.42E+00
	TH-231	25.64		14.70	3.09E+00	1.03E+00	-2.77E-02	1.48E+00
		84.21		6.40	1.03E+00		4.03E-01	4.97E-01
	PA-233	311.98		38.60	2.46E-01	2.46E-01	6.00E-03	1.17E-01
	PA-234	131.20		20.40	3.41E-01	3.41E-01	1.75E-01	1.65E-01
		733.99		8.80	1.16E+00		3.00E-01	5.42E-01
		946.00		12.00	8.16E-01		-7.09E-02	3.71E-01
+	PA-234M	1001.03	*	0.92	1.41E+01	1.41E+01	7.96E+00	6.57E+00
+	TH-234	63.29	*	3.80	3.76E+00	3.76E+00	8.10E+00	1.85E+00
	U-235	143.76		10.50	6.62E-01	6.62E-01	5.87E-01	3.20E-01
		163.35		4.70	1.42E+00		-3.66E-01	6.85E-01
		205.31		4.70	1.54E+00		2.01E-01	7.39E-01
+	NP-237	86.50	*	12.60	1.39E+00	1.39E+00	8.28E-01	6.88E-01
		NP-239	106.10		22.70	1.44E+01	1.44E+01	-1.34E+00	6.99E+00
		228.18		10.70	3.10E+01		-1.35E+01	1.48E+01
		277.60		14.10	2.64E+01		3.43E+00	1.26E+01
	AM-241	59.54		35.90	1.94E-01	1.94E-01	2.86E-02	9.39E-02
	AM-243	74.67		66.00	1.37E-01	1.37E-01	-4.32E-01	6.68E-02
	CM-243	209.75		3.29	2.45E+00	5.48E-01	1.51E+00	1.18E+00
		228.14		10.60	6.44E-01		-2.80E-01	3.08E-01
		277.60		14.00	5.48E-01		7.12E-02	2.62E-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 1606040-08
CP-5024 00-02

No Action Level results available for reporting purposes.

DATA REVIEW COMMENTS REPORT

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

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

Sample Title: CP-5024 00-02

Elapsed Live time: 3600

Elapsed Real Time: 3601

Channel	1	9	17	25	33	41	49	57	65	73	81	89	97	105	113	121	129	137	145	153	161	169	177	185	193	201	209	217	225	233	241	249	257	265	273	281	289	297	305	313	321	329	337	345	353	361
	0	1084	153	65	56	75	82	96	93	124	107	99	54	89	82	54	90	58	56	44	48	39	50	64	42	45	71	37	43	43	83	36	22	26	27	28	30	31	27	19	20	32	27	14	77	19
	0	745	98	79	69	57	68	88	94	128	103	197	80	86	73	58	64	52	50	64	51	55	49	244	40	34	59	35	33	33	122	31	29	32	11	30	23	22	18	25	18	25	16	16	11	
	0	459	107	53	48	70	78	82	98	360	102	101	106	65	71	63	57	59	40	48	55	50	50	75	29	32	38	42	34	43	27	38	30	34	24	18	19	22	24	19	31	24	76	26	12	17
	0	203	110	69	62	76	68	96	107	149	127	224	92	57	58	57	63	57	52	38	43	44	34	44	40	47	46	35	51	25	35	40	31	24	25	19	25	26	24	21	24	21	18	12	19	
	0	2019	78	50	56	72	88	117	102	452	117	507	59	75	57	62	51	52	48	51	43	37	50	45	40	45	42	32	44	28	40	24	35	22	25	25	22	21	23	21	23	23	23	23	27	
	0	323	60	58	50	72	98	98	105	282	104	169	76	77	52	55	54	48	45	50	48	49	38	43	43	37	45	32	188	24	18	31	59	39	24	34	24	17	17	19	19	24	22	21	21	
	20	143	59	71	55	125	102	267	124	90	179	81	66	72	56	56	54	49	61	50	33	33	29	41	41	43	43	31	480	23	28	34	47	25	21	147	21	20	18	19	19	82	14	18		
	554	144	59	69	67	69	109	314	127	106	175	78	52	61	64	60	66	95	56	58	56	68	43	41	32	46	51	27	47	26	32	34	25	25	25	109	18	25	24	50	25	17	25	16	18	

369: 13 8 10 22 20 12 17 21

Sample Title: CP-5024 00-02

Channel	-----	-----	-----	-----	-----	-----	-----	-----
377:	18	18	10	25	23	14	20	18
385:	22	16	17	16	17	20	10	13
393:	19	21	13	25	20	16	16	17
401:	14	24	19	20	19	22	10	24
409:	26	25	18	12	17	11	14	19
417:	16	13	21	13	14	18	15	12
425:	9	14	13	8	20	12	10	14
433:	11	14	9	16	12	25	16	19
441:	14	9	12	15	13	14	7	15
449:	12	12	8	8	13	12	8	12
457:	8	18	16	7	16	12	27	27
465:	10	11	14	7	9	11	13	9
473:	12	10	26	15	19	9	12	15
481:	10	9	8	3	12	12	13	7
489:	18	11	10	10	9	11	17	9
497:	11	6	10	14	14	11	8	10
505:	9	10	7	14	15	46	73	42
513:	12	14	15	11	10	16	14	6
521:	9	17	11	5	10	8	10	12
529:	13	22	10	15	18	8	9	8
537:	10	11	11	7	10	6	14	8
545:	11	11	14	8	14	13	13	8
553:	6	13	12	15	7	9	8	10
561:	13	11	18	11	9	13	9	8
569:	12	14	13	17	9	17	8	14
577:	9	11	13	7	10	23	150	78
585:	10	14	6	8	8	10	3	2
593:	13	9	9	16	5	7	9	12
601:	11	9	2	5	10	8	11	26
609:	151	122	13	6	8	11	16	5
617:	13	9	11	10	9	8	8	9
625:	7	5	9	11	10	8	8	6
633:	12	6	13	6	10	6	8	6
641:	8	11	6	7	9	16	9	15
649:	9	12	8	5	10	6	13	4
657:	12	10	9	7	10	13	3	6
665:	11	11	9	12	11	9	7	6
673:	7	2	4	8	7	11	8	8
681:	8	9	12	5	11	6	9	9
689:	7	11	6	12	6	8	14	4
697:	9	14	10	10	5	16	10	8
705:	11	7	7	8	5	8	11	2
713:	8	6	6	12	8	9	10	14
721:	5	6	9	10	13	9	25	28
729:	11	7	9	7	8	4	8	9
737:	16	9	3	5	6	9	2	10
745:	8	4	6	8	9	11	7	8
753:	8	3	8	9	2	10	6	13
761:	6	11	3	9	14	13	15	15
769:	13	12	7	5	9	9	12	5
777:	6	7	7	8	3	11	7	9
785:	12	9	16	9	6	6	8	4
793:	2	11	25	8	7	8	7	3

801: 8 4 8 6 9 11 8 2

Sample Title: CP-5024 00-02

Channel	1	2	3	4	5	6	7	8	9
809:	8	4	6	4	6	2	3	2	
817:	6	10	9	4	3	7	4	8	
825:	11	6	5	6	7	2	9	7	
833:	11	10	12	13	7	10	9	12	
841:	9	1	5	7	5	4	10	7	
849:	4	7	4	5	5	12	4	13	
857:	9	7	11	4	17	5	8	8	
865:	4	5	5	6	7	6	7	6	
873:	9	7	7	3	7	3	10	5	
881:	8	5	9	7	4	4	9	6	
889:	6	4	5	6	5	4	7	4	
897:	8	8	8	7	6	6	3	8	
905:	8	4	11	1	6	22	85	46	
913:	12	10	10	6	10	8	6	7	
921:	6	5	4	3	7	6	10	10	
929:	10	8	4	8	6	9	8	4	
937:	10	5	5	4	7	2	5	7	
945:	6	4	2	3	8	7	5	9	
953:	10	4	11	3	5	2	11	7	
961:	6	4	8	7	21	11	8	28	
969:	53	33	6	9	1	5	6	5	
977:	3	6	1	6	13	2	4	5	
985:	4	5	7	4	7	2	4	7	
993:	5	6	6	5	2	7	4	5	
1001:	13	11	5	3	4	2	4	7	
1009:	4	7	3	3	8	8	11	9	
1017:	7	1	6	9	4	8	9	5	
1025:	5	3	3	7	7	1	6	4	
1033:	5	7	6	3	3	6	6	6	
1041:	3	3	6	5	9	7	6	6	
1049:	7	4	6	7	3	4	5	6	
1057:	2	6	8	6	6	3	9	4	
1065:	5	6	6	4	7	4	9	5	
1073:	6	6	5	4	7	3	6	8	
1081:	10	4	7	2	3	9	2	6	
1089:	3	4	4	5	6	8	11	2	
1097:	10	4	7	2	8	5	3	5	
1105:	12	6	6	6	5	3	10	5	
1113:	1	7	6	3	4	6	12	33	
1121:	28	8	7	8	3	9	6	4	
1129:	6	4	7	4	4	7	5	9	
1137:	5	3	7	2	6	2	11	3	
1145:	8	8	4	4	2	7	5	2	
1153:	6	3	12	7	6	7	5	8	
1161:	7	4	7	6	1	3	2	3	
1169:	2	6	4	5	6	6	5	8	
1177:	3	5	11	2	3	5	3	6	
1185:	6	13	8	3	7	3	5	5	
1193:	4	8	0	9	5	6	5	8	
1201:	3	8	6	6	7	5	10	9	
1209:	8	7	4	3	4	1	2	8	
1217:	5	7	8	9	8	9	8	9	
1225:	6	6	7	3	5	6	5	7	

1233: 5 6 6 5 5 18 14 7

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Channel	-----	-----	-----	-----	-----	-----	-----	-----
1241:	4	3	5	4	12	5	11	8
1249:	4	3	10	5	9	3	7	3
1257:	4	3	2	4	7	4	7	5
1265:	4	2	8	2	2	6	4	1
1273:	6	2	8	4	3	6	1	3
1281:	9	4	4	5	3	8	7	8
1289:	4	4	4	4	4	1	5	5
1297:	5	3	4	4	2	6	3	4
1305:	2	4	1	4	7	5	2	2
1313:	7	1	3	2	3	0	6	1
1321:	1	2	2	2	3	5	6	2
1329:	2	5	3	1	6	4	2	3
1337:	5	3	1	2	4	4	2	4
1345:	3	6	3	3	2	3	2	0
1353:	2	1	3	4	0	0	5	5
1361:	4	3	2	4	2	4	1	0
1369:	2	3	1	4	3	0	1	4
1377:	9	7	5	1	0	5	2	3
1385:	2	1	4	0	2	4	3	2
1393:	3	2	4	3	1	0	4	1
1401:	5	3	1	1	0	2	1	4
1409:	3	4	4	0	6	2	2	3
1417:	1	1	3	2	3	2	0	3
1425:	1	1	4	2	2	1	2	4
1433:	2	1	1	1	3	4	4	4
1441:	2	1	3	4	1	0	2	1
1449:	2	3	2	1	0	2	2	5
1457:	2	5	18	138	244	99	13	1
1465:	2	0	2	0	1	6	2	4
1473:	1	2	0	2	0	0	1	3
1481:	1	4	3	0	1	0	0	2
1489:	2	0	1	2	1	1	2	2
1497:	1	0	1	2	4	2	4	2
1505:	1	3	1	2	2	4	3	0
1513:	4	2	2	1	1	3	0	1
1521:	1	2	1	0	1	1	2	1
1529:	1	2	0	3	4	1	1	3
1537:	1	1	1	1	0	0	3	1
1545:	0	2	1	4	1	1	1	2
1553:	1	0	1	1	4	2	3	2
1561:	2	2	1	3	0	1	1	0
1569:	2	1	0	0	0	0	1	1
1577:	0	0	1	1	2	3	1	6
1585:	2	0	3	9	10	3	2	5
1593:	2	3	0	2	2	1	1	1
1601:	0	1	1	1	1	3	5	3
1609:	5	1	0	3	1	1	0	1
1617:	1	2	0	5	3	0	1	1
1625:	0	1	0	3	2	6	2	1
1633:	1	2	1	0	0	2	3	0
1641:	1	0	2	1	3	1	3	1
1649:	2	4	3	1	0	2	1	0
1657:	3	4	1	2	1	2	1	0

1665: 2 1 3 2 1 3 1 1

Sample Title: CP-5024 00-02

Channel	1	2	3	4	5	6	7	8
1673:	0	0	0	0	0	0	2	1
1681:	1	0	1	1	0	1	0	0
1689:	1	0	0	0	3	5	1	0
1697:	4	0	2	0	1	0	1	2
1705:	3	2	1	1	0	2	0	1
1713:	0	2	2	1	0	2	1	1
1721:	1	2	3	1	0	0	0	2
1729:	5	4	7	1	1	0	1	1
1737:	3	4	3	3	0	0	0	1
1745:	0	1	2	0	0	0	2	0
1753:	1	1	1	1	1	0	0	1
1761:	0	3	6	14	24	8	2	2
1769:	1	2	1	1	1	1	0	2
1777:	0	0	1	1	0	2	0	1
1785:	0	0	3	1	1	0	0	1
1793:	2	0	0	0	0	0	4	0
1801:	0	1	1	1	0	0	0	1
1809:	1	1	0	0	0	1	1	1
1817:	2	1	1	0	2	0	1	0
1825:	0	0	0	0	0	0	2	1
1833:	0	1	1	1	3	0	0	1
1841:	1	2	1	0	0	1	2	6
1849:	0	0	0	1	0	1	0	0
1857:	0	2	1	2	0	2	0	2
1865:	0	1	2	1	2	2	1	1
1873:	3	0	0	1	2	1	3	0
1881:	0	1	1	1	0	1	0	2
1889:	0	0	1	2	0	0	0	3
1897:	1	0	1	2	0	0	1	0
1905:	1	0	0	1	1	2	1	1
1913:	1	1	0	2	1	3	1	0
1921:	1	1	0	2	0	0	1	1
1929:	0	2	0	0	2	1	0	1
1937:	1	1	1	0	0	0	3	2
1945:	3	1	3	1	1	1	1	0
1953:	2	1	2	1	0	0	0	0
1961:	1	0	0	3	0	1	2	2
1969:	0	0	0	4	0	1	1	1
1977:	0	0	0	1	0	0	1	0
1985:	0	0	0	2	1	1	0	1
1993:	0	2	0	0	0	0	0	0
2001:	1	0	1	3	0	0	0	0
2009:	1	1	0	0	0	2	1	1
2017:	0	0	1	2	2	0	2	0
2025:	0	1	1	0	1	0	0	0
2033:	0	1	0	0	0	0	0	1
2041:	1	1	0	0	0	0	0	1
2049:	0	0	2	1	1	0	0	2
2057:	1	1	0	3	0	1	2	0
2065:	2	0	0	1	3	1	0	0
2073:	2	0	1	1	1	0	0	1
2081:	1	1	0	0	1	1	2	0
2089:	3	0	1	0	0	1	1	0

2097: 1 0 0 1 0 1 3 1

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

2529: 2 1 0 1 0 0 0 0

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Channel	-----	-----	-----	-----	-----	-----	-----	-----
2537:	0	1	0	0	0	0	0	1
2545:	0	0	0	0	0	0	2	0
2553:	0	1	0	0	0	2	2	1
2561:	1	0	0	0	0	0	0	0
2569:	1	0	0	0	0	0	3	0
2577:	0	0	0	0	0	0	1	1
2585:	0	0	0	0	0	0	0	0
2593:	0	0	0	0	1	1	0	1
2601:	0	1	0	0	2	1	0	1
2609:	0	2	0	3	11	21	18	6
2617:	2	0	1	0	0	2	0	0
2625:	0	0	0	0	0	0	0	0
2633:	0	1	0	0	0	0	0	0
2641:	0	0	0	0	1	1	0	1
2649:	0	0	0	0	1	0	0	0
2657:	0	0	0	0	0	1	0	0
2665:	0	0	0	0	0	0	1	0
2673:	1	0	1	0	0	0	1	0
2681:	0	0	0	0	1	0	0	0
2689:	0	1	1	0	0	0	0	0
2697:	0	0	0	0	0	0	1	0
2705:	0	1	0	0	0	0	1	0
2713:	0	0	0	0	0	0	1	1
2721:	0	0	2	0	0	0	0	0
2729:	1	0	0	0	0	0	0	3
2737:	0	1	0	0	0	0	1	0
2745:	0	0	0	1	2	0	0	1
2753:	0	0	0	0	0	0	0	0
2761:	0	1	0	1	0	0	0	0
2769:	2	0	0	1	0	0	0	1
2777:	0	0	0	0	0	0	0	0
2785:	0	0	0	0	0	0	1	0
2793:	1	0	1	0	0	0	1	0
2801:	0	0	0	0	0	0	0	0
2809:	0	0	0	0	0	1	0	0
2817:	0	0	1	1	0	1	0	0
2825:	0	0	1	0	0	0	0	1
2833:	1	0	0	0	1	0	0	0
2841:	0	0	0	0	0	0	0	1
2849:	0	0	1	0	0	0	0	1
2857:	0	1	1	0	1	1	0	0
2865:	0	0	1	0	1	0	0	0
2873:	0	0	0	0	0	0	3	0
2881:	0	0	1	1	1	0	0	0
2889:	1	0	0	0	0	0	0	1
2897:	1	1	0	0	1	0	0	1
2905:	0	1	0	0	0	0	0	0
2913:	0	0	1	0	0	0	0	1
2921:	0	0	0	0	0	0	0	0
2929:	0	0	0	1	0	0	0	0
2937:	0	1	0	3	0	0	2	0
2945:	0	0	0	0	0	0	0	0
2953:	0	0	0	0	0	1	0	0

2961: 0 0 0 0 1 0 0 1

Sample Title: CP-5024 00-02

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

3393: 0 0 0 0 0 0 0 0 1

Sample Title: CP-5024 00-02

Channel	-----	-----	-----	-----	-----	-----	-----	-----
3401:	0	1	0	0	0	0	0	0
3409:	0	0	0	0	0	1	0	1
3417:	0	0	0	0	0	1	1	0
3425:	0	0	0	0	0	0	0	1
3433:	0	0	0	0	0	0	0	0
3441:	0	0	0	0	0	0	0	0
3449:	0	1	0	0	0	1	0	0
3457:	1	0	0	0	0	0	0	0
3465:	0	0	0	0	0	1	0	0
3473:	0	0	0	0	0	0	0	0
3481:	0	0	0	0	1	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	0	0	0	0	1	0
3521:	0	0	0	0	0	0	0	0
3529:	0	0	0	0	0	0	0	0
3537:	1	0	2	0	2	0	0	0
3545:	0	0	0	0	0	0	0	0
3553:	0	0	0	0	0	0	0	1
3561:	0	0	0	0	0	0	0	0
3569:	0	0	0	1	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	0	1	0
3609:	0	1	0	0	0	0	0	1
3617:	0	1	0	1	0	0	0	1
3625:	0	0	0	0	0	0	0	0
3633:	1	0	0	0	1	0	0	0
3641:	0	0	0	0	0	0	0	0
3649:	0	1	0	0	0	0	0	0
3657:	1	0	0	0	0	0	0	0
3665:	0	0	0	0	0	0	1	0
3673:	0	0	0	0	0	0	0	0
3681:	0	0	0	0	0	0	0	0
3689:	0	0	0	1	0	0	0	0
3697:	0	0	0	1	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	0	0	0
3737:	0	0	0	0	0	0	0	0
3745:	0	1	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	0	0	0	0	0
3777:	0	1	0	0	0	0	0	0
3785:	0	0	0	0	0	0	1	0
3793:	1	1	0	0	0	0	0	1
3801:	0	0	0	0	0	1	0	0
3809:	0	0	0	0	0	0	0	0
3817:	0	2	0	0	1	0	0	0

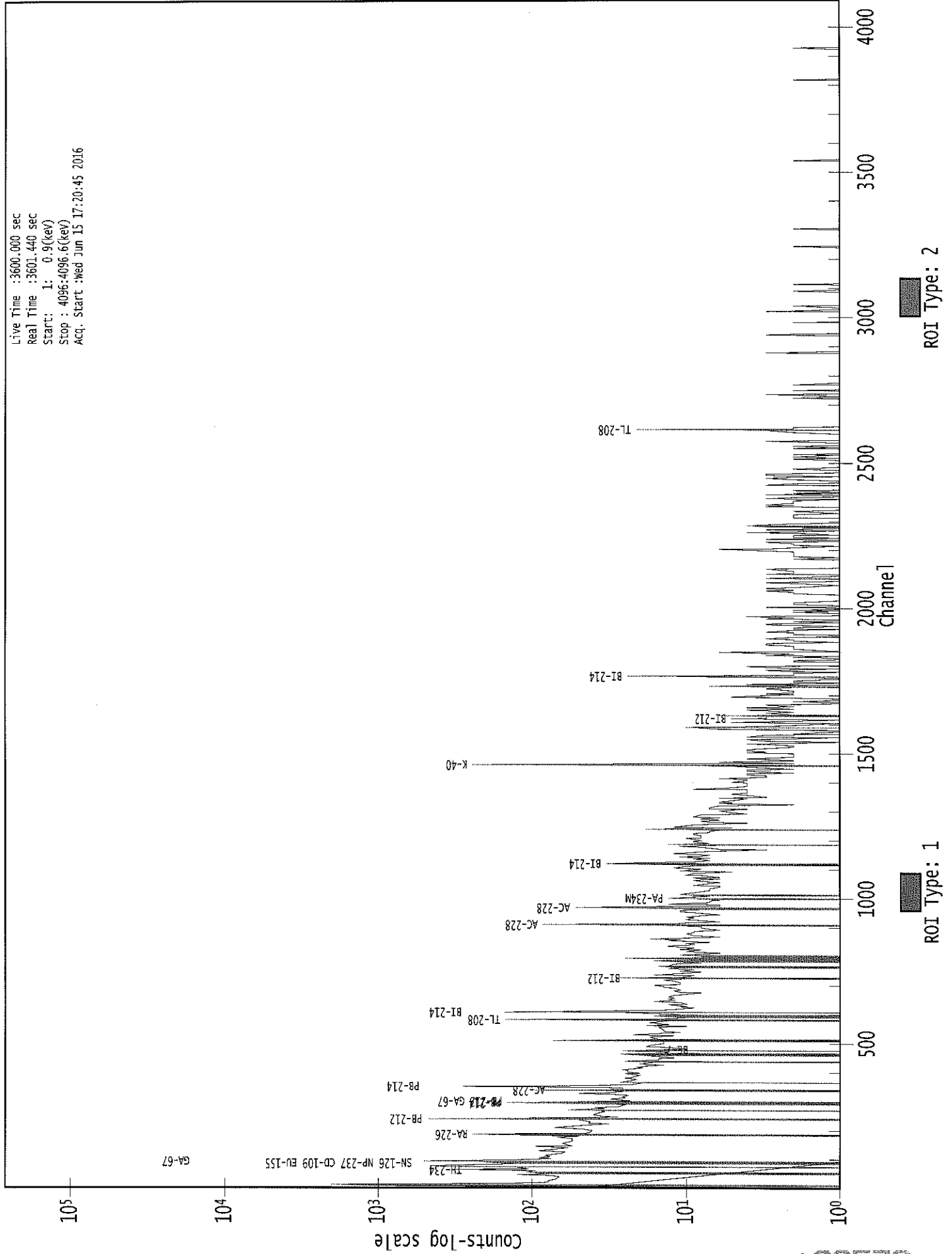
3825: 0 1 0 0 1 0 0 0

Sample Title: CP-5024 00-02

Channel	-----	-----	-----	-----	-----	-----	-----	-----
3833:	0	1	0	0	0	1	0	0
3841:	0	1	0	0	0	1	0	0
3849:	0	0	0	0	0	0	0	0
3857:	0	0	0	0	1	0	1	0
3865:	0	0	0	0	0	0	1	1
3873:	0	0	0	1	0	0	0	0
3881:	0	0	0	0	0	0	0	0
3889:	0	0	1	0	0	0	0	0
3897:	0	0	0	0	0	0	0	0
3905:	0	0	0	0	0	1	0	0
3913:	0	0	0	1	0	0	0	0
3921:	0	1	0	0	0	0	0	2
3929:	0	0	0	0	0	0	0	0
3937:	0	0	0	0	0	0	0	0
3945:	0	0	1	0	0	0	0	0
3953:	0	0	1	1	0	1	0	0
3961:	0	0	0	0	0	0	0	0
3969:	0	0	0	0	1	0	0	0
3977:	0	0	0	0	0	0	0	0
3985:	0	0	0	0	0	1	0	0
3993:	0	0	0	0	0	0	1	0
4001:	0	0	0	0	0	0	1	0
4009:	0	1	0	1	0	0	0	0
4017:	0	1	0	0	0	0	1	0
4025:	0	0	0	0	0	1	0	0
4033:	0	0	0	1	0	0	0	0
4041:	0	0	0	0	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	1
4081:	0	0	0	0	1	0	0	0
4089:	1	0	0	0	0	0	0	0

0000038948.CNF

Live Time : 3600.000 sec
Real Time : 3601.440 sec
Start: 1: 0.9(keV)
Stop : 4096.4096.6(keV)
Acq. Start : Wed Jun 15 17:20:45 2016



*DB
6/15/16*Analysis Report for 1606040-09
CP-5024 02-05

GAMMA SPECTRUM ANALYSIS

Sample Identification : 1606040-09
Sample Description : CP-5024 02-05
Sample Type : SOIL

Sample Size : 3.730E+02 grams
Facility : Countroom

Sample Taken On : 6/2/2016 1:11:09PM
Acquisition Started : 6/15/2016 5:21:14PM

Procedure : GAS-1402 pCi
Operator : Administrator
Detector Name : GE4
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) : 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 : 38949

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

*AG
6/16/16*

Analysis Report for 1606040-09
CP-5024 02-05

PEAK LOCATE REPORT

Peak Locate Performed on : 6/15/2016 6:21:16PM
 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	76.22	75.49	0.0000	0.00
2	164.74	164.04	0.0000	0.00
3	171.45	170.76	0.0000	0.00
4	185.56	184.87	0.0000	0.00
5	209.71	209.04	0.0000	0.00
6	239.30	238.64	0.0000	0.00
7	270.54	269.89	0.0000	0.00
8	295.42	294.78	0.0000	0.00
9	339.15	338.53	0.0000	0.00
10	352.38	351.76	0.0000	0.00
11	510.87	510.33	0.0000	0.00
12	583.47	582.96	0.0000	0.00
13	609.68	609.19	0.0000	0.00
14	617.98	617.50	0.0000	0.00
15	626.65	626.17	0.0000	0.00
16	726.97	726.53	0.0000	0.00
17	755.97	755.55	0.0000	0.00
18	768.45	768.03	0.0000	0.00
19	773.75	773.34	0.0000	0.00
20	780.01	779.60	0.0000	0.00
21	795.80	795.40	0.0000	0.00
22	860.70	860.33	0.0000	0.00
23	911.06	910.71	0.0000	0.00
24	919.05	918.71	0.0000	0.00
25	970.25	969.95	0.0000	0.00
26	1121.24	1121.02	0.0000	0.00
27	1189.91	1189.73	0.0000	0.00
28	1244.30	1244.14	0.0000	0.00
29	1460.61	1460.59	0.0000	0.00
30	1630.59	1630.66	0.0000	0.00
31	1764.30	1764.47	0.0000	0.00
32	2203.04	2203.50	0.0000	0.00
33	2405.24	2405.85	0.0000	0.00
34	2613.52	2614.29	0.0000	0.00
35	2876.02	2877.00	0.0000	0.00

? = Adjacent peak noted
 Errors quoted at 2.000sigma

Analysis Report for 1606040-09
CP-5024 02-05

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 6/15/2016 6:21:16PM

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	76.22	69 -	81	75.49	7.68E+02	134.82	1.76E+03	4.36
2	164.74	161 -	167	164.04	5.00E+01	51.22	4.28E+02	2.41
3	171.45	168 -	175	170.76	6.43E+01	54.63	4.59E+02	2.99
4	185.56	179 -	189	184.87	1.13E+02	74.61	6.83E+02	2.09
5	209.71	207 -	212	209.04	5.29E+01	45.43	3.68E+02	2.21
6	239.30	232 -	245	238.64	4.87E+02	86.93	6.23E+02	2.36
7	270.54	267 -	274	269.89	5.33E+01	43.77	2.83E+02	2.80
8	295.42	291 -	299	294.78	1.03E+02	49.41	3.16E+02	1.71
9	339.15	334 -	343	338.53	5.39E+01	50.10	3.22E+02	2.29
10	352.38	345 -	358	351.76	1.93E+02	61.08	3.29E+02	2.39
11	510.87	504 -	516	510.33	9.59E+01	48.67	2.32E+02	2.53
12	583.47	578 -	588	582.96	1.16E+02	34.15	9.48E+01	3.07
13	609.68	601 -	612	609.19	1.03E+02	41.04	1.67E+02	2.70
M	14	617.98	614 - 628	617.50	3.29E+01	21.82	6.98E+01	6.56
m	15	626.65	614 - 628	626.17	2.14E+01	14.06	1.54E+01	2.41
16	726.97	723 -	731	726.53	2.36E+01	25.63	8.87E+01	2.63
17	755.97	751 -	763	755.55	3.54E+01	29.42	8.72E+01	6.51
M	18	768.45	763 - 776	768.03	3.28E+01	23.32	6.71E+01	4.13
m	19	773.75	763 - 776	773.34	2.02E+01	17.18	2.84E+01	2.88
20	780.01	777 -	782	779.60	1.67E+01	13.71	2.46E+01	1.08
21	795.80	793 -	799	795.40	1.91E+01	20.99	6.57E+01	1.88
22	860.70	858 -	864	860.33	1.45E+01	18.10	4.90E+01	1.50
M	23	911.06	905 - 922	910.71	7.96E+01	26.90	6.47E+01	3.14
m	24	919.05	905 - 922	918.71	1.48E+01	20.77	5.61E+01	3.14
25	970.25	966 -	976	969.95	4.27E+01	29.30	8.66E+01	2.31
26	1121.24	1116 -	1126	1121.02	3.63E+01	25.95	6.74E+01	2.55
27	1189.91	1184 -	1196	1189.73	2.69E+01	21.01	4.02E+01	7.81
28	1244.30	1242 -	1247	1244.14	1.40E+01	10.77	1.20E+01	2.37
29	1460.61	1452 -	1467	1460.59	2.50E+02	41.52	7.41E+01	2.96
30	1630.59	1627 -	1633	1630.66	6.64E+00	8.99	8.73E+00	1.99
31	1764.30	1761 -	1767	1764.47	1.26E+01	9.41	6.75E+00	2.05
32	2203.04	2201 -	2206	2203.50	6.00E+00	4.90	0.00E+00	1.87
33	2405.24	2401 -	2408	2405.85	4.64E+00	6.63	4.71E+00	3.08
34	2613.52	2609 -	2618	2614.29	3.80E+01	12.33	0.00E+00	2.33
35	2876.02	2873 -	2879	2877.00	5.00E+00	4.47	0.00E+00	1.50

Analysis Report for 1606040-09
 CP-5024 02-05

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

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 6/15/2016 6:21:16PM

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	76.22	69 -	81	7.68E+02	134.82	1.76E+03	1.01E+02
2	164.74	161 -	167	5.00E+01	51.22	4.28E+02	4.05E+01
3	171.45	168 -	175	6.43E+01	54.63	4.59E+02	4.29E+01
4	185.56	179 -	189	1.13E+02	74.61	6.83E+02	5.88E+01
5	209.71	207 -	212	5.29E+01	45.43	3.68E+02	3.54E+01
6	239.30	232 -	245	4.87E+02	86.93	6.23E+02	6.16E+01
7	270.54	267 -	274	5.33E+01	43.77	2.83E+02	3.39E+01
8	295.42	291 -	299	1.03E+02	49.41	3.16E+02	3.70E+01
9	339.15	334 -	343	5.39E+01	50.10	3.22E+02	3.94E+01
10	352.38	345 -	358	1.93E+02	61.08	3.29E+02	4.47E+01
11	510.87	504 -	516	9.59E+01	48.67	2.32E+02	3.66E+01
12	583.47	578 -	588	1.16E+02	34.15	9.48E+01	2.18E+01
13	609.68	601 -	612	1.03E+02	41.04	1.67E+02	2.93E+01
M 14	617.98	614 -	628	3.29E+01	21.82	6.98E+01	1.37E+01
m 15	626.65	614 -	628	2.14E+01	14.06	1.54E+01	6.46E+00
16	726.97	723 -	731	2.36E+01	25.63	8.87E+01	1.95E+01
17	755.97	751 -	763	3.54E+01	29.42	8.72E+01	2.21E+01
M 18	768.45	763 -	776	3.28E+01	23.32	6.71E+01	1.35E+01
m 19	773.75	763 -	776	2.02E+01	17.18	2.84E+01	8.76E+00
20	780.01	777 -	782	1.67E+01	13.71	2.46E+01	9.05E+00
21	795.80	793 -	799	1.91E+01	20.99	6.57E+01	1.57E+01
22	860.70	858 -	864	1.45E+01	18.10	4.90E+01	1.35E+01
M 23	911.06	905 -	922	7.96E+01	26.90	6.47E+01	1.32E+01
m 24	919.05	905 -	922	1.48E+01	20.77	5.61E+01	1.23E+01
25	970.25	966 -	976	4.27E+01	29.30	8.66E+01	2.16E+01
26	1121.24	1116 -	1126	3.63E+01	25.95	6.74E+01	1.89E+01
27	1189.91	1184 -	1196	2.69E+01	21.01	4.02E+01	1.50E+01
28	1244.30	1242 -	1247	1.40E+01	10.77	1.20E+01	6.37E+00
29	1460.61	1452 -	1467	2.50E+02	41.52	7.41E+01	2.21E+01
30	1630.59	1627 -	1633	6.64E+00	8.99	8.73E+00	6.05E+00
31	1764.30	1761 -	1767	1.26E+01	9.41	6.75E+00	5.07E+00

Analysis Report for 1606040-09
CP-5024 02-05

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
32	2203.04	2201 -	2206	6.00E+00	4.90	0.00E+00	0.00E+00
33	2405.24	2401 -	2408	4.64E+00	6.63	4.71E+00	4.15E+00
34	2613.52	2609 -	2618	3.80E+01	12.33	0.00E+00	0.00E+00
35	2876.02	2873 -	2879	5.00E+00	4.47	0.00E+00	0.00E+00

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

PEAK WITH NID REPORT

Peak Analysis Performed on : 6/15/2016 6:21:16PM

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	76.22	69 -	81	75.49	7.68E+02	134.82	1.76E+03	.....
2	164.74	161 -	167	164.04	5.00E+01	51.22	4.28E+02	CS-136
3	171.45	168 -	175	170.76	6.43E+01	54.63	4.59E+02	.....
4	185.56	179 -	189	184.87	1.13E+02	74.61	6.83E+02	RA-226
5	209.71	207 -	212	209.04	5.29E+01	45.43	3.68E+02	CM-243 GA-67
6	239.30	232 -	245	238.64	4.87E+02	86.93	6.23E+02	PB-212
7	270.54	267 -	274	269.89	5.33E+01	43.77	2.83E+02	.....
8	295.42	291 -	299	294.78	1.03E+02	49.41	3.16E+02	PB-214
9	339.15	334 -	343	338.53	5.39E+01	50.10	3.22E+02	AC-228
10	352.38	345 -	358	351.76	1.93E+02	61.08	3.29E+02	PB-214
11	510.87	504 -	516	510.33	9.59E+01	48.67	2.32E+02	.....
12	583.47	578 -	588	582.96	1.16E+02	34.15	9.48E+01	TL-208
13	609.68	601 -	612	609.19	1.03E+02	41.04	1.67E+02	BI-214
M 14	617.98	614 -	628	617.50	3.29E+01	21.82	6.98E+01	PM-144
m 15	626.65	614 -	628	626.17	2.14E+01	14.06	1.54E+01	.....
16	726.97	723 -	731	726.53	2.36E+01	25.63	8.87E+01	BI-212
17	755.97	751 -	763	755.55	3.54E+01	29.42	8.72E+01	ZR-95
M 18	768.45	763 -	776	768.03	3.28E+01	23.32	6.71E+01	.....
m 19	773.75	763 -	776	773.34	2.02E+01	17.18	2.84E+01	.....
20	780.01	777 -	782	779.60	1.67E+01	13.71	2.46E+01	.....
21	795.80	793 -	799	795.40	1.91E+01	20.99	6.57E+01	CS-134

: 00577

Analysis Report for 1606040-09
CP-5024 02-05

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	22	860.70	858 -	864	860.33	1.45E+01	18.10	4.90E+01	TL-208
M	23	911.06	905 -	922	910.71	7.96E+01	26.90	6.47E+01	AC-228
m	24	919.05	905 -	922	918.71	1.48E+01	20.77	5.61E+01	.....
	25	970.25	966 -	976	969.95	4.27E+01	29.30	8.66E+01	.....
	26	1121.24	1116 -	1126	1121.02	3.63E+01	25.95	6.74E+01	TA-182 SC-46 BI-214
	27	1189.91	1184 -	1196	1189.73	2.69E+01	21.01	4.02E+01	TA-182
	28	1244.30	1242 -	1247	1244.14	1.40E+01	10.77	1.20E+01	.....
	29	1460.61	1452 -	1467	1460.59	2.50E+02	41.52	7.41E+01	K-40
	30	1630.59	1627 -	1633	1630.66	6.64E+00	8.99	8.73E+00	.....
	31	1764.30	1761 -	1767	1764.47	1.26E+01	9.41	6.75E+00	BI-214
	32	2203.04	2201 -	2206	2203.50	6.00E+00	4.90	0.00E+00	.....
	33	2405.24	2401 -	2408	2405.85	4.64E+00	6.63	4.71E+00	.....
	34	2613.52	2609 -	2618	2614.29	3.80E+01	12.33	0.00E+00	.....
	35	2876.02	2873 -	2879	2877.00	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 : 6/15/2016 6:21:16PM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	76.22	7.68E+02	134.82	2.12E-02	1.69E-03
	2	164.74	5.00E+01	51.22	1.28E-02	1.22E-03
	3	171.45	6.43E+01	54.63	1.24E-02	1.20E-03
	4	185.56	1.13E+02	74.61	1.16E-02	1.15E-03
	5	209.71	5.29E+01	45.43	1.05E-02	1.08E-03
	6	239.30	4.87E+02	86.93	9.39E-03	9.85E-04
	7	270.54	5.33E+01	43.77	8.43E-03	8.88E-04
	8	295.42	1.03E+02	49.41	7.78E-03	8.43E-04
	9	339.15	5.39E+01	50.10	6.84E-03	7.94E-04
	10	352.38	1.93E+02	61.08	6.60E-03	7.80E-04
	11	510.87	9.59E+01	48.67	4.61E-03	5.61E-04
	12	583.47	1.16E+02	34.15	4.04E-03	4.55E-04
	13	609.68	1.03E+02	41.04	3.87E-03	4.16E-04
M	14	617.98	3.29E+01	21.82	3.82E-03	4.04E-04

: 00578

Analysis Report for 1606040-09
CP-5024 02-05

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
m	15	626.65	2.14E+01	14.06	3.77E-03	3.92E-04
	16	726.97	2.36E+01	25.63	3.26E-03	3.04E-04
	17	755.97	3.54E+01	29.42	3.13E-03	2.87E-04
M	18	768.45	3.28E+01	23.32	3.08E-03	2.80E-04
m	19	773.75	2.02E+01	17.18	3.06E-03	2.78E-04
	20	780.01	1.67E+01	13.71	3.04E-03	2.74E-04
	21	795.80	1.91E+01	20.99	2.98E-03	2.65E-04
	22	860.70	1.45E+01	18.10	2.76E-03	2.29E-04
M	23	911.06	7.96E+01	26.90	2.61E-03	2.06E-04
m	24	919.05	1.48E+01	20.77	2.59E-03	2.05E-04
	25	970.25	4.27E+01	29.30	2.46E-03	1.99E-04
	26	1121.24	3.63E+01	25.95	2.14E-03	1.79E-04
	27	1189.91	2.69E+01	21.01	2.03E-03	1.77E-04
	28	1244.30	1.40E+01	10.77	1.94E-03	1.92E-04
	29	1460.61	2.50E+02	41.52	1.68E-03	1.89E-04
	30	1630.59	6.64E+00	8.99	1.53E-03	1.54E-04
	31	1764.30	1.26E+01	9.41	1.43E-03	1.26E-04
	32	2203.04	6.00E+00	4.90	1.21E-03	1.11E-04
	33	2405.24	4.64E+00	6.63	1.13E-03	1.11E-04
	34	2613.52	3.80E+01	12.33	1.07E-03	1.11E-04
	35	2876.02	5.00E+00	4.47	1.01E-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 : 6/15/2016 6:21:16PM

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	76.22	7.68E+02	134.82			7.68E+02	1.35E+02
2	164.74	5.00E+01	51.22			5.00E+01	5.12E+01
3	171.45	6.43E+01	54.63			6.43E+01	5.46E+01
4	185.56	1.13E+02	74.61	2.90E+01	7.24E+00	8.37E+01	7.50E+01
5	209.71	5.29E+01	45.43			5.29E+01	4.54E+01
6	239.30	4.87E+02	86.93	7.10E+00	5.46E+00	4.80E+02	8.71E+01
7	270.54	5.33E+01	43.77			5.33E+01	4.38E+01
8	295.42	1.03E+02	49.41			1.03E+02	4.94E+01
9	339.15	5.39E+01	50.10			5.39E+01	5.01E+01

: 00579

Analysis Report for 1606040-09

CP-5024 02-05

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
10	352.38	1.93E+02	61.08	1.61E+00	4.34E+00	1.91E+02	6.12E+01
11	510.87	9.59E+01	48.67	4.57E+01	5.07E+00	5.02E+01	4.89E+01
12	583.47	1.16E+02	34.15	2.37E+00	3.72E+00	1.13E+02	3.44E+01
13	609.68	1.03E+02	41.04			1.03E+02	4.10E+01
M 14	617.98	3.29E+01	21.82			3.29E+01	2.18E+01
m 15	626.65	2.14E+01	14.06			2.14E+01	1.41E+01
16	726.97	2.36E+01	25.63			2.36E+01	2.56E+01
17	755.97	3.54E+01	29.42			3.54E+01	2.94E+01
M 18	768.45	3.28E+01	23.32			3.28E+01	2.33E+01
m 19	773.75	2.02E+01	17.18			2.02E+01	1.72E+01
20	780.01	1.67E+01	13.71			1.67E+01	1.37E+01
21	795.80	1.91E+01	20.99			1.91E+01	2.10E+01
22	860.70	1.45E+01	18.10			1.45E+01	1.81E+01
M 23	911.06	7.96E+01	26.90			7.96E+01	2.69E+01
m 24	919.05	1.48E+01	20.77			1.48E+01	2.08E+01
25	970.25	4.27E+01	29.30			4.27E+01	2.93E+01
26	1121.24	3.63E+01	25.95			3.63E+01	2.59E+01
27	1189.91	2.69E+01	21.01			2.69E+01	2.10E+01
28	1244.30	1.40E+01	10.77			1.40E+01	1.08E+01
29	1460.61	2.50E+02	41.52	9.79E-01	1.85E+00	2.49E+02	4.16E+01
30	1630.59	6.64E+00	8.99			6.64E+00	8.99E+00
31	1764.30	1.26E+01	9.41			1.26E+01	9.41E+00
32	2203.04	6.00E+00	4.90			6.00E+00	4.90E+00
33	2405.24	4.64E+00	6.63			4.64E+00	6.63E+00
34	2613.52	3.80E+01	12.33			3.80E+01	1.23E+01
35	2876.02	5.00E+00	4.47			5.00E+00	4.47E+00

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

AREA CORRECTION REPORT REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 6/15/2016 6:21:16PM
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	76.22	7.68E+02	134.82			7.68E+02	1.35E+02
2	164.74	5.00E+01	51.22			5.00E+01	5.12E+01

: 00580

Analysis Report for 1606040-09

CP-5024 02-05

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
3	171.45	6.43E+01	54.63			6.43E+01	5.46E+01
4	185.56	1.13E+02	74.61	2.90E+01	7.24E+00	8.37E+01	7.50E+01
5	209.71	5.29E+01	45.43			5.29E+01	4.54E+01
6	239.30	4.87E+02	86.93	7.10E+00	5.46E+00	4.80E+02	8.71E+01
7	270.54	5.33E+01	43.77			5.33E+01	4.38E+01
8	295.42	1.03E+02	49.41			1.03E+02	4.94E+01
9	339.15	5.39E+01	50.10			5.39E+01	5.01E+01
10	352.38	1.93E+02	61.08	1.61E+00	4.34E+00	1.91E+02	6.12E+01
11	510.87	9.59E+01	48.67	4.57E+01	5.07E+00	5.02E+01	4.89E+01
12	583.47	1.16E+02	34.15	2.37E+00	3.72E+00	1.13E+02	3.44E+01
13	609.68	1.03E+02	41.04			1.03E+02	4.10E+01
M	14	617.98	3.29E+01	21.82		3.29E+01	2.18E+01
m	15	626.65	2.14E+01	14.06		2.14E+01	1.41E+01
	16	726.97	2.36E+01	25.63		2.36E+01	2.56E+01
	17	755.97	3.54E+01	29.42		3.54E+01	2.94E+01
M	18	768.45	3.28E+01	23.32		3.28E+01	2.33E+01
m	19	773.75	2.02E+01	17.18		2.02E+01	1.72E+01
	20	780.01	1.67E+01	13.71		1.67E+01	1.37E+01
	21	795.80	1.91E+01	20.99		1.91E+01	2.10E+01
	22	860.70	1.45E+01	18.10		1.45E+01	1.81E+01
M	23	911.06	7.96E+01	26.90		7.96E+01	2.69E+01
m	24	919.05	1.48E+01	20.77		1.48E+01	2.08E+01
	25	970.25	4.27E+01	29.30		4.27E+01	2.93E+01
	26	1121.24	3.63E+01	25.95		3.63E+01	2.59E+01
	27	1189.91	2.69E+01	21.01		2.69E+01	2.10E+01
	28	1244.30	1.40E+01	10.77		1.40E+01	1.08E+01
	29	1460.61	2.50E+02	41.52	9.79E-01	1.85E+00	2.49E+02
	30	1630.59	6.64E+00	8.99		6.64E+00	8.99E+00
	31	1764.30	1.26E+01	9.41		1.26E+01	9.41E+00
	32	2203.04	6.00E+00	4.90		6.00E+00	4.90E+00
	33	2405.24	4.64E+00	6.63		4.64E+00	6.63E+00
	34	2613.52	3.80E+01	12.33		3.80E+01	1.23E+01
	35	2876.02	5.00E+00	4.47		5.00E+00	4.47E+00

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

NUCLIDE IDENTIFICATION REPORT

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

IDENTIFIED NUCLIDES

Analysis Report for 1606040-09
CP-5024 02-05

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.994	1460.81 *	10.67	2.79E+01	5.64E+00
TL-208	0.428	583.14 *	30.22	1.86E+00	6.03E-01
		860.37 *	4.48	2.36E+00	2.95E+00
		2614.66	35.85		
BI-212	0.774	727.17 *	11.80	1.24E+00	1.35E+00
		1620.62	2.75		
PB-212	0.832	238.63 *	44.60	2.31E+00	4.83E-01
		300.09	3.41		
BI-214	0.897	609.31 *	46.30	1.16E+00	4.77E-01
		1120.29 *	15.10	2.26E+00	1.63E+00
		1764.49 *	15.80	1.12E+00	8.41E-01
		2204.22	4.98		
PB-214	0.976	295.21 *	19.19	1.39E+00	6.83E-01
		351.92 *	37.19	1.57E+00	5.35E-01
RA-226	0.934	186.21 *	3.28	4.41E+00	9.00E+00
AC-228	0.564	338.32 *	11.40	1.39E+00	1.30E+00
		911.07 *	27.70	2.21E+00	7.69E-01
		969.11	16.60		

* = 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 : 6/15/2016 6:21:16PM

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	76.22	2.13372E-01	8.78			
2	164.74	1.38805E-02	51.26	Tol.	CS-136	
3	171.45	1.78510E-02	42.50			
5	209.71	1.47082E-02	42.90	Tol.	GA-67 CM-243	
7	270.54	1.48056E-02	41.06			
11	510.87	1.39498E-02	48.72			
M	14	617.98	9.14869E-03	33.12	Tol.	PM-144
m	15	626.65	5.93306E-03	32.92		
	17	755.97	9.83650E-03	41.53		
M	18	768.45	9.10901E-03	35.56	Sum	

Analysis Report for 1606040-09
CP-5024 02-05

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
m	19	773.75	5.61333E-03	42.50	
	20	780.01	4.63602E-03	41.08	
	21	795.80	5.31784E-03	54.83	Sum
m	24	919.05	4.10050E-03	70.36	
	25	970.25	1.18637E-02	34.30	
	27	1189.91	7.47636E-03	39.03	Tol. TA-182
	28	1244.30	3.88889E-03	38.47	
	30	1630.59	1.84343E-03	67.70	
	32	2203.04	1.66667E-03	40.82	
	33	2405.24	1.28968E-03	71.43	
	34	2613.52	1.05556E-02	16.22	
	35	2876.02	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 2.00sigma

NUCLIDE IDENTIFICATION REPORT

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

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.99	1460.81 *	10.67	2.79E+01	5.64E+00
TL-208	0.42	583.14 *	30.22	1.86E+00	6.03E-01
		860.37 *	4.48	2.36E+00	2.95E+00
		2614.66	35.85		
BI-212	0.77	727.17 *	11.80	1.24E+00	1.35E+00
		1620.62	2.75		
PB-212	0.83	238.63 *	44.60	2.31E+00	4.83E-01
		300.09	3.41		
BI-214	0.89	609.31 *	46.30	1.16E+00	4.77E-01
		1120.29 *	15.10	2.26E+00	1.63E+00
		1764.49 *	15.80	1.12E+00	8.41E-01
		2204.22	4.98		
PB-214	0.97	295.21 *	19.19	1.39E+00	6.83E-01
		351.92 *	37.19	1.57E+00	5.35E-01
RA-226	0.93	186.21 *	3.28	4.41E+00	9.00E+00
AC-228	0.56	338.32 *	11.40	1.39E+00	1.30E+00

Analysis Report for 1606040-09
CP-5024 02-05

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
AC-228	0.56	911.07 * 969.11	27.70 16.60	2.21E+00	7.69E-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	0.994	2.79E+01	5.64E+00	
TL-208	0.428	1.88E+00	5.91E-01	
BI-212	0.774	1.24E+00	1.35E+00	
PB-212	0.832	2.31E+00	4.83E-01	
BI-214	0.897	1.22E+00	4.02E-01	
PB-214	0.976	1.50E+00	4.21E-01	
RA-226	0.934	4.41E+00	9.00E+00	
AC-228	0.564	2.00E+00	6.62E-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 1606040-09
CP-5024 02-05

UNIDENTIFIED PEAKS

Peak Locate Performed on : 6/15/2016 6:21:16PM
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	76.22	2.13372E-01	8.78		
2	164.74	1.38805E-02	51.26	Tol.	CS-136
3	171.45	1.78510E-02	42.50		
5	209.71	1.47082E-02	42.90	Tol.	GA-67 CM-243
7	270.54	1.48056E-02	41.06		
11	510.87	1.39498E-02	48.72		
M 14	617.98	9.14869E-03	33.12	Tol.	PM-144
m 15	626.65	5.93306E-03	32.92		
17	755.97	9.83650E-03	41.53		
M 18	768.45	9.10901E-03	35.56	Sum	
m 19	773.75	5.61333E-03	42.50		
20	780.01	4.63602E-03	41.08		
21	795.80	5.31784E-03	54.83	Sum	
m 24	919.05	4.10050E-03	70.36		
25	970.25	1.18637E-02	34.30		
27	1189.91	7.47636E-03	39.03	Tol.	TA-182
28	1244.30	3.88889E-03	38.47		
30	1630.59	1.84343E-03	67.70		
32	2203.04	1.66667E-03	40.82		
33	2405.24	1.28968E-03	71.43		
34	2613.52	1.05556E-02	16.22		
35	2876.02	1.38889E-03	44.72		

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

Analysis Report for 1606040-09
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NUCLIDE MDA REPORT

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

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	BE-7	477.59	10.42	5.17E-02	2.04E+00	2.04E+00
+	NA-22	1274.54	99.94	4.80E-02	2.82E-01	2.82E-01
+	NA-24	1368.53	99.99	-1.26E+05	4.45E+05	4.45E+05
		2754.09	99.86	1.17E+05		5.77E+05
+	AL-26	1808.65	99.76	-4.78E-02	1.72E-01	1.72E-01
+	K-40	1460.81	*	10.67	5.29E+00	5.29E+00
+	@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88	94.40	2.94E-03	1.28E-01	1.28E-01
		78.34	96.00	4.35E-01		1.66E-01
+	SC-46	889.25	99.98	-2.85E-02	2.40E-01	2.40E-01
		1120.51	99.99	2.99E-01		4.18E-01
+	V-48	983.52	99.98	9.11E-03	4.45E-01	4.45E-01
		1312.10	97.50	-1.60E-01		5.04E-01
+	CR-51	320.08	9.83	-3.25E-01	2.20E+00	2.20E+00
+	MN-54	834.83	99.97	1.78E-01	2.74E-01	2.74E-01
+	CO-56	846.75	99.96	1.19E-01	2.82E-01	2.82E-01
		1037.75	14.03	2.52E-01		2.06E+00
		1238.25	67.00	1.62E-02		5.01E-01
		1771.40	15.51	-9.31E-01		1.34E+00
		2598.48	16.90	2.69E-01		1.49E+00
+	CO-57	122.06	85.51	-1.63E-02	1.50E-01	1.50E-01
		136.48	10.60	-8.52E-01		1.29E+00
+	CO-58	810.76	99.40	-5.99E-02	2.53E-01	2.53E-01
+	FE-59	1099.22	56.50	6.41E-02	6.06E-01	6.06E-01
		1291.56	43.20	4.46E-02		7.90E-01
+	CO-60	1173.22	100.00	-1.60E-01	2.77E-01	2.90E-01
		1332.49	100.00	-3.00E-02		2.77E-01
+	ZN-65	1115.52	50.75	1.30E-01	6.62E-01	6.62E-01
+	GA-67	93.31	35.70	7.39E+00	6.60E+00	6.60E+00
		208.95	2.24	5.27E+00		1.28E+02
		300.22	16.00	1.41E-02		1.84E+01
+	SE-75	121.11	16.70	-4.06E-01	2.37E-01	7.95E-01
		136.00	59.20	-1.23E-01		2.37E-01
		264.65	59.80	-1.17E-01		2.81E-01
		279.53	25.20	9.20E-02		6.90E-01
		400.65	11.40	2.40E-01		1.69E+00
+	RB-82	776.52	13.00	1.31E+00	2.66E+00	2.66E+00
+	RB-83	520.41	46.00	1.13E-01	4.82E-01	4.82E-01
		529.64	30.30	-4.29E-01		6.58E-01
		552.65	16.40	-1.20E-01		1.38E+00
+	KR-85	513.99	0.43	8.35E+01	6.36E+01	6.36E+01
+	SR-85	513.99	99.27	4.20E-01	3.19E-01	3.19E-01

Analysis Report for 1606040-09
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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	Y-88	898.02	93.40	-3.35E-02	2.52E-01	2.78E-01
		1836.01	99.38	2.85E-02		2.52E-01
+	NB-93M	16.57	9.43	1.48E+00	6.48E-01	6.48E-01
+	NB-94	702.63	100.00	-5.27E-02	2.17E-01	2.17E-01
		871.10	100.00	1.26E-02		2.23E-01
+	NB-95	765.79	99.81	3.49E-02	3.15E-01	3.15E-01
+	NB-95M	235.69	25.00	2.33E+01	1.21E+01	1.21E+01
+	ZR-95	724.18	43.70	-3.79E-02	5.40E-01	6.86E-01
		756.72	55.30	4.23E-01		5.40E-01
+	MO-99	181.06	6.20	-1.79E+00	4.86E+01	6.45E+01
		739.58	12.80	2.17E+00		4.86E+01
		778.00	4.50	-3.83E+01		1.33E+02
+	RU-103	497.08	89.00	-1.20E-01	2.28E-01	2.28E-01
+	RU-106	621.84	9.80	-2.74E-01	2.01E+00	2.01E+00
+	AG-108M	433.93	89.90	-2.37E-02	1.93E-01	1.93E-01
		614.37	90.40	-1.52E-01		2.84E-01
		722.95	90.50	8.67E-03		2.79E-01
+	CD-109	88.03	3.72	7.42E-01	3.87E+00	3.87E+00
+	AG-110M	657.75	93.14	-5.70E-02	2.24E-01	2.24E-01
		677.61	10.53	-2.15E-01		2.02E+00
		706.67	16.46	-1.57E-01		1.39E+00
		763.93	21.98	1.76E-01		1.13E+00
		884.67	71.63	-4.03E-02		3.19E-01
		1384.27	23.94	-2.66E-02		9.62E-01
+	CD-113M	263.70	0.02	-2.52E+02	6.64E+02	6.64E+02
+	SN-113	255.12	1.93	2.37E+00	3.10E-01	8.71E+00
		391.69	64.90	1.35E-01		3.10E-01
+	TE123M	159.00	84.10	3.06E-02	1.80E-01	1.80E-01
+	SB-124	602.71	97.87	5.45E-02	2.66E-01	2.66E-01
		645.85	7.26	-3.32E-01		3.36E+00
		722.78	11.10	1.63E-01		2.44E+00
		1691.02	49.00	1.75E-01		4.83E-01
+	I-125	35.49	6.49	-5.36E-02	1.32E+00	1.32E+00
+	SB-125	176.33	6.89	-5.72E-02	6.16E-01	2.01E+00
		427.89	29.33	-6.33E-02		6.16E-01
		463.38	10.35	5.68E-01		1.84E+00
		600.56	17.80	1.32E-01		1.22E+00
		635.90	11.32	1.08E+00		1.96E+00
+	SB-126	414.70	83.30	-1.17E-01	4.48E-01	4.48E-01
		666.33	99.60	1.02E-01		4.72E-01
		695.00	99.60	2.24E-01		4.81E-01
		720.50	53.80	2.45E-01		8.40E-01
+	SN-126	87.57	37.00	7.30E-02	3.80E-01	3.80E-01
+	SB-127	473.00	25.00	-3.94E-01	6.08E+00	7.90E+00
		685.20	35.70	-2.92E-01		6.08E+00
		783.80	14.70	-8.77E-01		1.69E+01
+	I-129	29.78	57.00	6.28E-02	1.27E-01	1.27E-01
		33.60	13.20	2.08E-01		5.57E-01

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	I-129	39.58	7.52	-8.29E-01	1.27E-01	1.01E+00
+	I-131	284.30	6.05	3.24E+00	6.39E-01	8.19E+00
		364.48	81.20	-7.71E-02		6.39E-01
		636.97	7.26	6.05E+00		9.58E+00
		722.89	1.80	2.69E+00		4.03E+01
+	TE-132	49.72	13.10	5.53E+00	3.02E+00	1.19E+01
		228.16	88.00	2.72E-01		3.02E+00
+	BA-133	81.00	33.00	-8.70E-02	4.07E-01	4.47E-01
		302.84	17.80	-1.70E-02		9.29E-01
		356.01	60.00	7.16E-01		4.07E-01
+	I-133	529.87	86.30	-5.19E+03	7.96E+03	7.96E+03
+	XE-133	81.00	38.00	-4.31E-01	2.22E+00	2.22E+00
+	CS-134	563.23	8.38	-5.14E-01	2.66E-01	2.43E+00
		569.32	15.43	2.43E-01		1.34E+00
		604.70	97.60	-3.87E-01		2.66E-01
		795.84	85.40	-5.34E-02		3.15E-01
		801.93	8.73	2.86E-02		2.68E+00
+	CS-135	268.24	16.00	-1.52E-01	1.05E+00	1.05E+00
+	I-135	1131.51	22.50	-4.22E+13	2.76E+14	3.18E+14
		1260.41	28.60	3.12E+13		2.76E+14
		1678.03	9.54	9.75E+13		5.59E+14
+	CS-136	153.22	7.46	2.99E-01	4.22E-01	3.65E+00
		163.89	4.61	3.84E-02		6.07E+00
		176.55	13.56	-5.78E-02		2.03E+00
		273.65	12.66	4.72E-01		2.76E+00
		340.57	48.50	7.51E-01		8.30E-01
		818.50	99.70	-3.83E-02		4.22E-01
		1048.07	79.60	2.06E-01		6.16E-01
		1235.34	19.70	1.89E+00		3.32E+00
+	CS-137	661.65	85.12	5.30E-02	2.63E-01	2.63E-01
+	LA-138	788.74	34.00	-3.20E-01	3.47E-01	6.68E-01
		1435.80	66.00	3.43E-02		3.47E-01
+	CE-139	165.85	80.35	-7.86E-02	1.84E-01	1.84E-01
+	BA-140	162.64	6.70	-3.13E-01	1.56E+00	4.30E+00
		304.84	4.50	-1.25E-01		7.25E+00
		423.70	3.20	3.94E-01		1.15E+01
		437.55	2.00	-6.65E+00		1.78E+01
		537.32	25.00	-3.83E-01		1.56E+00
+	LA-140	328.77	20.50	3.02E-01	4.81E-01	1.77E+00
		487.03	45.50	-1.12E-01		7.74E-01
		815.85	23.50	-5.10E-01		1.80E+00
		1596.49	95.49	6.08E-02		4.81E-01
+	CE-141	145.44	48.40	1.92E-01	3.82E-01	3.82E-01
+	CE-143	57.36	11.80	-7.10E+02	3.61E+02	6.66E+02
		293.26	42.00	-3.41E+00		3.61E+02
		664.55	5.20	1.09E+03		3.44E+03
+	CE-144	133.54	10.80	3.49E-02	1.26E+00	1.26E+00
+	PM-144	476.78	42.00	-1.23E-01	2.14E-01	4.31E-01
		618.01	98.60	6.95E-02		2.14E-01

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	PM-144	696.49	99.49	1.17E-01	2.14E-01	2.39E-01
+	PM-145	36.85	21.70	-2.33E-02	1.88E-01	3.42E-01
		37.36	39.70	-4.66E-02		1.88E-01
		42.30	15.10	-2.54E-01		5.35E-01
		72.40	2.31	6.69E+00		6.45E+00
+	PM-146	453.90	39.94	2.70E-01	4.79E-01	4.79E-01
		735.90	14.01	2.95E-01		1.55E+00
		747.13	13.10	2.11E-01		1.72E+00
+	ND-147	91.11	28.90	2.54E+00	1.20E+00	1.20E+00
		531.02	13.10	-1.82E+00		3.20E+00
+	PM-149	285.90	3.10	1.64E+02	3.20E+02	3.20E+02
+	EU-152	121.78	20.50	-6.58E-02	6.04E-01	6.04E-01
		244.69	5.40	-9.42E-01		3.37E+00
		344.27	19.13	-3.11E+00		8.68E-01
		778.89	9.20	-6.77E-01		2.34E+00
		964.01	10.40	-1.10E-01		2.92E+00
		1085.78	7.22	-1.09E+00		3.29E+00
		1112.02	9.60	2.45E-01		3.02E+00
		1407.95	14.94	5.55E-01		1.74E+00
+	GD-153	97.43	31.30	-1.86E-01	4.15E-01	4.15E-01
		103.18	22.20	5.51E-02		5.46E-01
+	EU-154	123.07	40.50	-8.48E-02	3.10E-01	3.10E-01
		723.30	19.70	3.99E-02		1.29E+00
		873.19	11.50	-6.45E-02		1.95E+00
		996.32	10.30	-4.66E-01		2.16E+00
		1004.76	17.90	-1.41E-01		1.51E+00
		1274.45	35.50	1.34E-01		7.90E-01
+	EU-155	86.50	30.90	-1.88E-02	4.49E-01	4.49E-01
		105.30	20.70	-1.33E-01		5.55E-01
+	EU-156	811.77	10.40	-6.62E-01	3.84E+00	3.84E+00
		1153.47	7.20	2.22E+00		8.79E+00
		1230.71	8.90	1.90E+00		6.52E+00
+	HO-166M	184.41	72.60	2.27E-01	2.26E-01	2.26E-01
		280.45	29.60	2.01E-01		5.56E-01
		410.94	11.10	6.74E-01		1.72E+00
		711.69	54.10	-2.24E-02		3.95E-01
+	TM-171	66.72	0.14	3.07E+01	8.70E+01	8.70E+01
+	HF-172	81.75	4.52	-8.34E-01	1.18E+00	3.10E+00
		125.81	11.30	7.75E-01		1.18E+00
+	LU-172	181.53	20.60	-1.02E-01	1.49E+00	2.87E+00
		810.06	16.63	-1.23E+00		5.20E+00
		912.12	15.25	1.14E+01		9.99E+00
		1093.66	62.50	-6.37E-01		1.49E+00
+	LU-173	100.72	5.24	-3.62E+00	8.13E-01	2.20E+00
		272.11	21.20	1.04E-01		8.13E-01
+	HF-175	343.40	84.00	-1.81E-01	2.45E-01	2.45E-01
+	LU-176	88.34	13.30	1.68E+00	1.65E-01	1.10E+00
		201.83	86.00	-9.16E-02		1.81E-01
		306.78	94.00	4.56E-03		1.65E-01

Analysis Report for 1606040-09
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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	TA-182	67.75	41.20	7.30E-03	3.17E-01	3.17E-01
		1121.30	34.90	8.94E-01		1.17E+00
		1189.05	16.23	7.38E-01		2.03E+00
		1221.41	26.98	-4.57E-01		1.13E+00
		1231.02	11.44	8.79E-01		3.01E+00
+	IR-192	308.46	29.68	4.38E-02	4.48E-01	5.79E-01
		468.07	48.10	5.04E-02		4.48E-01
+	HG-203	279.19	77.30	3.38E-02	2.53E-01	2.53E-01
+	BI-207	569.67	97.72	3.80E-02	2.10E-01	2.10E-01
		1063.62	74.90	-1.26E-01		3.52E-01
+	TL-208	583.14	* 30.22	1.86E+00	7.75E-01	7.75E-01
		860.37	* 4.48	2.36E+00		4.84E+00
		2614.66	35.85	0.00E+00		1.64E+00
+	BI-210M	262.00	45.00	3.87E-02	3.51E-01	3.51E-01
		300.00	23.00	1.25E-02		8.70E-01
+	PB-210	46.50	4.25	7.21E-01	2.08E+00	2.08E+00
+	PB-211	404.84	2.90	1.84E+00	6.39E+00	6.39E+00
		831.96	2.90	2.83E-01		8.25E+00
+	BI-212	727.17	* 11.80	1.24E+00	2.19E+00	2.19E+00
		1620.62	2.75	1.08E+00		8.95E+00
+	PB-212	238.63	* 44.60	2.31E+00	6.08E-01	6.08E-01
		300.09	3.41	8.40E-02		5.87E+00
+	BI-214	609.31	* 46.30	1.16E+00	6.89E-01	6.89E-01
		1120.29	* 15.10	2.26E+00		2.52E+00
		1764.49	* 15.80	1.12E+00		1.14E+00
		2204.22	4.98	-8.37E-01		4.72E+00
+	PB-214	295.21	* 19.19	1.39E+00	7.59E-01	1.04E+00
		351.92	* 37.19	1.57E+00		7.59E-01
+	RN-219	401.80	6.50	-1.37E+00	2.69E+00	2.69E+00
+	RA-223	323.87	3.88	-2.04E-01	4.32E+00	4.32E+00
+	RA-224	240.98	3.95	2.52E+01	6.72E+00	6.72E+00
+	RA-225	40.00	31.00	-3.74E-01	4.56E-01	4.56E-01
+	RA-226	186.21	* 3.28	4.41E+00	6.45E+00	6.45E+00
+	TH-227	50.10	8.40	5.22E-01	1.12E+00	1.12E+00
		236.00	11.50	4.03E+00		2.09E+00
		256.20	6.30	3.61E-01		2.50E+00
+	AC-228	338.32	* 11.40	1.39E+00	1.70E+00	2.10E+00
		911.07	* 27.70	2.21E+00		1.70E+00
		969.11	16.60	2.02E+00		2.21E+00
+	TH-230	48.44	16.90	2.07E-01	5.45E-01	5.45E-01
		62.85	4.60	1.67E+00		2.49E+00
		67.67	0.37	7.50E-01		3.25E+01
+	PA-231	283.67	1.60	-7.19E-01	7.17E+00	9.85E+00
		302.67	2.30	-1.31E-01		7.17E+00
+	TH-231	25.64	14.70	-3.90E-01	4.65E-01	4.65E-01
		84.21	6.40	2.02E-01		2.00E+00
+	PA-233	311.98	38.60	-1.60E-01	5.39E-01	5.39E-01
+	PA-234	131.20	20.40	8.75E-02	6.47E-01	6.47E-01

Analysis Report for 1606040-09
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Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
PA-234	733.99	8.80	7.76E-01	6.47E-01	2.48E+00
	946.00	12.00	9.56E-01		1.96E+00
+ PA-234M	1001.03	0.92	4.46E-01	2.84E+01	2.84E+01
+ TH-234	63.29	3.80	2.45E+00	3.06E+00	3.06E+00
+ U-235	143.76	10.50	1.10E+00	1.35E+00	1.35E+00
	163.35	4.70	1.87E-02		2.96E+00
	205.31	4.70	-1.22E+00		3.53E+00
+ NP-237	86.50	12.60	-4.59E-02	1.10E+00	1.10E+00
+ NP-239	106.10	22.70	-5.89E+00	2.46E+01	2.46E+01
	228.18	10.70	1.06E+01		7.16E+01
	277.60	14.10	-1.31E+01		5.49E+01
+ AM-241	59.54	35.90	-2.20E-02	3.00E-01	3.00E-01
+ AM-243	74.67	66.00	9.78E-01	2.48E-01	2.48E-01
+ CM-243	209.75	3.29	2.69E+00	1.14E+00	5.19E+00
	228.14	10.60	1.36E-01		1.51E+00
	277.60	14.00	-2.73E-01		1.14E+00

- + = Nuclide identified during the nuclide identification
 * = Energy line found in the spectrum
 > = MDA value not calculated
 @ = Half-life too short to be able to perform the decay correction
 ? = CAUTION: MDA value is inconsistent with Currie MDA at 95% confidence level

NUCLIDE MDA REPORT

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

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
BE-7	477.59	10.42	2.04E+00	2.04E+00	5.17E-02	9.56E-01
NA-22	1274.54	99.94	2.82E-01	2.82E-01	4.80E-02	1.27E-01
NA-24	1368.53	99.99	4.45E+05	4.45E+05	-1.26E+05	1.88E+05
	2754.09	99.86	5.77E+05		1.17E+05	2.29E+05
AL-26	1808.65	99.76	1.72E-01	1.72E-01	-4.78E-02	6.68E-02
+ K-40	1460.81	* 10.67	5.29E+00	5.29E+00	2.79E+01	2.49E+00

Analysis Report for 1606040-09

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26	1.00E+20
TI-44	67.88	94.40	1.28E-01	1.28E-01	2.94E-03	6.26E-02
	78.34	96.00	1.66E-01		4.35E-01	8.19E-02
SC-46	889.25	99.98	2.40E-01	2.40E-01	-2.85E-02	1.09E-01
	1120.51	99.99	4.18E-01		2.99E-01	1.95E-01
V-48	983.52	99.98	4.45E-01	4.45E-01	9.11E-03	2.03E-01
	1312.10	97.50	5.04E-01		-1.60E-01	2.25E-01
CR-51	320.08	9.83	2.20E+00	2.20E+00	-3.25E-01	1.05E+00
MN-54	834.83	99.97	2.74E-01	2.74E-01	1.78E-01	1.27E-01
CO-56	846.75	99.96	2.82E-01	2.82E-01	1.19E-01	1.30E-01
	1037.75	14.03	2.06E+00		2.52E-01	9.34E-01
	1238.25	67.00	5.01E-01		1.62E-02	2.27E-01
	1771.40	15.51	1.34E+00		-9.31E-01	5.30E-01
	2598.48	16.90	1.49E+00		2.69E-01	5.78E-01
CO-57	122.06	85.51	1.50E-01	1.50E-01	-1.63E-02	7.29E-02
	136.48	10.60	1.29E+00		-8.52E-01	6.25E-01
CO-58	810.76	99.40	2.53E-01	2.53E-01	-5.99E-02	1.16E-01
FE-59	1099.22	56.50	6.06E-01	6.06E-01	6.41E-02	2.76E-01
	1291.56	43.20	7.90E-01		4.46E-02	3.54E-01
CO-60	1173.22	100.00	2.90E-01	2.77E-01	-1.60E-01	1.32E-01
	1332.49	100.00	2.77E-01		-3.00E-02	1.23E-01
ZN-65	1115.52	50.75	6.62E-01	6.62E-01	1.30E-01	3.05E-01
GA-67	93.31	35.70	6.60E+00	6.60E+00	7.39E+00	3.23E+00
	208.95	2.24	1.28E+02		5.27E+00	6.20E+01
	300.22	16.00	1.84E+01		1.41E-02	8.83E+00
SE-75	121.11	16.70	7.95E-01	2.37E-01	-4.06E-01	3.86E-01
	136.00	59.20	2.37E-01		-1.23E-01	1.15E-01
	264.65	59.80	2.81E-01		-1.17E-01	1.35E-01
	279.53	25.20	6.90E-01		9.20E-02	3.31E-01
	400.65	11.40	1.69E+00		2.40E-01	8.03E-01
RB-82	776.52	13.00	2.66E+00	2.66E+00	1.31E+00	1.23E+00
RB-83	520.41	46.00	4.82E-01	4.82E-01	1.13E-01	2.26E-01
	529.64	30.30	6.58E-01		-4.29E-01	3.07E-01
	552.65	16.40	1.38E+00		-1.20E-01	6.49E-01
KR-85	513.99	0.43	6.36E+01	6.36E+01	8.35E+01	3.04E+01
SR-85	513.99	99.27	3.19E-01	3.19E-01	4.20E-01	1.53E-01
Y-88	898.02	93.40	2.78E-01	2.52E-01	-3.35E-02	1.27E-01
	1836.01	99.38	2.52E-01		2.85E-02	1.05E-01
NB-93M	16.57	9.43	6.48E-01	6.48E-01	1.48E+00	3.14E-01
NB-94	702.63	100.00	2.17E-01	2.17E-01	-5.27E-02	1.00E-01
	871.10	100.00	2.23E-01		1.26E-02	1.02E-01
NB-95	765.79	99.81	3.15E-01	3.15E-01	3.49E-02	1.46E-01
NB-95M	235.69	25.00	1.21E+01	1.21E+01	2.33E+01	5.91E+00
ZR-95	724.18	43.70	6.86E-01	5.40E-01	-3.79E-02	3.21E-01
	756.72	55.30	5.40E-01		4.23E-01	2.52E-01
MO-99	181.06	6.20	6.45E+01	4.86E+01	-1.79E+00	3.12E+01
	739.58	12.80	4.86E+01		2.17E+00	2.25E+01
	778.00	4.50	1.33E+02		-3.83E+01	6.08E+01
RU-103	497.08	89.00	2.28E-01	2.28E-01	-1.20E-01	1.06E-01
RU-106	621.84	9.80	2.01E+00	2.01E+00	-2.74E-01	9.30E-01
AG-108M	433.93	89.90	1.93E-01	1.93E-01	-2.37E-02	9.09E-02
	614.37	90.40	2.84E-01		-1.52E-01	1.34E-01
	722.95	90.50	2.79E-01		8.67E-03	1.30E-01

Analysis Report for 1606040-09

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
CD-109	88.03	3.72	3.87E+00	3.87E+00	7.42E-01	1.89E+00
AG-110M	657.75	93.14	2.24E-01	2.24E-01	-5.70E-02	1.04E-01
	677.61	10.53	2.02E+00		-2.15E-01	9.35E-01
	706.67	16.46	1.39E+00		-1.57E-01	6.42E-01
	763.93	21.98	1.13E+00		1.76E-01	5.24E-01
	884.67	71.63	3.19E-01		-4.03E-02	1.45E-01
	1384.27	23.94	9.62E-01		-2.66E-02	4.14E-01
CD-113M	263.70	0.02	6.64E+02	6.64E+02	-2.52E+02	3.18E+02
SN-113	255.12	1.93	8.71E+00	3.10E-01	2.37E+00	4.18E+00
	391.69	64.90	3.10E-01		1.35E-01	1.47E-01
TE123M	159.00	84.10	1.80E-01	1.80E-01	3.06E-02	8.72E-02
SB-124	602.71	97.87	2.66E-01	2.66E-01	5.45E-02	1.25E-01
	645.85	7.26	3.36E+00		-3.32E-01	1.56E+00
	722.78	11.10	2.44E+00		1.63E-01	1.13E+00
	1691.02	49.00	4.83E-01		1.75E-01	1.98E-01
I-125	35.49	6.49	1.32E+00	1.32E+00	-5.36E-02	6.41E-01
SB-125	176.33	6.89	2.01E+00	6.16E-01	-5.72E-02	9.73E-01
	427.89	29.33	6.16E-01		-6.33E-02	2.91E-01
	463.38	10.35	1.84E+00		5.68E-01	8.68E-01
	600.56	17.80	1.22E+00		1.32E-01	5.73E-01
	635.90	11.32	1.96E+00		1.08E+00	9.13E-01
SB-126	414.70	83.30	4.48E-01	4.48E-01	-1.17E-01	2.12E-01
	666.33	99.60	4.72E-01		1.02E-01	2.20E-01
	695.00	99.60	4.81E-01		2.24E-01	2.24E-01
	720.50	53.80	8.40E-01		2.45E-01	3.88E-01
SN-126	87.57	37.00	3.80E-01	3.80E-01	7.30E-02	1.86E-01
SB-127	473.00	25.00	7.90E+00	6.08E+00	-3.94E-01	3.71E+00
	685.20	35.70	6.08E+00		-2.92E-01	2.80E+00
	783.80	14.70	1.69E+01		-8.77E-01	7.77E+00
I-129	29.78	57.00	1.27E-01	1.27E-01	6.28E-02	6.17E-02
	33.60	13.20	5.57E-01		2.08E-01	2.71E-01
	39.58	7.52	1.01E+00		-8.29E-01	4.92E-01
I-131	284.30	6.05	8.19E+00	6.39E-01	3.24E+00	3.92E+00
	364.48	81.20	6.39E-01		-7.71E-02	3.03E-01
	636.97	7.26	9.58E+00		6.05E+00	4.47E+00
	722.89	1.80	4.03E+01		2.69E+00	1.87E+01
TE-132	49.72	13.10	1.19E+01	3.02E+00	5.53E+00	5.80E+00
	228.16	88.00	3.02E+00		2.72E-01	1.46E+00
BA-133	81.00	33.00	4.47E-01	4.07E-01	-8.70E-02	2.19E-01
	302.84	17.80	9.29E-01		-1.70E-02	4.44E-01
	356.01	60.00	4.07E-01		7.16E-01	1.97E-01
I-133	529.87	86.30	7.96E+03	7.96E+03	-5.19E+03	3.71E+03
XE-133	81.00	38.00	2.22E+00	2.22E+00	-4.31E-01	1.09E+00
CS-134	563.23	8.38	2.43E+00	2.66E-01	-5.14E-01	1.14E+00
	569.32	15.43	1.34E+00		2.43E-01	6.29E-01
	604.70	97.60	2.66E-01		-3.87E-01	1.26E-01
	795.84	85.40	3.15E-01		-5.34E-02	1.47E-01
	801.93	8.73	2.68E+00		2.86E-02	1.23E+00
CS-135	268.24	16.00	1.05E+00	1.05E+00	-1.52E-01	5.05E-01
I-135	1131.51	22.50	3.18E+14	2.76E+14	-4.22E+13	1.44E+14
	1260.41	28.60	2.76E+14		3.12E+13	1.25E+14
	1678.03	9.54	5.59E+14		9.75E+13	2.29E+14
CS-136	153.22	7.46	3.65E+00	4.22E-01	2.99E-01	1.77E+00

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)	
CS-136	163.89	4.61	6.07E+00	4.22E-01	3.84E-02	2.94E+00	
	176.55	13.56	2.03E+00		-5.78E-02	9.82E-01	
	273.65	12.66	2.76E+00		4.72E-01	1.33E+00	
	340.57	48.50	8.30E-01		7.51E-01	3.98E-01	
	818.50	99.70	4.22E-01		-3.83E-02	1.92E-01	
	1048.07	79.60	6.16E-01		2.06E-01	2.78E-01	
	1235.34	19.70	3.32E+00		1.89E+00	1.52E+00	
CS-137	661.65	85.12	2.63E-01	2.63E-01	5.30E-02	1.22E-01	
LA-138	788.74	34.00	6.68E-01	3.47E-01	-3.20E-01	3.07E-01	
	1435.80	66.00	3.47E-01		3.43E-02	1.50E-01	
CE-139	165.85	80.35	1.84E-01	1.84E-01	-7.86E-02	8.91E-02	
BA-140	162.64	6.70	4.30E+00	1.56E+00	-3.13E-01	2.09E+00	
	304.84	4.50	7.25E+00		-1.25E-01	3.46E+00	
	423.70	3.20	1.15E+01		3.94E-01	5.46E+00	
	437.55	2.00	1.78E+01		-6.65E+00	8.37E+00	
	537.32	25.00	1.56E+00		-3.83E-01	7.30E-01	
LA-140	328.77	20.50	1.77E+00	4.81E-01	3.02E-01	8.49E-01	
	487.03	45.50	7.74E-01		-1.12E-01	3.62E-01	
	815.85	23.50	1.80E+00		-5.10E-01	8.17E-01	
	1596.49	95.49	4.81E-01		6.08E-02	2.03E-01	
CE-141	145.44	48.40	3.82E-01	3.82E-01	1.92E-01	1.86E-01	
CE-143	57.36	11.80	6.66E+02	3.61E+02	-7.10E+02	3.26E+02	
	293.26	42.00	3.61E+02		-3.41E+00	1.74E+02	
	664.55	5.20	3.44E+03		1.09E+03	1.60E+03	
CE-144	133.54	10.80	1.26E+00	1.26E+00	3.49E-02	6.15E-01	
PM-144	476.78	42.00	4.31E-01	2.14E-01	-1.23E-01	2.02E-01	
	618.01	98.60	2.14E-01		6.95E-02	9.95E-02	
	696.49	99.49	2.39E-01		1.17E-01	1.11E-01	
	36.85	21.70	3.42E-01		1.88E-01	-2.33E-02	1.67E-01
PM-145	37.36	39.70	1.88E-01	1.88E-01	-4.66E-02	9.13E-02	
	42.30	15.10	5.35E-01		-2.54E-01	2.61E-01	
	72.40	2.31	6.45E+00		6.69E+00	3.17E+00	
	453.90	39.94	4.79E-01		4.79E-01	2.70E-01	2.26E-01
	735.90	14.01	1.55E+00		2.95E-01	7.16E-01	
ND-147	747.13	13.10	1.72E+00	1.20E+00	2.11E-01	7.93E-01	
	91.11	28.90	1.20E+00		2.54E+00	5.90E-01	
	531.02	13.10	3.20E+00		-1.82E+00	1.49E+00	
PM-149	285.90	3.10	3.20E+02	3.20E+02	1.64E+02	1.53E+02	
EU-152	121.78	20.50	6.04E-01	6.04E-01	-6.58E-02	2.94E-01	
	244.69	5.40	3.37E+00		-9.42E-01	1.63E+00	
	344.27	19.13	8.68E-01		-3.11E+00	4.13E-01	
	778.89	9.20	2.34E+00		-6.77E-01	1.07E+00	
	964.01	10.40	2.92E+00		-1.10E-01	1.35E+00	
	1085.78	7.22	3.29E+00		-1.09E+00	1.47E+00	
	1112.02	9.60	3.02E+00		2.45E-01	1.38E+00	
	1407.95	14.94	1.74E+00		5.55E-01	7.66E-01	
	97.43	31.30	4.15E-01		4.15E-01	-1.86E-01	2.02E-01
	103.18	22.20	5.46E-01		5.51E-02	2.66E-01	
EU-154	123.07	40.50	3.10E-01	3.10E-01	-8.48E-02	1.51E-01	
	723.30	19.70	1.29E+00		3.99E-02	6.01E-01	
	873.19	11.50	1.95E+00		-6.45E-02	8.88E-01	
	996.32	10.30	2.16E+00		-4.66E-01	9.70E-01	
	1004.76	17.90	1.51E+00		-1.41E-01	6.89E-01	

Analysis Report for 1606040-09
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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
EU-154	1274.45	35.50	7.90E-01	3.10E-01	1.34E-01	3.54E-01
EU-155	86.50	30.90	4.49E-01	4.49E-01	-1.88E-02	2.20E-01
	105.30	20.70	5.55E-01		-1.33E-01	2.70E-01
EU-156	811.77	10.40	3.84E+00	3.84E+00	-6.62E-01	1.76E+00
	1153.47	7.20	8.79E+00		2.22E+00	4.07E+00
	1230.71	8.90	6.52E+00		1.90E+00	2.97E+00
HO-166M	184.41	72.60	2.26E-01	2.26E-01	2.27E-01	1.10E-01
	280.45	29.60	5.56E-01		2.01E-01	2.67E-01
	410.94	11.10	1.72E+00		6.74E-01	8.18E-01
	711.69	54.10	3.95E-01		-2.24E-02	1.82E-01
TM-171	66.72	0.14	8.70E+01	8.70E+01	3.07E+01	4.26E+01
HF-172	81.75	4.52	3.10E+00	1.18E+00	-8.34E-01	1.52E+00
	125.81	11.30	1.18E+00		7.75E-01	5.74E-01
LU-172	181.53	20.60	2.87E+00	1.49E+00	-1.02E-01	1.39E+00
	810.06	16.63	5.20E+00		-1.23E+00	2.38E+00
	912.12	15.25	9.99E+00		1.14E+01	4.72E+00
	1093.66	62.50	1.49E+00		-6.37E-01	6.69E-01
LU-173	100.72	5.24	2.20E+00	8.13E-01	-3.62E+00	1.07E+00
	272.11	21.20	8.13E-01		1.04E-01	3.91E-01
HF-175	343.40	84.00	2.45E-01	2.45E-01	-1.81E-01	1.17E-01
LU-176	88.34	13.30	1.10E+00	1.65E-01	1.68E+00	5.40E-01
	201.83	86.00	1.81E-01		-9.16E-02	8.78E-02
	306.78	94.00	1.65E-01		4.56E-03	7.84E-02
TA-182	67.75	41.20	3.17E-01	3.17E-01	7.30E-03	1.55E-01
	1121.30	34.90	1.17E+00		8.94E-01	5.47E-01
	1189.05	16.23	2.03E+00		7.38E-01	9.25E-01
	1221.41	26.98	1.13E+00		-4.57E-01	5.12E-01
	1231.02	11.44	3.01E+00		8.79E-01	1.37E+00
IR-192	308.46	29.68	5.79E-01	4.48E-01	4.38E-02	2.75E-01
	468.07	48.10	4.48E-01		5.04E-02	2.11E-01
HG-203	279.19	77.30	2.53E-01	2.53E-01	3.38E-02	1.21E-01
BI-207	569.67	97.72	2.10E-01	2.10E-01	3.80E-02	9.83E-02
	1063.62	74.90	3.52E-01		-1.26E-01	1.60E-01
+ TL-208	583.14	* 30.22	7.75E-01	7.75E-01	1.86E+00	3.65E-01
	860.37	* 4.48	4.84E+00		2.36E+00	2.20E+00
	2614.66	35.85	1.64E+00		0.00E+00	7.51E-01
BI-210M	262.00	45.00	3.51E-01	3.51E-01	3.87E-02	1.68E-01
	300.00	23.00	8.70E-01		1.25E-02	4.20E-01
PB-210	46.50	4.25	2.08E+00	2.08E+00	7.21E-01	1.02E+00
PB-211	404.84	2.90	6.39E+00	6.39E+00	1.84E+00	3.03E+00
	831.96	2.90	8.25E+00		2.83E-01	3.80E+00
+ BI-212	727.17	* 11.80	2.19E+00	2.19E+00	1.24E+00	1.02E+00
	1620.62	2.75	8.95E+00		1.08E+00	3.83E+00
+ PB-212	238.63	* 44.60	6.08E-01	6.08E-01	2.31E+00	2.97E-01
	300.09	3.41	5.87E+00		8.40E-02	2.83E+00
+ BI-214	609.31	* 46.30	6.89E-01	6.89E-01	1.16E+00	3.29E-01
	1120.29	* 15.10	2.52E+00		2.26E+00	1.18E+00
	1764.49	* 15.80	1.14E+00		1.12E+00	4.50E-01
	2204.22	4.98	4.72E+00		-8.37E-01	1.91E+00
+ PB-214	295.21	* 19.19	1.04E+00	7.59E-01	1.39E+00	5.00E-01
	351.92	* 37.19	7.59E-01		1.57E+00	3.68E-01
RN-219	401.80	6.50	2.69E+00	2.69E+00	-1.37E+00	1.27E+00
RA-223	323.87	3.88	4.32E+00	4.32E+00	-2.04E-01	2.06E+00

Analysis Report for 1606040-09
CP-5024 02-05

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	6.72E+00	6.72E+00	2.52E+01	3.28E+00
RA-225	40.00	31.00	4.56E-01	4.56E-01	-3.74E-01	2.22E-01
+ RA-226	186.21 *	3.28	6.45E+00	6.45E+00	4.41E+00	3.15E+00
TH-227	50.10	8.40	1.12E+00	1.12E+00	5.22E-01	5.48E-01
	236.00	11.50	2.09E+00		4.03E+00	1.02E+00
	256.20	6.30	2.50E+00		3.61E-01	1.20E+00
+ AC-228	338.32 *	11.40	2.10E+00	1.70E+00	1.39E+00	1.02E+00
	911.07 *	27.70	1.70E+00		2.21E+00	8.14E-01
	969.11	16.60	2.21E+00		2.02E+00	1.04E+00
TH-230	48.44	16.90	5.45E-01	5.45E-01	2.07E-01	2.66E-01
	62.85	4.60	2.49E+00		1.67E+00	1.22E+00
	67.67	0.37	3.25E+01		7.50E-01	1.59E+01
PA-231	283.67	1.60	9.85E+00	7.17E+00	-7.19E-01	4.71E+00
	302.67	2.30	7.17E+00		-1.31E-01	3.43E+00
TH-231	25.64	14.70	4.65E-01	4.65E-01	-3.90E-01	2.26E-01
	84.21	6.40	2.00E+00		2.02E-01	9.79E-01
PA-233	311.98	38.60	5.39E-01	5.39E-01	-1.60E-01	2.56E-01
PA-234	131.20	20.40	6.47E-01	6.47E-01	8.75E-02	3.15E-01
	733.99	8.80	2.48E+00		7.76E-01	1.14E+00
	946.00	12.00	1.96E+00		9.56E-01	8.90E-01
PA-234M	1001.03	0.92	2.84E+01	2.84E+01	4.46E-01	1.30E+01
TH-234	63.29	3.80	3.06E+00	3.06E+00	2.45E+00	1.50E+00
U-235	143.76	10.50	1.35E+00	1.35E+00	1.10E+00	6.55E-01
	163.35	4.70	2.96E+00		1.87E-02	1.44E+00
	205.31	4.70	3.53E+00		-1.22E+00	1.71E+00
NP-237	86.50	12.60	1.10E+00	1.10E+00	-4.59E-02	5.37E-01
NP-239	106.10	22.70	2.46E+01	2.46E+01	-5.89E+00	1.20E+01
	228.18	10.70	7.16E+01		1.06E+01	3.46E+01
	277.60	14.10	5.49E+01		-1.31E+01	2.63E+01
AM-241	59.54	35.90	3.00E-01	3.00E-01	-2.20E-02	1.47E-01
AM-243	74.67	66.00	2.48E-01	2.48E-01	9.78E-01	1.22E-01
CM-243	209.75	3.29	5.19E+00	1.14E+00	2.69E+00	2.52E+00
	228.14	10.60	1.51E+00		1.36E-01	7.31E-01
	277.60	14.00	1.14E+00		-2.73E-01	5.46E-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 1606040-09
CP-5024 02-05

DATA REVIEW COMMENTS REPORT

Creation Date

Comment

User

No Data Review Comments Entered.

369: 15 11 13 15 12 14 8 12

Sample Title: CP-5024 02-05

Channel	1	2	3	4	5	6	7	8
377:	16	13	12	8	17	10	14	10
385:	8	13	13	13	13	16	16	19
393:	7	22	8	15	7	15	9	12
401:	12	10	15	17	9	17	7	19
409:	18	12	7	15	15	12	9	10
417:	9	15	12	15	8	13	8	15
425:	10	6	15	15	9	9	11	10
433:	13	10	4	13	10	12	7	9
441:	10	13	15	11	11	10	12	7
449:	12	9	10	16	12	12	12	9
457:	7	7	4	9	9	15	12	12
465:	11	10	11	5	13	11	11	9
473:	1	11	12	11	11	7	8	6
481:	11	9	5	7	12	9	14	5
489:	4	4	6	12	7	3	9	4
497:	7	6	3	7	11	9	12	8
505:	10	14	13	8	28	42	31	17
513:	15	6	11	9	7	9	12	4
521:	6	9	11	15	6	6	9	3
529:	7	12	6	7	7	8	11	6
537:	10	9	7	6	6	5	8	15
545:	8	9	6	6	10	12	13	8
553:	6	9	9	3	12	10	7	7
561:	8	7	9	10	7	6	10	15
569:	8	5	3	10	8	6	7	5
577:	3	4	6	7	15	28	38	35
585:	10	6	10	4	6	7	10	8
593:	9	4	7	5	6	9	11	12
601:	9	9	8	3	8	8	14	31
609:	47	31	18	1	4	9	7	5
617:	8	16	5	4	5	2	4	3
625:	5	14	4	0	2	3	8	7
633:	6	4	7	11	8	3	12	10
641:	9	4	2	9	9	6	6	7
649:	6	5	4	8	4	2	7	5
657:	10	6	2	7	8	6	8	9
665:	7	8	8	6	4	7	7	5
673:	7	2	4	8	5	6	7	5
681:	6	8	5	4	6	2	7	6
689:	3	7	5	3	10	4	5	11
697:	6	7	9	6	3	3	7	6
705:	3	8	7	7	5	7	9	6
713:	5	1	2	4	8	5	8	7
721:	4	4	3	6	7	13	16	12
729:	2	5	4	8	1	3	7	4
737:	7	9	4	4	5	7	3	7
745:	7	5	11	6	5	3	2	8
753:	6	11	6	10	4	9	4	7
761:	3	4	5	3	4	5	9	14
769:	8	5	2	6	12	7	3	2
777:	1	6	2	14	4	2	3	5
785:	6	6	5	3	6	4	5	5
793:	5	11	13	6	6	4	7	2

801: 3 6 6 7 6 4 2 4

Sample Title: CP-5024 02-05

Channel	-----	-----	-----	-----	-----	-----	-----	-----
809:	6	6	4	4	4	6	3	5
817:	5	3	0	2	8	3	6	5
825:	2	3	3	4	2	9	3	4
833:	4	6	6	7	8	9	4	3
841:	5	4	3	4	5	3	6	5
849:	8	10	2	3	5	5	7	9
857:	2	5	5	8	12	3	4	2
865:	5	3	6	3	1	3	6	4
873:	3	6	3	5	4	3	4	5
881:	5	3	3	6	3	3	4	1
889:	4	5	4	5	2	4	6	1
897:	6	7	2	7	4	1	8	7
905:	1	4	6	8	15	21	30	17
913:	5	4	2	3	2	8	8	5
921:	4	1	5	5	5	2	7	6
929:	5	1	4	5	4	2	5	2
937:	1	2	2	2	1	8	0	4
945:	5	5	2	3	3	3	2	3
953:	2	6	1	7	4	6	2	3
961:	6	4	5	9	6	5	1	16
969:	22	14	6	4	8	2	7	1
977:	5	6	4	3	1	6	6	5
985:	1	5	4	6	5	0	3	1
993:	2	2	6	1	4	5	4	1
1001:	3	4	6	7	3	5	5	5
1009:	2	5	8	0	2	5	0	7
1017:	2	7	6	2	5	6	1	0
1025:	2	5	2	3	2	3	4	1
1033:	6	2	6	3	2	4	4	4
1041:	2	2	2	7	1	2	2	4
1049:	3	4	3	3	1	5	1	6
1057:	6	3	3	2	5	2	2	2
1065:	6	7	4	5	3	6	3	1
1073:	6	5	4	1	3	1	6	4
1081:	8	3	5	3	1	4	3	3
1089:	1	2	4	1	2	4	7	4
1097:	0	8	2	4	3	4	3	5
1105:	6	2	2	1	3	4	5	5
1113:	3	7	5	4	2	7	9	12
1121:	14	6	5	5	5	1	3	4
1129:	3	7	3	4	2	3	2	6
1137:	4	2	6	5	3	3	5	6
1145:	4	4	4	7	5	5	6	5
1153:	5	3	8	3	11	4	4	5
1161:	5	4	2	7	2	5	7	5
1169:	5	4	2	6	2	3	5	2
1177:	4	5	7	4	3	4	1	1
1185:	2	3	10	4	4	2	4	2
1193:	5	7	3	0	4	3	1	3
1201:	8	4	3	8	1	5	5	3
1209:	8	7	5	3	4	4	4	8
1217:	6	6	0	3	5	3	2	3
1225:	1	2	6	4	4	3	3	3

1233: 4 3 7 5 3 4 7 1

Sample Title: CP-5024 02-05

Channel	1	2	3	4	5	6	7	8	9
1241:	1	1	4	7	6	1	1	1	1
1249:	2	1	2	3	2	4	6	3	3
1257:	2	4	3	5	4	5	3	2	2
1265:	2	3	2	3	1	2	2	2	2
1273:	7	5	2	3	2	1	3	1	1
1281:	4	2	1	2	5	2	4	3	3
1289:	3	2	2	2	4	2	3	2	2
1297:	2	3	0	5	3	2	3	1	1
1305:	7	3	4	4	2	0	6	0	0
1313:	4	3	1	4	4	1	3	0	0
1321:	0	1	3	0	5	1	2	5	5
1329:	2	0	2	3	4	3	1	3	3
1337:	4	3	2	1	6	1	1	1	1
1345:	0	5	2	3	2	3	1	2	2
1353:	2	4	1	2	3	3	2	1	1
1361:	1	2	1	0	1	2	1	1	1
1369:	0	1	4	0	3	2	1	1	1
1377:	3	4	1	2	1	1	3	1	1
1385:	0	3	1	1	1	0	1	2	2
1393:	2	1	0	0	1	4	1	1	1
1401:	0	3	2	4	2	2	2	6	6
1409:	0	1	0	1	2	1	0	3	3
1417:	1	4	1	3	1	3	0	1	1
1425:	2	0	0	2	0	0	2	2	2
1433:	0	3	0	3	2	0	1	2	2
1441:	0	2	3	3	3	1	0	2	2
1449:	1	0	8	0	5	1	3	3	3
1457:	2	12	47	65	89	44	12	1	1
1465:	2	1	0	1	1	1	3	1	1
1473:	3	1	0	2	1	1	1	2	2
1481:	0	0	1	0	2	0	1	2	2
1489:	1	2	0	2	0	0	0	1	1
1497:	0	0	1	1	2	2	0	0	0
1505:	2	2	0	0	2	0	1	0	0
1513:	0	5	2	1	1	1	1	1	1
1521:	0	0	1	4	2	1	3	1	1
1529:	0	1	0	0	0	1	0	0	0
1537:	0	2	0	2	1	1	2	2	2
1545:	0	1	0	0	1	2	0	0	0
1553:	0	2	0	1	0	0	1	3	3
1561:	2	2	0	1	0	0	2	0	0
1569:	2	1	1	0	1	1	4	1	1
1577:	4	0	2	0	2	0	3	2	2
1585:	0	0	2	3	1	0	1	3	3
1593:	1	1	1	1	0	1	0	3	3
1601:	2	0	1	0	0	1	1	0	0
1609:	0	1	1	1	2	2	0	0	0
1617:	1	2	1	2	2	3	0	0	0
1625:	1	2	1	1	1	4	3	1	1
1633:	0	0	1	0	0	2	1	2	2
1641:	2	1	0	1	2	0	0	0	0
1649:	1	0	1	0	2	0	2	0	0
1657:	1	0	0	0	1	1	1	1	1

1665: 0 0 3 1 0 0 1 0

Sample Title: CP-5024 02-05

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

2097: 0 1 0 0 1 0 3 1

Sample Title: CP-5024 02-05

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

2529: 1 0 0 0 0 0 0 0 0

Sample Title: CP-5024 02-05

Channel									
2537:	0	0	0	0	0	0	0	0	0
2545:	1	0	0	1	1	1	0	0	0
2553:	0	0	0	1	0	0	0	0	0
2561:	0	0	0	0	0	0	0	0	0
2569:	0	0	1	0	0	1	0	0	0
2577:	0	0	0	0	1	0	0	0	0
2585:	0	0	1	1	1	1	0	0	0
2593:	0	0	0	0	1	0	2	0	0
2601:	0	0	1	0	1	0	0	0	0
2609:	0	1	0	5	3	9	13	6	0
2617:	1	0	0	0	1	0	0	0	0
2625:	0	0	0	1	0	0	0	1	0
2633:	0	1	0	0	0	0	0	0	0
2641:	0	0	0	1	0	0	0	0	0
2649:	0	0	1	0	0	1	0	0	0
2657:	0	0	0	0	0	0	0	0	0
2665:	1	0	0	1	1	0	1	0	0
2673:	0	0	2	0	0	0	0	0	0
2681:	0	0	0	1	0	0	0	0	0
2689:	0	1	0	0	1	0	0	0	0
2697:	1	0	0	0	0	1	0	0	0
2705:	0	0	0	0	0	0	0	1	0
2713:	0	0	0	0	1	0	0	0	0
2721:	0	0	0	0	0	0	0	0	0
2729:	1	0	0	0	0	0	0	0	0
2737:	1	2	0	1	2	0	0	0	0
2745:	0	0	0	0	0	1	0	1	0
2753:	1	0	0	1	0	0	1	0	0
2761:	0	0	1	0	0	0	0	0	0
2769:	0	0	0	0	0	0	0	0	0
2777:	0	0	0	1	0	0	0	0	0
2785:	0	1	0	0	0	0	1	0	0
2793:	0	0	0	0	0	0	1	0	0
2801:	0	0	0	0	0	0	1	0	0
2809:	0	0	0	0	0	0	1	0	0
2817:	0	0	1	1	0	0	0	0	0
2825:	0	0	0	0	0	0	1	0	0
2833:	0	0	0	1	1	1	0	0	0
2841:	0	0	0	0	0	0	1	1	0
2849:	0	0	0	0	1	0	0	0	0
2857:	0	0	0	0	0	0	0	0	0
2865:	0	0	0	0	0	0	0	0	0
2873:	0	0	0	1	3	1	0	0	0
2881:	0	0	0	0	0	0	0	0	0
2889:	0	0	0	0	2	0	0	0	0
2897:	0	0	0	0	0	0	0	0	0
2905:	1	0	0	0	0	0	0	0	0
2913:	0	0	0	0	1	0	0	0	0
2921:	1	0	0	0	1	0	0	0	0
2929:	0	0	0	0	0	0	0	0	0
2937:	0	0	0	0	0	0	0	0	0
2945:	0	1	0	0	0	0	0	0	0
2953:	0	0	0	0	0	0	1	0	0

2961: 0 0 0 0 0 0 0 1 0

Sample Title: CP-5024 02-05

Channel	-----	-----	-----	-----	-----	-----	-----	-----
2969:	0	0	0	0	0	0	0	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	1	0	0	0	0	0
3009:	0	0	0	1	0	0	0	0
3017:	0	0	0	0	0	0	2	0
3025:	0	0	0	0	0	0	0	0
3033:	0	0	0	0	0	0	0	0
3041:	0	0	0	0	0	0	0	0
3049:	0	1	0	0	0	0	1	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	1
3081:	1	0	0	2	1	0	0	0
3089:	1	0	0	0	0	0	0	0
3097:	0	1	0	0	0	1	0	0
3105:	0	0	1	0	0	0	0	0
3113:	0	0	0	0	0	0	0	0
3121:	0	0	1	0	0	0	0	0
3129:	0	0	0	1	0	0	0	0
3137:	0	0	0	0	0	0	0	0
3145:	0	0	0	0	0	0	0	0
3153:	1	0	0	0	1	0	0	1
3161:	1	0	0	0	1	0	0	0
3169:	0	0	0	0	0	0	0	0
3177:	0	0	0	0	0	0	0	1
3185:	0	0	0	0	0	0	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	1	0	0
3217:	0	0	0	0	0	0	0	0
3225:	0	0	0	0	1	0	0	0
3233:	0	0	0	0	0	0	0	0
3241:	0	0	0	1	0	0	0	0
3249:	0	0	0	0	0	0	0	0
3257:	0	0	0	0	1	0	0	0
3265:	0	0	0	0	0	0	0	0
3273:	0	0	1	0	0	2	0	0
3281:	0	0	0	0	0	0	0	1
3289:	0	0	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:	0	0	0	0	0	0	0	0
3321:	0	0	0	0	1	0	0	1
3329:	0	0	0	0	0	0	0	1
3337:	0	1	0	0	0	0	0	0
3345:	0	0	0	0	0	0	0	0
3353:	0	0	0	0	1	0	0	0
3361:	0	0	0	0	0	0	0	0
3369:	0	0	1	0	0	0	0	0
3377:	0	0	0	0	0	0	0	1
3385:	0	0	0	0	0	0	0	0

3393: 1 0 0 0 0 0 0 0 0

Sample Title: CP-5024 02-05

Channel									
3401:	0	0	0	0	1	1	0	0	
3409:	0	0	1	0	1	0	0	0	
3417:	0	0	0	0	0	0	0	0	
3425:	0	0	0	0	0	0	1	0	
3433:	0	0	0	0	0	0	0	0	
3441:	0	0	1	0	0	0	0	0	
3449:	0	0	0	1	1	0	0	0	
3457:	0	1	0	0	0	0	0	0	
3465:	0	0	1	0	0	0	0	0	
3473:	0	1	0	0	0	0	0	0	
3481:	1	0	0	0	1	0	1	0	
3489:	0	0	1	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	1	0	0	0	0	0	
3521:	0	0	0	0	0	0	0	0	
3529:	0	0	0	2	0	0	0	0	
3537:	0	0	1	0	0	0	0	0	
3545:	0	0	0	0	0	0	0	0	
3553:	0	0	1	0	0	0	1	0	
3561:	1	0	1	0	0	0	0	0	
3569:	0	0	0	0	0	0	2	0	
3577:	1	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	0	0	0	
3609:	0	0	0	0	0	0	0	1	
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:	1	0	0	0	1	0	0	1	
3649:	1	0	1	0	0	0	0	0	
3657:	0	0	0	1	1	0	0	0	
3665:	0	0	1	0	0	1	0	0	
3673:	0	0	0	0	0	1	0	0	
3681:	0	0	0	1	0	0	0	0	
3689:	0	0	0	1	0	0	1	0	
3697:	1	0	1	0	1	0	1	0	
3705:	0	1	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	1	0	0	0	0	
3737:	0	0	0	0	0	0	0	0	
3745:	0	0	0	0	1	1	0	0	
3753:	0	1	0	0	0	0	0	0	
3761:	0	0	0	0	0	0	1	0	
3769:	0	0	0	0	2	0	0	1	
3777:	0	0	0	0	1	0	0	0	
3785:	0	0	1	0	0	0	0	0	
3793:	0	0	0	0	1	0	0	0	
3801:	0	0	0	0	0	0	1	0	
3809:	1	0	0	0	0	0	0	0	
3817:	0	0	0	0	0	0	0	0	

3825: 1 0 0 1 0 0 0 0

Sample Title: CP-5024 02-05

Channel	1	2	3	4	5	6	7	8
3833:	0	0	0	0	1	0	0	0
3841:	0	0	0	0	0	0	0	0
3849:	0	0	0	0	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	0	0	0	0	0
3881:	0	0	0	1	0	0	0	0
3889:	0	0	0	0	0	0	0	0
3897:	0	0	0	1	0	0	0	0
3905:	1	0	0	0	0	0	0	0
3913:	0	0	0	0	0	1	0	2
3921:	0	0	0	0	0	0	0	0
3929:	2	0	0	0	0	0	0	1
3937:	0	0	0	0	0	0	0	0
3945:	0	0	0	1	0	0	0	0
3953:	0	0	0	0	0	0	1	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	1	0	1	0	0
3993:	0	0	0	0	0	0	0	0
4001:	0	0	0	0	1	1	0	0
4009:	0	1	0	1	0	0	0	0
4017:	0	0	0	0	0	0	0	0
4025:	1	0	0	0	0	0	0	0
4033:	0	0	0	0	0	1	0	0
4041:	0	0	0	0	0	0	0	1
4049:	0	0	0	0	0	0	1	0
4057:	0	0	0	0	0	0	0	0
4065:	0	0	0	0	0	0	0	0
4073:	0	0	0	0	1	0	0	0
4081:	0	0	0	0	0	0	0	0
4089:	0	0	0	1	0	0	0	0

Analysis Report for 1606040-10
CP-5024 05-10

✓
6/16

GAMMA SPECTRUM ANALYSIS

Sample Identification : 1606040-10
Sample Description : CP-5024 05-10
Sample Type : SOIL

Sample Size : 3.287E+02 grams
Facility : Countroom

Sample Taken On : 6/2/2016 1:11:37PM
Acquisition Started : 6/15/2016 6:00:07PM

Procedure : GAS-1402 pCi
Operator : Administrator
Detector Name : GE3
Geometry : GAS-1402
Live Time : 3600.0 seconds
Real Time : 3617.4 seconds

Dead Time : 0.48 %

Peak Locate Threshold : 2.50
Peak Locate Range (in channels) : 1 - 4096
Peak Area Range (in channels) : 10 - 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 : 38950

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
6/16/16

Analysis Report for 1606040-10
CP-5024 05-10

PEAK LOCATE REPORT

Peak Locate Performed on : 6/15/2016 7:00:26PM
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	47.14	47.37	0.0000	0.00
2	63.79	64.01	0.0000	0.00
3	75.78	76.00	0.0000	0.00
4	90.95	91.15	0.0000	0.00
5	128.98	129.16	0.0000	0.00
6	186.45	186.60	0.0000	0.00
7	210.96	211.11	0.0000	0.00
8	239.22	239.35	0.0000	0.00
9	242.51	242.64	0.0000	0.00
10	271.16	271.27	0.0000	0.00
11	295.84	295.94	0.0000	0.00
12	299.08	299.18	0.0000	0.00
13	310.91	311.00	0.0000	0.00
14	328.86	328.94	0.0000	0.00
15	339.25	339.32	0.0000	0.00
16	352.75	352.82	0.0000	0.00
17	464.20	464.21	0.0000	0.00
18	511.08	511.07	0.0000	0.00
19	583.98	583.93	0.0000	0.00
20	610.01	609.95	0.0000	0.00
21	728.15	728.04	0.0000	0.00
22	755.80	755.67	0.0000	0.00
23	795.58	795.43	0.0000	0.00
24	911.79	911.59	0.0000	0.00
25	948.97	948.75	0.0000	0.00
26	970.14	969.92	0.0000	0.00
27	1024.61	1024.36	0.0000	0.00
28	1057.69	1057.43	0.0000	0.00
29	1121.49	1121.21	0.0000	0.00
30	1130.92	1130.63	0.0000	0.00
31	1157.72	1157.42	0.0000	0.00
32	1400.26	1399.86	0.0000	0.00
33	1443.76	1443.35	0.0000	0.00
34	1450.75	1450.33	0.0000	0.00
35	1461.74	1461.32	0.0000	0.00
36	1687.17	1686.67	0.0000	0.00
37	1695.91	1695.40	0.0000	0.00
38	1730.25	1729.73	0.0000	0.00
39	1751.69	1751.17	0.0000	0.00
40	1766.23	1765.70	0.0000	0.00
41	1788.71	1788.17	0.0000	0.00
42	2103.87	2103.23	0.0000	0.00

Analysis Report for 1606040-10
CP-5024 05-10

<i>Peak No.</i>	<i>Energy (keV)</i>	<i>Centroid Channel</i>	<i>Centroid Uncertainty</i>	<i>Peak Significance</i>
43	2191.55	2190.89	0.0000	0.00
44	2253.81	2253.13	0.0000	0.00
45	2615.79	2615.01	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1606040-10
CP-5024 05-10

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 6/15/2016 7:00:26PM

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	44 -	50	47.37	1.37E+02	72.28	8.49E+02	1.43
	2	61 -	67	64.01	1.51E+02	93.00	1.47E+03	1.54
M	3	72 -	97	76.00	3.23E+02	85.16	9.31E+02	1.51
m	4	72 -	97	91.15	1.67E+02	68.44	6.55E+02	1.69
	5	124 -	133	129.16	1.62E+02	84.14	9.17E+02	4.27
	6	183 -	190	186.60	1.59E+02	67.85	6.64E+02	1.74
	7	207 -	215	211.11	8.21E+01	66.14	6.16E+02	4.04
M	8	233 -	246	239.35	7.42E+02	68.61	3.28E+02	2.00
m	9	233 -	246	242.64	1.66E+02	60.85	2.96E+02	2.08
	10	268 -	274	271.27	7.30E+01	44.34	3.04E+02	3.41
M	11	291 -	304	295.94	1.82E+02	43.97	2.56E+02	1.95
m	12	291 -	304	299.18	2.69E+01	44.69	2.54E+02	1.95
	13	309 -	314	311.00	3.34E+01	30.18	1.59E+02	2.02
	14	324 -	334	328.94	6.61E+01	54.32	3.60E+02	3.87
	15	335 -	343	339.32	1.54E+02	51.90	3.20E+02	1.80
	16	348 -	358	352.82	3.48E+02	61.22	3.15E+02	1.86
	17	460 -	468	464.21	4.01E+01	37.45	1.86E+02	1.56
	18	506 -	515	511.07	1.30E+02	42.19	1.80E+02	2.16
	19	580 -	587	583.93	2.02E+02	37.52	1.00E+02	1.60
	20	605 -	613	609.95	1.78E+02	41.67	1.58E+02	1.74
	21	723 -	731	728.04	3.33E+01	32.18	1.37E+02	2.13
	22	753 -	758	755.67	2.64E+01	21.17	6.31E+01	1.52
	23	790 -	800	795.43	4.60E+01	31.76	1.10E+02	2.74
	24	906 -	917	911.59	1.32E+02	38.63	1.22E+02	1.82
	25	945 -	952	948.75	2.58E+01	18.87	3.84E+01	1.44
	26	964 -	977	969.92	6.89E+01	39.91	1.44E+02	2.66
	27	1022 -	1028	1024.36	1.43E+01	14.63	2.94E+01	2.12
	28	1055 -	1059	1057.43	1.36E+01	13.53	2.68E+01	1.70
	29	1117 -	1127	1121.21	5.41E+01	26.81	6.97E+01	2.64
	30	1128 -	1132	1130.63	1.67E+01	15.29	3.67E+01	1.59
	31	1153 -	1162	1157.42	2.82E+01	18.95	3.55E+01	2.47
	32	1397 -	1402	1399.86	8.55E+00	7.87	4.91E+00	2.92
	33	1441 -	1446	1443.35	5.95E+00	8.19	8.10E+00	1.25
	34	1447 -	1454	1450.33	9.00E+00	9.17	8.00E+00	1.31
	35	1455 -	1466	1461.32	4.12E+02	42.90	2.33E+01	2.39
	36	1683 -	1688	1686.67	6.00E+00	4.90	0.00E+00	1.00
	37	1692 -	1698	1695.40	7.91E+00	8.28	6.18E+00	1.00
	38	1726 -	1734	1729.73	1.10E+01	6.63	0.00E+00	3.88
	39	1749 -	1753	1751.17	6.00E+00	4.90	0.00E+00	2.74
	40	1760 -	1772	1765.70	3.49E+01	18.89	2.42E+01	2.45

Analysis Report for 1606040-10
CP-5024 05-10

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
41	1788.71	1784 -	1791	1788.17	9.00E+00	7.75	4.00E+00	1.39
42	2103.87	2100 -	2106	2103.23	1.12E+01	8.02	3.69E+00	3.23
43	2191.55	2186 -	2193	2190.89	9.00E+00	6.00	0.00E+00	1.12
44	2253.81	2249 -	2256	2253.13	8.00E+00	5.66	0.00E+00	2.92
45	2615.79	2609 -	2619	2615.01	6.62E+01	18.67	1.16E+01	2.42

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

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 6/15/2016 7:00:26PM

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	47.14	44 - 50	1.37E+02	72.28	8.49E+02	5.62E+01
	2	63.79	61 - 67	1.51E+02	93.00	1.47E+03	7.37E+01
M	3	75.78	72 - 97	3.23E+02	85.16	9.31E+02	5.02E+01
m	4	90.95	72 - 97	1.67E+02	68.44	6.55E+02	4.21E+01
	5	128.98	124 - 133	1.62E+02	84.14	9.17E+02	6.59E+01
	6	186.45	183 - 190	1.59E+02	67.85	6.64E+02	5.18E+01
	7	210.96	207 - 215	8.21E+01	66.14	6.16E+02	5.23E+01
M	8	239.22	233 - 246	7.42E+02	68.61	3.28E+02	2.98E+01
m	9	242.51	233 - 246	1.66E+02	60.85	2.96E+02	2.83E+01
	10	271.16	268 - 274	7.30E+01	44.34	3.04E+02	3.36E+01
M	11	295.84	291 - 304	1.82E+02	43.97	2.56E+02	2.63E+01
m	12	299.08	291 - 304	2.69E+01	44.69	2.54E+02	2.62E+01
	13	310.91	309 - 314	3.34E+01	30.18	1.59E+02	2.29E+01
	14	328.86	324 - 334	6.61E+01	54.32	3.60E+02	4.26E+01
	15	339.25	335 - 343	1.54E+02	51.90	3.20E+02	3.75E+01
	16	352.75	348 - 358	3.48E+02	61.22	3.15E+02	3.99E+01
	17	464.20	460 - 468	4.01E+01	37.45	1.86E+02	2.90E+01
	18	511.08	506 - 515	1.30E+02	42.19	1.80E+02	2.92E+01
	19	583.98	580 - 587	2.02E+02	37.52	1.00E+02	2.01E+01
	20	610.01	605 - 613	1.78E+02	41.67	1.58E+02	2.63E+01
	21	728.15	723 - 731	3.33E+01	32.18	1.37E+02	2.47E+01
	22	755.80	753 - 758	2.64E+01	21.17	6.31E+01	1.52E+01

Analysis Report for 1606040-10
CP-5024 05-10

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
23	795.58	790 -	800	4.60E+01	31.76	1.10E+02	2.36E+01
24	911.79	906 -	917	1.32E+02	38.63	1.22E+02	2.55E+01
25	948.97	945 -	952	2.58E+01	18.87	3.84E+01	1.31E+01
26	970.14	964 -	977	6.89E+01	39.91	1.44E+02	2.98E+01
27	1024.61	1022 -	1028	1.43E+01	14.63	2.94E+01	1.03E+01
28	1057.69	1055 -	1059	1.36E+01	13.53	2.68E+01	9.32E+00
29	1121.49	1117 -	1127	5.41E+01	26.81	6.97E+01	1.84E+01
30	1130.92	1128 -	1132	1.67E+01	15.29	3.67E+01	1.06E+01
31	1157.72	1153 -	1162	2.82E+01	18.95	3.55E+01	1.29E+01
32	1400.26	1397 -	1402	8.55E+00	7.87	4.91E+00	4.34E+00
33	1443.76	1441 -	1446	5.95E+00	8.19	8.10E+00	5.40E+00
34	1450.75	1447 -	1454	9.00E+00	9.17	8.00E+00	5.70E+00
35	1461.74	1455 -	1466	4.12E+02	42.90	2.33E+01	1.14E+01
36	1687.17	1683 -	1688	6.00E+00	4.90	0.00E+00	0.00E+00
37	1695.91	1692 -	1698	7.91E+00	8.28	6.18E+00	4.99E+00
38	1730.25	1726 -	1734	1.10E+01	6.63	0.00E+00	0.00E+00
39	1751.69	1749 -	1753	6.00E+00	4.90	0.00E+00	0.00E+00
40	1766.23	1760 -	1772	3.49E+01	18.89	2.42E+01	1.21E+01
41	1788.71	1784 -	1791	9.00E+00	7.75	4.00E+00	4.03E+00
42	2103.87	2100 -	2106	1.12E+01	8.02	3.69E+00	3.64E+00
43	2191.55	2186 -	2193	9.00E+00	6.00	0.00E+00	0.00E+00
44	2253.81	2249 -	2256	8.00E+00	5.66	0.00E+00	0.00E+00
45	2615.79	2609 -	2619	6.62E+01	18.67	1.16E+01	7.52E+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 : 6/15/2016 7:00:26PM

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	47.14	44 -	50	47.37	1.37E+02	72.28	8.49E+02	PB-210
2	63.79	61 -	67	64.01	1.51E+02	93.00	1.47E+03	TH-234

Analysis Report for 1606040-10

CP-5024 05-10

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
									TH-230
M	3	75.78	72 -	97	76.00	3.23E+02	85.16	9.31E+02	.....
m	4	90.95	72 -	97	91.15	1.67E+02	68.44	6.55E+02	ND-147
	5	128.98	124 -	133	129.16	1.62E+02	84.14	9.17E+02	.....
	6	186.45	183 -	190	186.60	1.59E+02	67.85	6.64E+02	RA-226
	7	210.96	207 -	215	211.11	8.21E+01	66.14	6.16E+02	.....
M	8	239.22	233 -	246	239.35	7.42E+02	68.61	3.28E+02	PB-212
m	9	242.51	233 -	246	242.64	1.66E+02	60.85	2.96E+02	.....
	10	271.16	268 -	274	271.27	7.30E+01	44.34	3.04E+02	LU-173
M	11	295.84	291 -	304	295.94	1.82E+02	43.97	2.56E+02	PB-214
m	12	299.08	291 -	304	299.18	2.69E+01	44.69	2.54E+02	BI-210M
	13	310.91	309 -	314	311.00	3.34E+01	30.18	1.59E+02	.....
	14	328.86	324 -	334	328.94	6.61E+01	54.32	3.60E+02	LA-140
	15	339.25	335 -	343	339.32	1.54E+02	51.90	3.20E+02	AC-228
	16	352.75	348 -	358	352.82	3.48E+02	61.22	3.15E+02	PB-214
	17	464.20	460 -	468	464.21	4.01E+01	37.45	1.86E+02	SB-125
	18	511.08	506 -	515	511.07	1.30E+02	42.19	1.80E+02	.....
	19	583.98	580 -	587	583.93	2.02E+02	37.52	1.00E+02	TL-208
	20	610.01	605 -	613	609.95	1.78E+02	41.67	1.58E+02	BI-214
	21	728.15	723 -	731	728.04	3.33E+01	32.18	1.37E+02	BI-212
	22	755.80	753 -	758	755.67	2.64E+01	21.17	6.31E+01	ZR-95
	23	795.58	790 -	800	795.43	4.60E+01	31.76	1.10E+02	CS-134
	24	911.79	906 -	917	911.59	1.32E+02	38.63	1.22E+02	LU-172
									AC-228
	25	948.97	945 -	952	948.75	2.58E+01	18.87	3.84E+01	.....
	26	970.14	964 -	977	969.92	6.89E+01	39.91	1.44E+02	.....
	27	1024.61	1022 -	1028	1024.36	1.43E+01	14.63	2.94E+01	.....
	28	1057.69	1055 -	1059	1057.43	1.36E+01	13.53	2.68E+01	.....
	29	1121.49	1117 -	1127	1121.21	5.41E+01	26.81	6.97E+01	TA-182
									SC-46
	30	1130.92	1128 -	1132	1130.63	1.67E+01	15.29	3.67E+01	I-135
	31	1157.72	1153 -	1162	1157.42	2.82E+01	18.95	3.55E+01	.....
	32	1400.26	1397 -	1402	1399.86	8.55E+00	7.87	4.91E+00	.....
	33	1443.76	1441 -	1446	1443.35	5.95E+00	8.19	8.10E+00	.....
	34	1450.75	1447 -	1454	1450.33	9.00E+00	9.17	8.00E+00	.....
	35	1461.74	1455 -	1466	1461.32	4.12E+02	42.90	2.33E+01	K-40
	36	1687.17	1683 -	1688	1686.67	6.00E+00	4.90	0.00E+00	.....
	37	1695.91	1692 -	1698	1695.40	7.91E+00	8.28	6.18E+00	.....
	38	1730.25	1726 -	1734	1729.73	1.10E+01	6.63	0.00E+00	.....
	39	1751.69	1749 -	1753	1751.17	6.00E+00	4.90	0.00E+00	.....
	40	1766.23	1760 -	1772	1765.70	3.49E+01	18.89	2.42E+01	.....
	41	1788.71	1784 -	1791	1788.17	9.00E+00	7.75	4.00E+00	.....
	42	2103.87	2100 -	2106	2103.23	1.12E+01	8.02	3.69E+00	.....
	43	2191.55	2186 -	2193	2190.89	9.00E+00	6.00	0.00E+00	.....
	44	2253.81	2249 -	2256	2253.13	8.00E+00	5.66	0.00E+00	.....
	45	2615.79	2609 -	2619	2615.01	6.62E+01	18.67	1.16E+01	.....

Analysis Report for 1606040-10
CP-5024 05-10

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

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 6/15/2016 7:00:26PM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	47.14	1.37E+02	72.28	1.54E-02	1.58E-03
	2	63.79	1.51E+02	93.00	2.17E-02	1.72E-03
M	3	75.78	3.23E+02	85.16	2.37E-02	2.12E-03
m	4	90.95	1.67E+02	68.44	2.44E-02	2.46E-03
	5	128.98	1.62E+02	84.14	2.25E-02	1.70E-03
	6	186.45	1.59E+02	67.85	1.83E-02	1.42E-03
	7	210.96	8.21E+01	66.14	1.67E-02	1.31E-03
M	8	239.22	7.42E+02	68.61	1.52E-02	1.18E-03
m	9	242.51	1.66E+02	60.85	1.50E-02	1.16E-03
	10	271.16	7.30E+01	44.34	1.37E-02	1.03E-03
M	11	295.84	1.82E+02	43.97	1.28E-02	9.73E-04
m	12	299.08	2.69E+01	44.69	1.27E-02	9.69E-04
	13	310.91	3.34E+01	30.18	1.23E-02	9.52E-04
	14	328.86	6.61E+01	54.32	1.17E-02	9.26E-04
	15	339.25	1.54E+02	51.90	1.14E-02	9.12E-04
	16	352.75	3.48E+02	61.22	1.10E-02	8.92E-04
	17	464.20	4.01E+01	37.45	8.71E-03	7.65E-04
	18	511.08	1.30E+02	42.19	8.01E-03	7.18E-04
	19	583.98	2.02E+02	37.52	7.13E-03	6.45E-04
	20	610.01	1.78E+02	41.67	6.86E-03	6.19E-04
	21	728.15	3.33E+01	32.18	5.88E-03	5.13E-04
	22	755.80	2.64E+01	21.17	5.70E-03	4.91E-04
	23	795.58	4.60E+01	31.76	5.45E-03	4.58E-04
	24	911.79	1.32E+02	38.63	4.85E-03	3.72E-04
	25	948.97	2.58E+01	18.87	4.69E-03	3.65E-04
	26	970.14	6.89E+01	39.91	4.60E-03	3.61E-04
	27	1024.61	1.43E+01	14.63	4.39E-03	3.51E-04
	28	1057.69	1.36E+01	13.53	4.28E-03	3.45E-04
	29	1121.49	5.41E+01	26.81	4.07E-03	3.33E-04
	30	1130.92	1.67E+01	15.29	4.05E-03	3.31E-04
	31	1157.72	2.82E+01	18.95	3.97E-03	3.26E-04
	32	1400.26	8.55E+00	7.87	3.40E-03	2.78E-04
	33	1443.76	5.95E+00	8.19	3.32E-03	2.72E-04
	34	1450.75	9.00E+00	9.17	3.31E-03	2.71E-04

Analysis Report for 1606040-10
CP-5024 05-10

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
35	1461.74	4.12E+02	42.90	3.29E-03	2.69E-04
36	1687.17	6.00E+00	4.90	2.95E-03	2.35E-04
37	1695.91	7.91E+00	8.28	2.94E-03	2.34E-04
38	1730.25	1.10E+01	6.63	2.90E-03	2.29E-04
39	1751.69	6.00E+00	4.90	2.87E-03	2.26E-04
40	1766.23	3.49E+01	18.89	2.86E-03	2.24E-04
41	1788.71	9.00E+00	7.75	2.83E-03	2.20E-04
42	2103.87	1.12E+01	8.02	2.54E-03	2.13E-04
43	2191.55	9.00E+00	6.00	2.47E-03	2.13E-04
44	2253.81	8.00E+00	5.66	2.43E-03	2.13E-04
45	2615.79	6.62E+01	18.67	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 : 6/15/2016 7:00:26PM

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	47.14	1.37E+02	72.28	4.97E+01	7.81E+00	8.76E+01	7.27E+01
	2	63.79	1.51E+02	93.00	4.47E+01	1.66E+01	1.06E+02	9.45E+01
M	3	75.78	3.23E+02	85.16			3.23E+02	8.52E+01
m	4	90.95	1.67E+02	68.44			1.67E+02	6.84E+01
	5	128.98	1.62E+02	84.14			1.62E+02	8.41E+01
	6	186.45	1.59E+02	67.85	3.45E+01	5.92E+00	1.25E+02	6.81E+01
	7	210.96	8.21E+01	66.14			8.21E+01	6.61E+01
M	8	239.22	7.42E+02	68.61	1.33E+01	5.09E+00	7.29E+02	6.88E+01
m	9	242.51	1.66E+02	60.85			1.66E+02	6.09E+01
	10	271.16	7.30E+01	44.34			7.30E+01	4.43E+01
M	11	295.84	1.82E+02	43.97	1.94E+00	4.39E+00	1.80E+02	4.42E+01
m	12	299.08	2.69E+01	44.69			2.69E+01	4.47E+01
	13	310.91	3.34E+01	30.18			3.34E+01	3.02E+01
	14	328.86	6.61E+01	54.32			6.61E+01	5.43E+01
	15	339.25	1.54E+02	51.90			1.54E+02	5.19E+01
	16	352.75	3.48E+02	61.22	4.00E+00	3.58E+00	3.44E+02	6.13E+01
	17	464.20	4.01E+01	37.45			4.01E+01	3.75E+01
	18	511.08	1.30E+02	42.19	6.05E+01	4.93E+00	6.95E+01	4.25E+01
	19	583.98	2.02E+02	37.52	5.50E+00	3.61E+00	1.96E+02	3.77E+01

Analysis Report for 1606040-10

CP-5024 05-10

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
20	610.01	1.78E+02	41.67	5.07E+00	3.83E+00	1.73E+02	4.18E+01
21	728.15	3.33E+01	32.18			3.33E+01	3.22E+01
22	755.80	2.64E+01	21.17			2.64E+01	2.12E+01
23	795.58	4.60E+01	31.76			4.60E+01	3.18E+01
24	911.79	1.32E+02	38.63			1.32E+02	3.86E+01
25	948.97	2.58E+01	18.87			2.58E+01	1.89E+01
26	970.14	6.89E+01	39.91			6.89E+01	3.99E+01
27	1024.61	1.43E+01	14.63			1.43E+01	1.46E+01
28	1057.69	1.36E+01	13.53			1.36E+01	1.35E+01
29	1121.49	5.41E+01	26.81	1.09E+00	2.08E+00	5.30E+01	2.69E+01
30	1130.92	1.67E+01	15.29			1.67E+01	1.53E+01
31	1157.72	2.82E+01	18.95			2.82E+01	1.89E+01
32	1400.26	8.55E+00	7.87			8.55E+00	7.87E+00
33	1443.76	5.95E+00	8.19			5.95E+00	8.19E+00
34	1450.75	9.00E+00	9.17			9.00E+00	9.17E+00
35	1461.74	4.12E+02	42.90	4.33E+00	2.02E+00	4.08E+02	4.29E+01
36	1687.17	6.00E+00	4.90			6.00E+00	4.90E+00
37	1695.91	7.91E+00	8.28			7.91E+00	8.28E+00
38	1730.25	1.10E+01	6.63			1.10E+01	6.63E+00
39	1751.69	6.00E+00	4.90			6.00E+00	4.90E+00
40	1766.23	3.49E+01	18.89			3.49E+01	1.89E+01
41	1788.71	9.00E+00	7.75			9.00E+00	7.75E+00
42	2103.87	1.12E+01	8.02			1.12E+01	8.02E+00
43	2191.55	9.00E+00	6.00			9.00E+00	6.00E+00
44	2253.81	8.00E+00	5.66	0.00E+00	0.00E+00	8.00E+00	5.66E+00
45	2615.79	6.62E+01	18.67	2.52E+00	1.44E+00	6.37E+01	1.87E+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 : 6/15/2016 7:00:26PM

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	47.14	1.37E+02	72.28	4.97E+01	7.81E+00	8.76E+01	7.27E+01
2	63.79	1.51E+02	93.00	4.47E+01	1.66E+01	1.06E+02	9.45E+01

: 00618

Analysis Report for 1606040-10

CP-5024 05-10

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
M	3	75.78	3.23E+02	85.16			3.23E+02	8.52E+01
m	4	90.95	1.67E+02	68.44			1.67E+02	6.84E+01
	5	128.98	1.62E+02	84.14			1.62E+02	8.41E+01
	6	186.45	1.59E+02	67.85	3.45E+01	5.92E+00	1.25E+02	6.81E+01
	7	210.96	8.21E+01	66.14			8.21E+01	6.61E+01
M	8	239.22	7.42E+02	68.61	1.33E+01	5.09E+00	7.29E+02	6.88E+01
m	9	242.51	1.66E+02	60.85			1.66E+02	6.09E+01
	10	271.16	7.30E+01	44.34			7.30E+01	4.43E+01
M	11	295.84	1.82E+02	43.97	1.94E+00	4.39E+00	1.80E+02	4.42E+01
m	12	299.08	2.69E+01	44.69			2.69E+01	4.47E+01
	13	310.91	3.34E+01	30.18			3.34E+01	3.02E+01
	14	328.86	6.61E+01	54.32			6.61E+01	5.43E+01
	15	339.25	1.54E+02	51.90			1.54E+02	5.19E+01
	16	352.75	3.48E+02	61.22	4.00E+00	3.58E+00	3.44E+02	6.13E+01
	17	464.20	4.01E+01	37.45			4.01E+01	3.75E+01
	18	511.08	1.30E+02	42.19	6.05E+01	4.93E+00	6.95E+01	4.25E+01
	19	583.98	2.02E+02	37.52	5.50E+00	3.61E+00	1.96E+02	3.77E+01
	20	610.01	1.78E+02	41.67	5.07E+00	3.83E+00	1.73E+02	4.18E+01
	21	728.15	3.33E+01	32.18			3.33E+01	3.22E+01
	22	755.80	2.64E+01	21.17			2.64E+01	2.12E+01
	23	795.58	4.60E+01	31.76			4.60E+01	3.18E+01
	24	911.79	1.32E+02	38.63			1.32E+02	3.86E+01
	25	948.97	2.58E+01	18.87			2.58E+01	1.89E+01
	26	970.14	6.89E+01	39.91			6.89E+01	3.99E+01
	27	1024.61	1.43E+01	14.63			1.43E+01	1.46E+01
	28	1057.69	1.36E+01	13.53			1.36E+01	1.35E+01
	29	1121.49	5.41E+01	26.81	1.09E+00	2.08E+00	5.30E+01	2.69E+01
	30	1130.92	1.67E+01	15.29			1.67E+01	1.53E+01
	31	1157.72	2.82E+01	18.95			2.82E+01	1.89E+01
	32	1400.26	8.55E+00	7.87			8.55E+00	7.87E+00
	33	1443.76	5.95E+00	8.19			5.95E+00	8.19E+00
	34	1450.75	9.00E+00	9.17			9.00E+00	9.17E+00
	35	1461.74	4.12E+02	42.90	4.33E+00	2.02E+00	4.08E+02	4.29E+01
	36	1687.17	6.00E+00	4.90			6.00E+00	4.90E+00
	37	1695.91	7.91E+00	8.28			7.91E+00	8.28E+00
	38	1730.25	1.10E+01	6.63			1.10E+01	6.63E+00
	39	1751.69	6.00E+00	4.90			6.00E+00	4.90E+00
	40	1766.23	3.49E+01	18.89			3.49E+01	1.89E+01
	41	1788.71	9.00E+00	7.75			9.00E+00	7.75E+00
	42	2103.87	1.12E+01	8.02			1.12E+01	8.02E+00
	43	2191.55	9.00E+00	6.00			9.00E+00	6.00E+00
	44	2253.81	8.00E+00	5.66	0.00E+00	0.00E+00	8.00E+00	5.66E+00
	45	2615.79	6.62E+01	18.67	2.52E+00	1.44E+00	6.37E+01	1.87E+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 1606040-10
CP-5024 05-10

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	0.870	1460.81 *	10.67	2.65E+01	3.58E+00
ND-147	0.667	91.11 *	28.90	1.24E+00	5.25E-01
		531.02	13.10		
LU-173	0.495	100.72	5.24		
		272.11 *	21.20	5.82E-01	3.57E-01
PB-210	0.936	46.50 *	4.25	3.07E+00	2.57E+00
BI-212	0.654	727.17 *	11.80	1.09E+00	1.06E+00
		1620.62	2.75		
PB-212	0.845	238.63 *	44.60	2.46E+00	3.00E-01
		300.09	3.41		
BI-214	0.399	609.31 *	46.30	1.24E+00	3.21E-01
		1120.29	15.10		
		1764.49	15.80		
		2204.22	4.98		
PB-214	0.910	295.21 *	19.19	1.67E+00	4.30E-01
		351.92 *	37.19	1.92E+00	3.75E-01
RA-226	0.991	186.21 *	3.28	4.75E+00	9.08E+00
AC-228	0.512	338.32 *	11.40	2.71E+00	9.37E-01
		911.07 *	27.70	2.25E+00	6.79E-01
		969.11	16.60		
TH-234	0.960	63.29 *	3.80	2.94E+00	2.63E+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 : 6/15/2016 7:00:26PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

Analysis Report for 1606040-10
CP-5024 05-10

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
M	3	75.78	8.96683E-02	13.19	
	5	128.98	4.48656E-02	26.05	
	7	210.96	2.27963E-02	40.30	
m	9	242.51	4.59744E-02	18.38	
m	12	299.08	7.47284E-03	83.06	Tol. BI-210M
	13	310.91	9.27237E-03	45.21	
	14	328.86	1.83616E-02	41.09	Tol. LA-140
	17	464.20	1.11320E-02	46.73	Tol. SB-125
	18	511.08	1.93074E-02	30.56	Sum
	19	583.98	5.45228E-02	9.60	Tol. TL-208
	22	755.80	7.34674E-03	40.01	Tol. ZR-95
	23	795.58	1.27778E-02	34.53	Sum
	25	948.97	7.16667E-03	36.57	Sum
	26	970.14	1.91342E-02	28.97	
	27	1024.61	3.97031E-03	51.17	Sum
	28	1057.69	3.78086E-03	49.69	
	29	1121.49	1.47329E-02	25.35	Tol. TA-182
	30	1130.92	4.62698E-03	45.89	Tol. I-135
	31	1157.72	7.84420E-03	33.55	
	32	1400.26	2.37374E-03	46.07	
	33	1443.76	1.65278E-03	68.78	
	34	1450.75	2.50000E-03	50.92	
	36	1687.17	1.66667E-03	40.82	
	37	1695.91	2.19697E-03	52.32	
	38	1730.25	3.05556E-03	30.15	
	39	1751.69	1.66667E-03	40.82	
	40	1766.23	9.68972E-03	27.08	
	41	1788.71	2.50000E-03	43.03	
	42	2103.87	3.09829E-03	35.93	
	43	2191.55	2.50000E-03	33.33	
	44	2253.81	2.22222E-03	35.36	
	45	2615.79	1.76833E-02	14.71	

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

Analysis Report for 1606040-10
CP-5024 05-10

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.87	1460.81 *		10.67	2.65E+01	3.58E+00
ND-147	0.66	91.11 *		28.90	1.24E+00	5.25E-01
		531.02		13.10		
LU-173	0.49	100.72		5.24		
		272.11 *		21.20	5.82E-01	3.57E-01
PB-210	0.93	46.50 *		4.25	3.07E+00	2.57E+00
BI-212	0.65	727.17 *		11.80	1.09E+00	1.06E+00
		1620.62		2.75		
PB-212	0.84	238.63 *		44.60	2.46E+00	3.00E-01
		300.09		3.41		
BI-214	0.39	609.31 *		46.30	1.24E+00	3.21E-01
		1120.29		15.10		
		1764.49		15.80		
		2204.22		4.98		
PB-214	0.91	295.21 *		19.19	1.67E+00	4.30E-01
		351.92 *		37.19	1.92E+00	3.75E-01
RA-226	0.99	186.21 *		3.28	4.75E+00	9.08E+00
AC-228	0.51	338.32 *		11.40	2.71E+00	9.37E-01
		911.07 *		27.70	2.25E+00	6.79E-01
		969.11		16.60		
TH-234	0.96	63.29 *		3.80	2.94E+00	2.63E+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	0.870	2.65E+01	3.58E+00	
ND-147	0.667	1.24E+00	5.25E-01	
LU-173	0.495	5.82E-01	3.57E-01	
PB-210	0.936	3.07E+00	2.57E+00	
BI-212	0.654	1.09E+00	1.06E+00	
PB-212	0.845	2.46E+00	3.00E-01	

Analysis Report for 1606040-10
 CP-5024 05-10

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
BI-214	0.399	1.24E+00	3.21E-01	
PB-214	0.910	1.81E+00	2.83E-01	
RA-226	0.991	4.75E+00	9.08E+00	
AC-228	0.512	2.41E+00	5.50E-01	
TH-234	0.960	2.94E+00	2.63E+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 1606040-10
CP-5024 05-10

UNIDENTIFIED PEAKS

Peak Locate Performed on : 6/15/2016 7:00:26PM
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	75.78	8.96683E-02	13.19		
	5	128.98	4.48656E-02	26.05		
	7	210.96	2.27963E-02	40.30		
m	9	242.51	4.59744E-02	18.38		
m	12	299.08	7.47284E-03	83.06	Tol.	BI-210M
	13	310.91	9.27237E-03	45.21		
	14	328.86	1.83616E-02	41.09	Tol.	LA-140
	17	464.20	1.11320E-02	46.73	Tol.	SB-125
	18	511.08	1.93074E-02	30.56	Sum	
	19	583.98	5.45228E-02	9.60	Tol.	TL-208
	22	755.80	7.34674E-03	40.01	Tol.	ZR-95
	23	795.58	1.27778E-02	34.53	Sum	
	25	948.97	7.16667E-03	36.57	Sum	
	26	970.14	1.91342E-02	28.97		
	27	1024.61	3.97031E-03	51.17	Sum	
	28	1057.69	3.78086E-03	49.69		
	29	1121.49	1.47329E-02	25.35	Tol.	TA-182
	30	1130.92	4.62698E-03	45.89	Tol.	I-135
	31	1157.72	7.84420E-03	33.55		
	32	1400.26	2.37374E-03	46.07		
	33	1443.76	1.65278E-03	68.78		
	34	1450.75	2.50000E-03	50.92		
	36	1687.17	1.66667E-03	40.82		
	37	1695.91	2.19697E-03	52.32		
	38	1730.25	3.05556E-03	30.15		
	39	1751.69	1.66667E-03	40.82		
	40	1766.23	9.68972E-03	27.08		
	41	1788.71	2.50000E-03	43.03		
	42	2103.87	3.09829E-03	35.93		
	43	2191.55	2.50000E-03	33.33		
	44	2253.81	2.22222E-03	35.36		
	45	2615.79	1.76833E-02	14.71		

Analysis Report for 1606040-10
CP-5024 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 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	-4.47E-02	1.32E+00	1.32E+00
+	NA-22	1274.54	99.94	6.97E-02	1.88E-01	1.88E-01
+	NA-24	1368.53	99.99	-1.40E+05	2.93E+05	3.00E+05
		2754.09	99.86	-3.66E+04		2.93E+05
+	AL-26	1808.65	99.76	-2.63E-02	1.15E-01	1.15E-01
+	K-40	1460.81	*	10.67	2.65E+01	1.73E+00
+	@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88	94.40	-4.36E-03	1.18E-01	1.18E-01
		78.34	96.00	3.17E-01		1.48E-01
+	SC-46	889.25	99.98	6.04E-02	1.78E-01	1.78E-01
		1120.51	99.99	1.83E-01		2.55E-01
+	V-48	983.52	99.98	5.98E-02	2.40E-01	2.40E-01
		1312.10	97.50	-1.68E-03		3.32E-01
+	CR-51	320.08	9.83	-2.12E-02	1.51E+00	1.51E+00
+	MN-54	834.83	99.97	1.26E-02	1.69E-01	1.69E-01
+	CO-56	846.75	99.96	3.86E-02	1.70E-01	1.70E-01
		1037.75	14.03	1.45E-01		1.26E+00
		1238.25	67.00	4.08E-02		3.60E-01
		1771.40	15.51	-9.68E-02		1.09E+00
		2598.48	16.90	-2.03E-01		4.97E-01
+	CO-57	122.06	85.51	1.61E-02	9.18E-02	9.18E-02
		136.48	10.60	6.37E-03		7.93E-01
+	CO-58	810.76	99.40	-9.69E-02	1.70E-01	1.70E-01
+	FE-59	1099.22	56.50	-1.02E-02	3.38E-01	3.38E-01
		1291.56	43.20	-3.26E-01		5.34E-01
+	CO-60	1173.22	100.00	-3.00E-02	1.71E-01	1.92E-01
		1332.49	100.00	6.83E-02		1.71E-01
+	ZN-65	1115.52	50.75	-4.67E-03	3.17E-01	3.17E-01
+	GA-67	93.31	35.70	1.05E+01	5.42E+00	5.42E+00
		208.95	2.24	2.75E+01		8.61E+01
		300.22	16.00	-1.52E+01		1.37E+01
+	SE-75	121.11	16.70	-2.67E-02	1.47E-01	4.84E-01

Analysis Report for 1606040-10
CP-5024 05-10

Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
SE-75	136.00	59.20	-1.12E-03	1.47E-01	1.47E-01
	264.65	59.80	-4.28E-02		1.77E-01
	279.53	25.20	4.71E-01		5.00E-01
	400.65	11.40	4.06E-01		1.12E+00
+ RB-82	776.52	13.00	3.57E-01	1.55E+00	1.55E+00
+ RB-83	520.41	46.00	1.47E-01	3.03E-01	3.03E-01
	529.64	30.30	4.73E-02		4.28E-01
	552.65	16.40	1.39E-02		8.27E-01
+ KR-85	513.99	0.43	4.80E+00	4.18E+01	4.18E+01
+ SR-85	513.99	99.27	2.41E-02	2.10E-01	2.10E-01
+ Y-88	898.02	93.40	-4.81E-02	1.50E-01	1.72E-01
	1836.01	99.38	-6.68E-04		1.50E-01
+ NB-93M	16.57	9.43	1.33E+00	1.40E+02	1.40E+02
+ NB-94	702.63	100.00	-3.00E-02	1.40E-01	1.50E-01
	871.10	100.00	2.03E-02		1.40E-01
+ NB-95	765.79	99.81	5.32E-02	2.06E-01	2.06E-01
+ NB-95M	235.69	25.00	-2.31E+00	8.77E+00	8.77E+00
+ ZR-95	724.18	43.70	4.67E-02	3.27E-01	4.10E-01
	756.72	55.30	-1.88E-02		3.27E-01
+ MO-99	181.06	6.20	8.14E+00	2.95E+01	3.76E+01
	739.58	12.80	-7.59E+00		2.95E+01
	778.00	4.50	-1.93E+01		8.30E+01
+ RU-103	497.08	89.00	-9.00E-02	1.56E-01	1.56E-01
+ RU-106	621.84	9.80	-4.09E-01	1.41E+00	1.41E+00
+ AG-108M	433.93	89.90	1.07E-02	1.26E-01	1.26E-01
	614.37	90.40	-1.56E-03		1.95E-01
	722.95	90.50	1.68E-02		1.56E-01
+ CD-109	88.03	3.72	1.47E+00	3.12E+00	3.12E+00
+ AG-110M	657.75	93.14	-9.77E-03	1.60E-01	1.60E-01
	677.61	10.53	-7.18E-02		1.40E+00
	706.67	16.46	1.82E-01		9.86E-01
	763.93	21.98	-8.57E-01		6.34E-01
	884.67	71.63	-2.33E-02		2.01E-01
	1384.27	23.94	1.17E-01		6.47E-01
+ CD-113M	263.70	0.02	-9.53E+01	4.28E+02	4.28E+02
+ SN-113	255.12	1.93	6.34E-01	1.95E-01	5.90E+00
	391.69	64.90	2.59E-02		1.95E-01
+ TE123M	159.00	84.10	-9.30E-03	1.10E-01	1.10E-01
+ SB-124	602.71	97.87	-2.09E-02	1.55E-01	1.55E-01
	645.85	7.26	-4.49E-01		2.03E+00
	722.78	11.10	1.60E-01		1.48E+00
	1691.02	49.00	-1.23E-02		4.03E-01
+ I-125	35.49	6.49	-2.04E-02	4.06E+00	4.06E+00
+ SB-125	176.33	6.89	-3.19E-01	4.22E-01	1.22E+00
	427.89	29.33	1.53E-01		4.22E-01
	463.38	10.35	1.10E+00		1.36E+00
	600.56	17.80	-8.00E-02		7.48E-01
	635.90	11.32	1.38E-01		1.27E+00

Analysis Report for 1606040-10
CP-5024 05-10

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	SB-126	414.70	83.30	-4.83E-02	2.98E-01	2.98E-01
		666.33	99.60	-7.93E-02		2.99E-01
		695.00	99.60	5.69E-02		3.15E-01
		720.50	53.80	5.11E-02		5.80E-01
+	SN-126	87.57	37.00	1.45E-01	3.08E-01	3.08E-01
+	SB-127	473.00	25.00	6.36E-01	4.29E+00	4.77E+00
		685.20	35.70	-9.95E-01		4.29E+00
		783.80	14.70	2.79E+00		1.11E+01
+	I-129	29.78	57.00	1.53E-01	7.01E-01	7.01E-01
		33.60	13.20	-1.59E+00		1.91E+00
		39.58	7.52	5.54E-01		2.42E+00
+	I-131	284.30	6.05	-1.97E+00	4.26E-01	5.34E+00
		364.48	81.20	-1.30E-02		4.26E-01
		636.97	7.26	3.74E-01		6.11E+00
		722.89	1.80	2.64E+00		2.45E+01
+	TE-132	49.72	13.10	-3.03E+00	2.00E+00	1.58E+01
		228.16	88.00	1.35E-01		2.00E+00
+	BA-133	81.00	33.00	-1.33E+00	3.07E-01	3.08E-01
		302.84	17.80	1.92E-01		6.71E-01
		356.01	60.00	5.64E-01		3.07E-01
+	I-133	529.87	86.30	5.84E+02	5.29E+03	5.29E+03
+	XE-133	81.00	38.00	-6.62E+00	1.53E+00	1.53E+00
+	CS-134	563.23	8.38	-3.48E-01	1.42E-01	1.58E+00
		569.32	15.43	1.27E-03		8.73E-01
		604.70	97.60	-2.83E-02		1.42E-01
		795.84	85.40	1.63E-01		2.14E-01
		801.93	8.73	4.54E-02		1.68E+00
+	CS-135	268.24	16.00	1.62E-02	7.02E-01	7.02E-01
+	I-135	1131.51	22.50	-2.66E+13	1.64E+14	2.40E+14
		1260.41	28.60	3.72E+13		1.64E+14
		1678.03	9.54	-1.14E+13		2.74E+14
+	CS-136	153.22	7.46	5.81E-01	3.08E-01	2.37E+00
		163.89	4.61	4.32E-01		3.69E+00
		176.55	13.56	-2.04E-01		1.24E+00
		273.65	12.66	-6.60E-02		1.91E+00
		340.57	48.50	1.38E+00		6.68E-01
		818.50	99.70	9.87E-02		3.08E-01
		1048.07	79.60	-7.18E-02		3.93E-01
		1235.34	19.70	5.71E-01		2.20E+00
+	CS-137	661.65	85.12	1.36E-02	1.82E-01	1.82E-01
+	LA-138	788.74	34.00	1.45E-01	2.15E-01	4.55E-01
		1435.80	66.00	-3.60E-02		2.15E-01
+	CE-139	165.85	80.35	4.16E-03	1.12E-01	1.12E-01
+	BA-140	162.64	6.70	5.90E-01	9.88E-01	2.62E+00
		304.84	4.50	8.38E-01		4.67E+00
		423.70	3.20	5.66E+00		8.22E+00
		437.55	2.00	2.26E+00		1.21E+01
		537.32	25.00	-4.60E-02		9.88E-01
+	LA-140	328.77	20.50	8.18E-01	4.06E-01	1.24E+00

Analysis Report for 1606040-10
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<i>Nuclide Name</i>	<i>Energy (keV)</i>	<i>Yield(%)</i>	<i>Activity (pCi/grams)</i>	<i>Nuclide MDA (pCi/grams)</i>	<i>Line MDA (pCi/grams)</i>
LA-140	487.03	45.50	-1.16E-01	4.06E-01	5.22E-01
	815.85	23.50	1.03E+00		1.41E+00
	1596.49	95.49	1.86E-01		4.06E-01
+	CE-141	145.44	48.40	1.23E-01	2.45E-01
+	CE-143	57.36	11.80	-5.06E+02	2.64E+02
	293.26	42.00	2.40E+02		2.64E+02
	664.55	5.20	4.39E+02		2.28E+03
+	CE-144	133.54	10.80	-5.35E-02	7.62E-01
+	PM-144	476.78	42.00	-6.02E-02	1.49E-01
	618.01	98.60	5.95E-02		1.49E-01
	696.49	99.49	5.61E-02		1.59E-01
+	PM-145	36.85	21.70	3.52E-01	5.05E-01
	37.36	39.70	-4.10E-01		5.05E-01
	42.30	15.10	6.20E-02		1.01E+00
	72.40	2.31	-1.12E+01		5.22E+00
+	PM-146	453.90	39.94	-7.32E-02	2.93E-01
	735.90	14.01	6.65E-01		1.02E+00
	747.13	13.10	-1.82E-01		1.13E+00
+	ND-147	91.11	* 28.90	1.24E+00	2.01E+00
	531.02	13.10	-2.92E-01		2.01E+00
+	PM-149	285.90	3.10	-7.81E+01	2.06E+02
+	EU-152	121.78	20.50	6.52E-02	3.71E-01
	244.69	5.40	-9.06E-02		2.50E+00
	344.27	19.13	-4.56E-02		5.90E-01
	778.89	9.20	-5.47E-01		1.47E+00
	964.01	10.40	2.85E-01		1.63E+00
	1085.78	7.22	9.85E-01		2.26E+00
	1112.02	9.60	4.10E-01		1.76E+00
	1407.95	14.94	6.16E-01		1.11E+00
+	GD-153	97.43	31.30	7.98E-02	2.85E-01
	103.18	22.20	-3.32E-01		3.64E-01
+	EU-154	123.07	40.50	2.45E-02	1.89E-01
	723.30	19.70	7.75E-02		7.19E-01
	873.19	11.50	1.35E-01		1.15E+00
	996.32	10.30	-1.15E+00		1.53E+00
	1004.76	17.90	1.30E-01		9.82E-01
	1274.45	35.50	1.95E-01		5.25E-01
+	EU-155	86.50	30.90	1.48E-01	3.71E-01
	105.30	20.70	1.93E-01		3.97E-01
+	EU-156	811.77	10.40	6.25E-01	2.84E+00
	1153.47	7.20	8.69E-01		3.85E+00
	1230.71	8.90	-5.12E-01		4.08E+00
+	HO-166M	184.41	72.60	1.94E-01	1.54E-01
	280.45	29.60	-1.01E-02		3.71E-01
	410.94	11.10	-1.59E-01		1.06E+00
	711.69	54.10	4.68E-02		2.85E-01
+	TM-171	66.72	0.14	-5.45E+00	8.40E+01
+	HF-172	81.75	4.52	-1.07E+01	7.24E-01
	125.81	11.30	-6.61E-01		7.24E-01

Analysis Report for 1606040-10
CP-5024 05-10

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	LU-172	181.53	20.60	1.82E-01	9.73E-01	1.58E+00
		810.06	16.63	-4.92E-01		3.68E+00
		912.12	15.25	1.64E+01		7.64E+00
		1093.66	62.50	-1.72E-01		9.73E-01
+	LU-173	100.72	5.24	6.94E-01	5.59E-01	1.59E+00
		272.11	*	21.20	5.82E-01	5.59E-01
+	HF-175	343.40	84.00	1.54E-02	1.81E-01	1.81E-01
+	LU-176	88.34	13.30	7.84E-01	1.07E-01	8.97E-01
		201.83	86.00	3.44E-02		1.29E-01
		306.78	94.00	1.97E-02		1.07E-01
+	TA-182	67.75	41.20	-1.08E-02	2.94E-01	2.94E-01
		1121.30	34.90	8.52E-01		7.39E-01
		1189.05	16.23	5.14E-01		1.29E+00
		1221.41	26.98	1.69E-01		8.52E-01
		1231.02	11.44	-2.37E-01		1.90E+00
+	IR-192	308.46	29.68	3.59E-03	2.69E-01	3.91E-01
		468.07	48.10	4.35E-02		2.69E-01
+	HG-203	279.19	77.30	2.16E-01	1.85E-01	1.85E-01
+	BI-207	569.67	97.72	8.36E-02	1.43E-01	1.43E-01
		1063.62	74.90	-5.97E-04		2.19E-01
+	TL-208	583.14	30.22	2.13E+00	8.04E-01	8.04E-01
		860.37	4.48	2.67E+00		4.08E+00
		2614.66	35.85	1.96E+00		1.20E+00
+	BI-210M	262.00	45.00	-1.06E-01	2.18E-01	2.18E-01
		300.00	23.00	-6.34E-01		5.73E-01
+	PB-210	46.50	*	4.25	4.14E+00	4.14E+00
+	PB-211	404.84	2.90	-2.08E+00	3.92E+00	3.92E+00
		831.96	2.90	-1.15E-01		5.30E+00
+	BI-212	727.17	*	11.80	1.71E+00	1.71E+00
		1620.62	2.75	1.64E+00		5.14E+00
+	PB-212	238.63	*	44.60	4.38E-01	4.38E-01
		300.09	3.41	-4.28E+00		3.86E+00
+	BI-214	609.31	*	46.30	4.04E-01	4.04E-01
		1120.29	15.10	1.09E+00		1.51E+00
		1764.49	15.80	1.48E+00		1.64E+00
		2204.22	4.98	3.72E-01		3.38E+00
+	PB-214	295.21	*	19.19	4.62E-01	1.07E+00
		351.92	*	37.19	1.92E+00	4.62E-01
+	RN-219	401.80	6.50	7.72E-01	1.83E+00	1.83E+00
+	RA-223	323.87	3.88	3.25E-01	2.86E+00	2.86E+00
+	RA-224	240.98	3.95	3.32E+01	5.97E+00	5.97E+00
+	RA-225	40.00	31.00	2.44E-01	1.06E+00	1.06E+00
+	RA-226	186.21	*	3.28	4.14E+00	4.14E+00
+	TH-227	50.10	8.40	-2.80E-01	1.47E+00	1.47E+00
		236.00	11.50	-3.98E-01		1.51E+00
		256.20	6.30	2.18E-01		1.69E+00
+	AC-228	338.32	*	11.40	9.14E-01	1.36E+00
		911.07	*	27.70	2.25E+00	9.14E-01

Analysis Report for 1606040-10
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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	AC-228	969.11	16.60	1.84E+00	9.14E-01	1.49E+00
+	TH-230	48.44	16.90	8.10E-01	8.44E-01	8.44E-01
		62.85	4.60	3.87E+00		2.86E+00
		67.67	0.37	-1.11E+00		3.03E+01
+	PA-231	283.67	1.60	-2.38E+00	5.18E+00	6.45E+00
		302.67	2.30	1.48E+00		5.18E+00
+	TH-231	25.64	14.70	-5.81E+00	1.57E+00	4.96E+00
		84.21	6.40	-1.78E+00		1.57E+00
+	PA-233	311.98	38.60	2.54E-02	3.78E-01	3.78E-01
+	PA-234	131.20	20.40	4.62E-01	4.44E-01	4.44E-01
		733.99	8.80	5.49E-01		1.60E+00
		946.00	12.00	4.05E-02		1.40E+00
+	PA-234M	1001.03	0.92	-7.65E-01	1.90E+01	1.90E+01
+	TH-234	63.29	*	3.80	4.27E+00	4.27E+00
+	U-235	143.76	10.50	-1.26E-01	8.30E-01	8.30E-01
		163.35	4.70	2.11E-01		1.80E+00
		205.31	4.70	5.32E-01		2.28E+00
+	NP-237	86.50	12.60	3.61E-01	9.06E-01	9.06E-01
+	NP-239	106.10	22.70	3.78E+00	1.77E+01	1.77E+01
		228.18	10.70	3.26E+00		4.83E+01
		277.60	14.10	2.55E+01		4.07E+01
+	AM-241	59.54	35.90	-1.05E-02	3.20E-01	3.20E-01
+	AM-243	74.67	66.00	-1.00E-01	2.17E-01	2.17E-01
+	CM-243	209.75	3.29	3.13E+00	8.37E-01	3.57E+00
		228.14	10.60	6.73E-02		9.96E-01
		277.60	14.00	5.25E-01		8.37E-01

- + = Nuclide identified during the nuclide identification
 * = Energy line found in the spectrum
 > = MDA value not calculated
 @ = Half-life too short to be able to perform the decay correction
 ? = 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 1606040-10
CP-5024 05-10

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	-4.47E-02	6.21E-01
NA-22	1274.54	99.94	1.88E-01	1.88E-01	6.97E-02	8.53E-02
NA-24	1368.53	99.99	3.00E+05	2.93E+05	-1.40E+05	1.29E+05
	2754.09	99.86	2.93E+05		-3.66E+04	1.14E+05
AL-26	1808.65	99.76	1.15E-01	1.15E-01	-2.63E-02	4.65E-02
+ K-40	1460.81	* 10.67	1.73E+00	1.73E+00	2.65E+01	7.79E-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	1.18E-01	1.18E-01	-4.36E-03	5.78E-02
	78.34	96.00	1.48E-01		3.17E-01	7.29E-02
SC-46	889.25	99.98	1.78E-01	1.78E-01	6.04E-02	8.20E-02
	1120.51	99.99	2.55E-01		1.83E-01	1.19E-01
V-48	983.52	99.98	2.40E-01	2.40E-01	5.98E-02	1.08E-01
	1312.10	97.50	3.32E-01		-1.68E-03	1.50E-01
CR-51	320.08	9.83	1.51E+00	1.51E+00	-2.12E-02	7.19E-01
MN-54	834.83	99.97	1.69E-01	1.69E-01	1.26E-02	7.83E-02
CO-56	846.75	99.96	1.70E-01	1.70E-01	3.86E-02	7.84E-02
	1037.75	14.03	1.26E+00		1.45E-01	5.71E-01
	1238.25	67.00	3.60E-01		4.08E-02	1.66E-01
	1771.40	15.51	1.09E+00		-9.68E-02	4.68E-01
	2598.48	16.90	4.97E-01		-2.03E-01	1.57E-01
CO-57	122.06	85.51	9.18E-02	9.18E-02	1.61E-02	4.43E-02
	136.48	10.60	7.93E-01		6.37E-03	3.83E-01
CO-58	810.76	99.40	1.70E-01	1.70E-01	-9.69E-02	7.86E-02
FE-59	1099.22	56.50	3.38E-01	3.38E-01	-1.02E-02	1.53E-01
	1291.56	43.20	5.34E-01		-3.26E-01	2.43E-01
CO-60	1173.22	100.00	1.92E-01	1.71E-01	-3.00E-02	8.82E-02
	1332.49	100.00	1.71E-01		6.83E-02	7.69E-02
ZN-65	1115.52	50.75	3.17E-01	3.17E-01	-4.67E-03	1.43E-01
GA-67	93.31	35.70	5.42E+00	5.42E+00	1.05E+01	2.65E+00
	208.95	2.24	8.61E+01		2.75E+01	4.17E+01
	300.22	16.00	1.37E+01		-1.52E+01	6.59E+00
SE-75	121.11	16.70	4.84E-01	1.47E-01	-2.67E-02	2.33E-01
	136.00	59.20	1.47E-01		-1.12E-03	7.09E-02
	264.65	59.80	1.77E-01		-4.28E-02	8.43E-02
	279.53	25.20	5.00E-01		4.71E-01	2.40E-01
	400.65	11.40	1.12E+00		4.06E-01	5.28E-01
RB-82	776.52	13.00	1.55E+00	1.55E+00	3.57E-01	7.13E-01
RB-83	520.41	46.00	3.03E-01	3.03E-01	1.47E-01	1.42E-01
	529.64	30.30	4.28E-01		4.73E-02	1.99E-01
	552.65	16.40	8.27E-01		1.39E-02	3.85E-01
KR-85	513.99	0.43	4.18E+01	4.18E+01	4.80E+00	2.00E+01
SR-85	513.99	99.27	2.10E-01	2.10E-01	2.41E-02	1.01E-01
Y-88	898.02	93.40	1.72E-01	1.50E-01	-4.81E-02	7.88E-02
	1836.01	99.38	1.50E-01		-6.68E-04	6.29E-02
NB-93M	16.57	9.43	1.40E+02	1.40E+02	1.33E+00	6.82E+01
NB-94	702.63	100.00	1.50E-01	1.40E-01	-3.00E-02	7.00E-02
	871.10	100.00	1.40E-01		2.03E-02	6.41E-02
NB-95	765.79	99.81	2.06E-01	2.06E-01	5.32E-02	9.59E-02
NB-95M	235.69	25.00	8.77E+00	8.77E+00	-2.31E+00	4.29E+00
ZR-95	724.18	43.70	4.10E-01	3.27E-01	4.67E-02	1.91E-01
	756.72	55.30	3.27E-01		-1.88E-02	1.52E-01

Analysis Report for 1606040-10
CP-5024 05-10

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	3.76E+01	2.95E+01	8.14E+00	1.81E+01
	739.58	12.80	2.95E+01		-7.59E+00	1.36E+01
	778.00	4.50	8.30E+01		-1.93E+01	3.81E+01
RU-103	497.08	89.00	1.56E-01	1.56E-01	-9.00E-02	7.29E-02
RU-106	621.84	9.80	1.41E+00	1.41E+00	-4.09E-01	6.59E-01
AG-108M	433.93	89.90	1.26E-01	1.26E-01	1.07E-02	5.94E-02
	614.37	90.40	1.95E-01		-1.56E-03	9.24E-02
	722.95	90.50	1.56E-01		1.68E-02	7.22E-02
CD-109	88.03	3.72	3.12E+00	3.12E+00	1.47E+00	1.53E+00
AG-110M	657.75	93.14	1.60E-01	1.60E-01	-9.77E-03	7.48E-02
	677.61	10.53	1.40E+00		-7.18E-02	6.53E-01
	706.67	16.46	9.86E-01		1.82E-01	4.61E-01
	763.93	21.98	6.34E-01		-8.57E-01	2.91E-01
	884.67	71.63	2.01E-01		-2.33E-02	9.15E-02
	1384.27	23.94	6.47E-01		1.17E-01	2.84E-01
CD-113M	263.70	0.02	4.28E+02	4.28E+02	-9.53E+01	2.04E+02
SN-113	255.12	1.93	5.90E+00	1.95E-01	6.34E-01	2.83E+00
	391.69	64.90	1.95E-01		2.59E-02	9.26E-02
	159.00	84.10	1.10E-01	1.10E-01	-9.30E-03	5.28E-02
SB-124	602.71	97.87	1.55E-01	1.55E-01	-2.09E-02	7.23E-02
	645.85	7.26	2.03E+00		-4.49E-01	9.41E-01
	722.78	11.10	1.48E+00		1.60E-01	6.85E-01
	1691.02	49.00	4.03E-01		-1.23E-02	1.77E-01
I-125	35.49	6.49	4.06E+00	4.06E+00	-2.04E-02	1.96E+00
SB-125	176.33	6.89	1.22E+00	4.22E-01	-3.19E-01	5.86E-01
	427.89	29.33	4.22E-01		1.53E-01	1.99E-01
	463.38	10.35	1.36E+00		1.10E+00	6.48E-01
	600.56	17.80	7.48E-01		-8.00E-02	3.49E-01
	635.90	11.32	1.27E+00		1.38E-01	5.94E-01
	414.70	83.30	2.98E-01	2.98E-01	-4.83E-02	1.41E-01
SB-126	666.33	99.60	2.99E-01		-7.93E-02	1.39E-01
	695.00	99.60	3.15E-01		5.69E-02	1.47E-01
	720.50	53.80	5.80E-01		5.11E-02	2.70E-01
	87.57	37.00	3.08E-01	3.08E-01	1.45E-01	1.51E-01
SN-126	473.00	25.00	4.77E+00	4.29E+00	6.36E-01	2.23E+00
	685.20	35.70	4.29E+00		-9.95E-01	1.99E+00
	783.80	14.70	1.11E+01		2.79E+00	5.15E+00
I-129	29.78	57.00	7.01E-01	7.01E-01	1.53E-01	3.39E-01
	33.60	13.20	1.91E+00		-1.59E+00	9.20E-01
	39.58	7.52	2.42E+00		5.54E-01	1.17E+00
I-131	284.30	6.05	5.34E+00	4.26E-01	-1.97E+00	2.55E+00
	364.48	81.20	4.26E-01		-1.30E-02	2.02E-01
	636.97	7.26	6.11E+00		3.74E-01	2.85E+00
	722.89	1.80	2.45E+01		2.64E+00	1.13E+01
TE-132	49.72	13.10	1.58E+01	2.00E+00	-3.03E+00	7.68E+00
	228.16	88.00	2.00E+00		1.35E-01	9.61E-01
BA-133	81.00	33.00	3.08E-01	3.07E-01	-1.33E+00	1.50E-01
	302.84	17.80	6.71E-01		1.92E-01	3.22E-01
	356.01	60.00	3.07E-01		5.64E-01	1.49E-01
I-133	529.87	86.30	5.29E+03	5.29E+03	5.84E+02	2.46E+03
XE-133	81.00	38.00	1.53E+00	1.53E+00	-6.62E+00	7.47E-01
CS-134	563.23	8.38	1.58E+00	1.42E-01	-3.48E-01	7.40E-01
	569.32	15.43	8.73E-01		1.27E-03	4.08E-01

Analysis Report for 1606040-10

CP-5024 05-10

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	1.42E-01	1.42E-01	-2.83E-02	6.62E-02
	795.84	85.40	2.14E-01		1.63E-01	1.00E-01
	801.93	8.73	1.68E+00		4.54E-02	7.72E-01
CS-135	268.24	16.00	7.02E-01	7.02E-01	1.62E-02	3.37E-01
I-135	1131.51	22.50	2.40E+14	1.64E+14	-2.66E+13	1.11E+14
	1260.41	28.60	1.64E+14		3.72E+13	7.36E+13
	1678.03	9.54	2.74E+14		-1.14E+13	1.06E+14
CS-136	153.22	7.46	2.37E+00	3.08E-01	5.81E-01	1.15E+00
	163.89	4.61	3.69E+00		4.32E-01	1.78E+00
	176.55	13.56	1.24E+00		-2.04E-01	5.94E-01
	273.65	12.66	1.91E+00		-6.60E-02	9.17E-01
	340.57	48.50	6.68E-01		1.38E+00	3.23E-01
	818.50	99.70	3.08E-01		9.87E-02	1.42E-01
	1048.07	79.60	3.93E-01		-7.18E-02	1.79E-01
	1235.34	19.70	2.20E+00		5.71E-01	1.02E+00
CS-137	661.65	85.12	1.82E-01	1.82E-01	1.36E-02	8.52E-02
LA-138	788.74	34.00	4.55E-01	2.15E-01	1.45E-01	2.11E-01
	1435.80	66.00	2.15E-01		-3.60E-02	9.34E-02
CE-139	165.85	80.35	1.12E-01	1.12E-01	4.16E-03	5.41E-02
BA-140	162.64	6.70	2.62E+00	9.88E-01	5.90E-01	1.26E+00
	304.84	4.50	4.67E+00		8.38E-01	2.22E+00
	423.70	3.20	8.22E+00		5.66E+00	3.90E+00
	437.55	2.00	1.21E+01		2.26E+00	5.69E+00
	537.32	25.00	9.88E-01		-4.60E-02	4.61E-01
LA-140	328.77	20.50	1.24E+00	4.06E-01	8.18E-01	5.94E-01
	487.03	45.50	5.22E-01		-1.16E-01	2.45E-01
	815.85	23.50	1.41E+00		1.03E+00	6.55E-01
	1596.49	95.49	4.06E-01		1.86E-01	1.81E-01
CE-141	145.44	48.40	2.45E-01	2.45E-01	1.23E-01	1.19E-01
CE-143	57.36	11.80	7.30E+02	2.64E+02	-5.06E+02	3.55E+02
	293.26	42.00	2.64E+02		2.40E+02	1.27E+02
	664.55	5.20	2.28E+03		4.39E+02	1.07E+03
CE-144	133.54	10.80	7.62E-01	7.62E-01	-5.35E-02	3.68E-01
PM-144	476.78	42.00	2.76E-01	1.49E-01	-6.02E-02	1.29E-01
	618.01	98.60	1.49E-01		5.95E-02	6.96E-02
	696.49	99.49	1.59E-01		5.61E-02	7.44E-02
PM-145	36.85	21.70	9.74E-01	5.05E-01	3.52E-01	4.71E-01
	37.36	39.70	5.05E-01		-4.10E-01	2.44E-01
	42.30	15.10	1.01E+00		6.20E-02	4.91E-01
	72.40	2.31	5.22E+00		-1.12E+01	2.55E+00
PM-146	453.90	39.94	2.93E-01	2.93E-01	-7.32E-02	1.38E-01
	735.90	14.01	1.02E+00		6.65E-01	4.71E-01
	747.13	13.10	1.13E+00		-1.82E-01	5.25E-01
+ ND-147	91.11	*	2.91E+00	2.01E+00	1.24E+00	1.44E+00
	531.02		2.01E+00		-2.92E-01	9.34E-01
PM-149	285.90	3.10	2.06E+02	2.06E+02	-7.81E+01	9.81E+01
EU-152	121.78	20.50	3.71E-01	3.71E-01	6.52E-02	1.79E-01
	244.69	5.40	2.50E+00		-9.06E-02	1.21E+00
	344.27	19.13	5.90E-01		-4.56E-02	2.80E-01
	778.89	9.20	1.47E+00		-5.47E-01	6.76E-01
	964.01	10.40	1.63E+00		2.85E-01	7.51E-01
	1085.78	7.22	2.26E+00		9.85E-01	1.03E+00
	1112.02	9.60	1.76E+00		4.10E-01	8.00E-01

Analysis Report for 1606040-10
CP-5024 05-10

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	1.11E+00	3.71E-01	6.16E-01	4.93E-01
GD-153	97.43	31.30	2.85E-01	2.85E-01	7.98E-02	1.38E-01
	103.18	22.20	3.64E-01		-3.32E-01	1.76E-01
EU-154	123.07	40.50	1.89E-01	1.89E-01	2.45E-02	9.09E-02
	723.30	19.70	7.19E-01		7.75E-02	3.33E-01
	873.19	11.50	1.15E+00		1.35E-01	5.21E-01
	996.32	10.30	1.53E+00		-1.15E+00	7.00E-01
	1004.76	17.90	9.82E-01		1.30E-01	4.52E-01
	1274.45	35.50	5.25E-01		1.95E-01	2.39E-01
EU-155	86.50	30.90	3.71E-01	3.71E-01	1.48E-01	1.81E-01
	105.30	20.70	3.97E-01		1.93E-01	1.92E-01
EU-156	811.77	10.40	2.84E+00	2.84E+00	6.25E-01	1.32E+00
	1153.47	7.20	3.85E+00		8.69E-01	1.73E+00
	1230.71	8.90	4.08E+00		-5.12E-01	1.87E+00
HO-166M	184.41	72.60	1.54E-01	1.54E-01	1.94E-01	7.47E-02
	280.45	29.60	3.71E-01		-1.01E-02	1.78E-01
	410.94	11.10	1.06E+00		-1.59E-01	5.02E-01
	711.69	54.10	2.85E-01		4.68E-02	1.33E-01
TM-171	66.72	0.14	8.40E+01	8.40E+01	-5.45E+00	4.10E+01
HF-172	81.75	4.52	2.15E+00	7.24E-01	-1.07E+01	1.05E+00
	125.81	11.30	7.24E-01		-6.61E-01	3.50E-01
LU-172	181.53	20.60	1.58E+00	9.73E-01	1.82E-01	7.57E-01
	810.06	16.63	3.68E+00		-4.92E-01	1.70E+00
	912.12	15.25	7.64E+00		1.64E+01	3.66E+00
	1093.66	62.50	9.73E-01		-1.72E-01	4.40E-01
+ LU-173	100.72	5.24	1.59E+00	5.59E-01	6.94E-01	7.72E-01
	272.11	* 21.20	5.59E-01		5.82E-01	2.69E-01
HF-175	343.40	84.00	1.81E-01	1.81E-01	1.54E-02	8.66E-02
LU-176	88.34	13.30	8.97E-01	1.07E-01	7.84E-01	4.39E-01
	201.83	86.00	1.29E-01		3.44E-02	6.24E-02
	306.78	94.00	1.07E-01		1.97E-02	5.07E-02
TA-182	67.75	41.20	2.94E-01	2.94E-01	-1.08E-02	1.43E-01
	1121.30	34.90	7.39E-01		8.52E-01	3.46E-01
	1189.05	16.23	1.29E+00		5.14E-01	5.92E-01
	1221.41	26.98	8.52E-01		1.69E-01	3.93E-01
	1231.02	11.44	1.90E+00		-2.37E-01	8.74E-01
IR-192	308.46	29.68	3.91E-01	2.69E-01	3.59E-03	1.86E-01
	468.07	48.10	2.69E-01		4.35E-02	1.26E-01
HG-203	279.19	77.30	1.85E-01	1.85E-01	2.16E-01	8.88E-02
BI-207	569.67	97.72	1.43E-01	1.43E-01	8.36E-02	6.72E-02
	1063.62	74.90	2.19E-01		-5.97E-04	1.00E-01
TL-208	583.14	30.22	8.04E-01	8.04E-01	2.13E+00	3.88E-01
	860.37	4.48	4.08E+00		2.67E+00	1.91E+00
	2614.66	35.85	1.20E+00		1.96E+00	5.62E-01
BI-210M	262.00	45.00	2.18E-01	2.18E-01	-1.06E-01	1.04E-01
	300.00	23.00	5.73E-01		-6.34E-01	2.76E-01
+ PB-210	46.50	* 4.25	4.14E+00	4.14E+00	3.07E+00	2.02E+00
PB-211	404.84	2.90	3.92E+00	3.92E+00	-2.08E+00	1.85E+00
	831.96	2.90	5.30E+00		-1.15E-01	2.45E+00
+ BI-212	727.17	* 11.80	1.71E+00	1.71E+00	1.09E+00	8.13E-01
	1620.62	2.75	5.14E+00		1.64E+00	2.20E+00
+ PB-212	238.63	* 44.60	4.38E-01	4.38E-01	2.46E+00	2.14E-01
	300.09	3.41	3.86E+00		-4.28E+00	1.86E+00

Analysis Report for 1606040-10
CP-5024 05-10

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	4.04E-01	4.04E-01	1.24E+00
		1120.29	15.10	1.51E+00		1.09E+00
		1764.49	15.80	1.64E+00		1.48E+00
		2204.22	4.98	3.38E+00		3.72E-01
+	PB-214	295.21 *	19.19	1.07E+00	4.62E-01	1.67E+00
		351.92 *	37.19	4.62E-01		1.92E+00
	RN-219	401.80	6.50	1.83E+00	1.83E+00	7.72E-01
	RA-223	323.87	3.88	2.86E+00	2.86E+00	3.25E-01
	RA-224	240.98	3.95	5.97E+00	5.97E+00	3.32E+01
	RA-225	40.00	31.00	1.06E+00	1.06E+00	2.44E-01
+	RA-226	186.21 *	3.28	4.14E+00	4.14E+00	4.75E+00
	TH-227	50.10	8.40	1.47E+00	1.47E+00	-2.80E-01
		236.00	11.50	1.51E+00		-3.98E-01
		256.20	6.30	1.69E+00		2.18E-01
+	AC-228	338.32 *	11.40	1.36E+00	9.14E-01	2.71E+00
		911.07 *	27.70	9.14E-01		2.25E+00
		969.11	16.60	1.49E+00		1.84E+00
	TH-230	48.44	16.90	8.44E-01	8.44E-01	8.10E-01
		62.85	4.60	2.86E+00		3.87E+00
		67.67	0.37	3.03E+01		-1.11E+00
	PA-231	283.67	1.60	6.45E+00	5.18E+00	-2.38E+00
		302.67	2.30	5.18E+00		1.48E+00
	TH-231	25.64	14.70	4.96E+00	1.57E+00	-5.81E+00
		84.21	6.40	1.57E+00		-1.78E+00
	PA-233	311.98	38.60	3.78E-01	3.78E-01	2.54E-02
	PA-234	131.20	20.40	4.44E-01	4.44E-01	4.62E-01
		733.99	8.80	1.60E+00		5.49E-01
		946.00	12.00	1.40E+00		4.05E-02
	PA-234M	1001.03	0.92	1.90E+01	1.90E+01	-7.65E-01
+	TH-234	63.29 *	3.80	4.27E+00	4.27E+00	2.94E+00
	U-235	143.76	10.50	8.30E-01	8.30E-01	-1.26E-01
		163.35	4.70	1.80E+00		2.11E-01
		205.31	4.70	2.28E+00		5.32E-01
	NP-237	86.50	12.60	9.06E-01	9.06E-01	3.61E-01
	NP-239	106.10	22.70	1.77E+01	1.77E+01	3.78E+00
		228.18	10.70	4.83E+01		3.26E+00
		277.60	14.10	4.07E+01		2.55E+01
	AM-241	59.54	35.90	3.20E-01	3.20E-01	-1.05E-02
	AM-243	74.67	66.00	2.17E-01	2.17E-01	-1.00E-01
	CM-243	209.75	3.29	3.57E+00	8.37E-01	3.13E+00
		228.14	10.60	9.96E-01		6.73E-02
		277.60	14.00	8.37E-01		5.25E-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

Analysis Report for 1606040-10
CP-5024 05-10

No Action Level results available for reporting purposes.

DATA REVIEW COMMENTS REPORT

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

369: 14 18 12 18 14 14 19 13

Sample Title: CP-5024 05-10

Channel	1	2	3	4	5	6	7	8
377:	11	17	16	19	14	20	16	22
385:	16	19	21	15	17	12	19	20
393:	8	16	19	15	10	13	12	14
401:	22	12	19	16	15	11	16	9
409:	12	23	20	14	14	11	17	18
417:	18	11	13	10	20	15	15	12
425:	19	17	19	13	10	14	12	10
433:	13	9	11	17	14	14	9	18
441:	9	13	12	8	11	8	10	9
449:	16	8	10	10	11	16	7	17
457:	13	16	14	13	8	16	12	36
465:	23	11	7	7	9	8	11	5
473:	9	12	15	9	4	16	10	6
481:	16	13	10	16	6	6	11	5
489:	14	15	10	14	11	2	9	8
497:	8	13	13	10	7	17	14	11
505:	11	7	14	11	21	25	51	57
513:	15	14	5	13	14	10	10	10
521:	11	4	17	6	8	12	9	4
529:	14	6	9	10	11	6	8	9
537:	12	10	13	8	11	7	8	11
545:	8	9	12	5	7	10	13	9
553:	7	10	7	8	9	13	12	9
561:	9	13	13	14	9	5	13	9
569:	13	13	7	13	13	6	11	16
577:	11	8	5	6	12	10	44	114
585:	49	13	4	10	11	13	9	12
593:	8	10	10	9	12	8	13	11
601:	11	6	6	10	9	10	16	12
609:	41	99	52	12	6	10	9	13
617:	13	13	13	5	7	8	8	12
625:	11	7	11	11	4	8	12	7
633:	6	11	15	5	17	7	8	5
641:	13	9	9	9	9	2	13	2
649:	8	4	10	2	9	5	8	7
657:	10	9	15	11	6	15	9	9
665:	11	11	11	4	8	11	10	9
673:	12	6	2	8	11	7	8	9
681:	16	10	8	8	7	6	7	13
689:	6	9	6	4	11	7	5	14
697:	12	12	8	10	10	5	12	6
705:	9	12	9	12	8	13	8	10
713:	10	6	11	6	8	11	5	8
721:	8	11	9	6	6	5	20	28
729:	17	7	4	7	6	5	13	8
737:	8	7	5	5	1	12	6	8
745:	7	11	7	8	3	11	8	9
753:	9	13	6	17	10	3	3	9
761:	9	6	5	7	8	4	4	15
769:	18	10	4	8	5	10	3	6
777:	8	7	7	6	4	4	9	8
785:	5	12	11	7	5	5	6	9
793:	7	7	18	17	13	8	5	6

801: 4 6 6 11 8 5 11 4

Sample Title: CP-5024 05-10

Channel	1	2	3	4	5	6	7	8
809:	7	13	4	5	9	6	13	9
817:	4	8	8	3	5	6	3	6
825:	3	4	6	5	7	6	6	5
833:	8	8	9	7	10	9	8	10
841:	10	8	6	10	6	8	3	8
849:	5	6	4	5	3	9	6	6
857:	5	5	7	10	18	16	6	5
865:	6	8	5	5	7	9	1	8
873:	3	4	3	4	3	3	7	4
881:	6	4	4	4	5	7	5	8
889:	3	5	12	7	6	5	2	6
897:	8	7	3	6	7	8	8	6
905:	3	5	4	9	6	12	40	71
913:	27	5	7	4	3	9	0	2
921:	5	5	6	7	2	4	4	4
929:	2	7	1	4	5	10	9	8
937:	6	4	4	8	5	9	6	6
945:	3	7	6	6	13	5	5	0
953:	2	2	5	4	6	9	3	3
961:	13	4	7	5	9	6	2	9
969:	26	32	23	4	4	5	4	7
977:	5	4	4	3	4	5	3	3
985:	4	5	2	2	5	3	7	9
993:	6	8	3	6	7	3	4	9
1001:	9	10	6	5	10	4	4	7
1009:	4	4	2	5	4	6	6	10
1017:	4	9	4	4	2	1	4	9
1025:	7	4	2	2	3	8	2	3
1033:	9	2	8	5	1	4	4	4
1041:	8	3	4	4	4	8	5	1
1049:	6	5	4	7	6	5	4	3
1057:	11	8	1	2	2	6	3	6
1065:	7	10	6	6	6	4	8	8
1073:	1	7	7	7	7	1	9	6
1081:	6	0	4	8	3	4	5	4
1089:	6	1	5	7	5	5	2	5
1097:	7	3	3	4	3	5	4	6
1105:	4	4	7	7	2	3	10	7
1113:	4	3	6	2	1	6	7	11
1121:	19	15	8	7	7	3	5	4
1129:	4	10	14	3	3	7	8	4
1137:	5	5	8	6	9	2	9	5
1145:	8	0	7	5	4	4	7	2
1153:	0	3	4	6	10	7	3	6
1161:	5	2	3	4	3	5	4	6
1169:	8	2	6	6	9	6	10	3
1177:	6	7	7	7	8	10	3	7
1185:	5	4	7	3	6	8	10	4
1193:	2	3	3	2	9	10	6	8
1201:	5	7	13	7	3	5	7	11
1209:	7	4	5	11	7	7	10	3
1217:	9	8	7	8	5	7	7	7
1225:	6	6	8	4	8	4	6	7

1233: 5 9 5 8 8 8 8 5

Sample Title: CP-5024 05-10

Channel	1	2	3	4	5	6	7	8
1241:	7	9	3	6	6	6	6	6
1249:	1	4	5	2	4	9	3	5
1257:	2	5	2	3	4	7	4	2
1265:	2	4	4	4	2	3	1	4
1273:	1	6	1	5	8	5	4	0
1281:	6	2	6	5	5	8	3	1
1289:	5	0	2	10	4	1	8	6
1297:	4	1	3	5	5	4	6	5
1305:	2	1	8	5	1	4	3	1
1313:	4	4	4	5	2	3	3	2
1321:	2	2	2	2	4	3	2	2
1329:	1	3	3	4	4	5	2	2
1337:	1	1	3	2	0	1	4	2
1345:	3	5	4	1	3	2	4	8
1353:	3	1	3	2	4	1	2	2
1361:	1	2	0	2	0	3	1	1
1369:	3	1	1	1	3	4	3	2
1377:	6	1	1	0	3	3	2	2
1385:	2	3	2	1	2	2	1	3
1393:	3	2	3	1	1	1	4	2
1401:	3	0	0	1	0	2	2	6
1409:	4	2	0	5	1	3	3	1
1417:	4	3	4	2	4	3	1	2
1425:	0	1	1	0	5	1	1	1
1433:	3	0	2	1	2	1	4	1
1441:	1	1	5	2	1	0	1	1
1449:	1	5	2	1	1	1	0	2
1457:	1	2	8	67	162	129	48	4
1465:	1	0	3	1	4	1	1	1
1473:	1	1	1	1	1	1	1	2
1481:	2	0	0	0	2	1	1	1
1489:	1	2	0	0	0	1	2	0
1497:	3	0	2	1	1	0	1	3
1505:	3	1	0	3	2	3	2	1
1513:	3	4	2	1	1	4	1	1
1521:	0	0	0	3	0	1	0	1
1529:	0	0	1	0	1	0	0	0
1537:	1	2	2	0	0	1	0	2
1545:	1	2	3	3	1	2	0	3
1553:	2	1	2	1	2	1	0	2
1561:	1	0	1	1	4	1	2	2
1569:	1	0	0	1	1	2	0	1
1577:	3	1	1	2	2	2	1	1
1585:	0	1	3	3	1	4	2	2
1593:	8	2	4	1	1	2	2	2
1601:	1	0	0	1	0	1	0	2
1609:	1	1	1	0	1	1	1	3
1617:	0	1	3	2	2	0	1	0
1625:	1	0	0	0	1	3	2	2
1633:	1	1	2	2	1	1	3	1
1641:	0	0	2	2	1	2	0	1
1649:	1	2	0	1	0	4	1	1
1657:	0	1	0	2	1	1	0	0

1665: 0 1 0 1 0 1 0 1

Sample Title: CP-5024 05-10

Channel	1	2	3	4	5	6	7	8	9
1673:	1	0	0	0	0	3	0	1	
1681:	0	0	0	0	1	0	5	0	
1689:	0	1	2	0	1	1	7	0	
1697:	2	0	0	0	0	1	2	1	
1705:	2	0	0	3	0	1	0	1	
1713:	2	0	1	1	1	1	1	1	
1721:	2	0	0	1	0	0	2	0	
1729:	3	3	1	1	1	0	0	2	
1737:	3	1	0	2	0	0	1	0	
1745:	2	0	1	0	0	2	1	3	
1753:	0	0	0	0	1	0	2	1	
1761:	1	0	4	7	13	11	3	1	
1769:	1	2	2	1	0	0	2	0	
1777:	0	1	1	1	1	1	1	0	
1785:	2	2	0	1	2	4	0	0	
1793:	0	0	1	1	0	1	0	2	
1801:	0	0	2	1	0	0	2	1	
1809:	0	0	1	1	0	2	2	1	
1817:	1	1	0	3	0	0	2	0	
1825:	0	1	2	0	1	0	0	1	
1833:	1	2	0	1	3	0	1	3	
1841:	1	1	1	0	0	1	3	0	
1849:	1	0	0	0	2	0	1	1	
1857:	0	0	0	1	0	0	2	0	
1865:	0	0	0	2	0	0	3	2	
1873:	1	1	1	0	1	2	1	0	
1881:	3	2	2	0	1	2	0	0	
1889:	0	0	0	1	0	1	0	0	
1897:	1	1	2	0	0	1	2	0	
1905:	0	0	1	1	2	1	0	1	
1913:	0	2	1	1	0	2	1	2	
1921:	0	0	0	0	0	3	0	2	
1929:	0	1	1	2	0	2	1	0	
1937:	0	0	0	1	0	2	2	2	
1945:	2	2	1	0	0	0	3	0	
1953:	0	0	0	0	2	0	1	1	
1961:	4	1	0	2	0	1	1	0	
1969:	0	2	0	1	1	0	0	2	
1977:	3	0	3	1	0	1	0	0	
1985:	0	1	1	0	0	2	0	2	
1993:	0	1	0	1	1	0	1	1	
2001:	0	0	0	0	0	0	0	2	
2009:	2	0	1	1	1	0	0	0	
2017:	1	0	0	1	2	0	0	0	
2025:	1	0	0	0	0	0	0	1	
2033:	0	0	1	0	2	1	0	0	
2041:	3	0	1	0	2	0	0	0	
2049:	0	0	3	1	2	3	0	0	
2057:	2	0	2	0	1	1	0	2	
2065:	1	0	0	0	2	0	1	0	
2073:	0	0	1	1	0	0	2	3	
2081:	0	1	0	0	0	1	0	1	
2089:	0	1	0	0	2	2	0	0	

2097: 1 0 0 0 0 4 3 4

Sample Title: CP-5024 05-10

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

2529: 1 1 0 0 0 0 0 0 1

Sample Title: CP-5024 05-10

Channel	1	2	3	4	5	6	7	8	9
2537:	0	0	0	0	1	2	0	0	0
2545:	0	0	1	0	0	0	0	0	0
2553:	0	0	0	0	1	0	1	0	0
2561:	1	0	1	0	1	0	1	0	0
2569:	0	0	0	0	0	0	0	0	0
2577:	0	0	0	0	0	0	0	0	0
2585:	1	0	0	0	2	0	0	0	0
2593:	0	0	0	0	1	0	0	0	0
2601:	0	0	1	0	1	0	0	0	2
2609:	0	2	1	3	6	14	23	12	12
2617:	9	2	0	0	0	0	0	1	1
2625:	1	0	0	0	0	0	0	0	0
2633:	0	1	1	0	0	1	0	0	0
2641:	0	0	0	0	0	1	0	1	1
2649:	0	0	0	0	1	0	0	0	0
2657:	0	1	0	0	0	0	0	0	0
2665:	0	0	1	0	0	0	0	0	0
2673:	1	0	0	0	0	0	0	0	0
2681:	1	0	0	0	0	0	1	0	0
2689:	1	2	0	0	0	0	0	0	0
2697:	0	1	1	0	0	1	0	0	0
2705:	0	0	0	0	0	0	1	0	0
2713:	1	0	1	0	0	0	0	0	0
2721:	0	0	0	0	0	0	1	0	0
2729:	0	0	0	0	0	0	0	0	0
2737:	1	0	0	0	0	2	0	0	0
2745:	0	0	0	1	0	0	1	0	0
2753:	0	1	1	0	1	1	1	1	1
2761:	0	0	0	0	0	0	1	1	1
2769:	0	0	0	1	0	0	0	0	0
2777:	0	0	0	1	0	0	0	0	0
2785:	0	0	0	0	0	1	0	0	0
2793:	1	0	0	0	0	1	0	1	1
2801:	0	0	0	0	0	0	0	0	0
2809:	0	1	0	1	0	0	0	0	0
2817:	0	0	0	0	0	0	0	0	0
2825:	0	0	1	0	0	1	0	0	0
2833:	1	0	1	0	1	0	0	0	0
2841:	0	0	0	0	1	0	0	0	0
2849:	0	0	0	0	1	0	0	0	0
2857:	0	0	1	0	0	0	0	0	0
2865:	1	0	0	0	0	0	0	0	0
2873:	0	0	0	0	0	0	0	0	0
2881:	2	1	0	1	2	0	0	0	0
2889:	1	0	1	0	0	1	0	0	0
2897:	0	0	0	0	1	0	0	0	0
2905:	0	0	0	0	0	1	0	0	0
2913:	1	0	0	0	0	1	2	0	0
2921:	0	0	0	0	0	0	0	0	0
2929:	0	1	1	1	0	0	0	0	0
2937:	0	0	0	0	0	0	0	0	0
2945:	0	0	0	0	0	0	0	0	0
2953:	0	0	0	0	0	0	0	0	0

2961: 0 0 0 0 0 0 1 0 0

Sample Title: CP-5024 05-10

Channel	1	2	3	4	5	6	7	8	9
2969:	0	0	0	0	0	0	0	1	0
2977:	1	0	0	0	0	0	0	1	0
2985:	0	0	0	0	0	0	0	0	0
2993:	0	0	0	0	0	0	0	0	0
3001:	0	0	0	0	1	2	0	0	0
3009:	0	0	0	0	0	0	0	0	1
3017:	0	0	0	0	0	1	0	0	0
3025:	0	0	0	0	0	0	0	0	0
3033:	0	0	1	0	0	0	0	0	0
3041:	1	0	1	0	0	0	0	0	1
3049:	0	0	0	0	0	0	0	1	0
3057:	0	0	0	0	0	0	0	0	0
3065:	1	0	0	0	0	0	0	0	0
3073:	0	0	0	0	1	0	0	0	0
3081:	0	0	0	0	1	0	1	0	0
3089:	0	0	0	0	0	1	0	0	0
3097:	0	0	0	0	1	0	0	0	0
3105:	0	0	0	0	0	1	0	0	0
3113:	0	0	0	0	0	0	0	0	0
3121:	0	0	1	0	0	0	1	0	0
3129:	0	0	0	0	0	0	0	0	0
3137:	0	0	0	0	0	0	0	0	0
3145:	0	0	0	0	0	0	0	0	0
3153:	0	0	0	0	0	0	1	0	0
3161:	0	0	0	0	0	0	0	0	0
3169:	0	0	0	1	0	0	0	0	0
3177:	0	0	0	0	0	0	0	0	2
3185:	1	0	0	0	0	0	0	0	0
3193:	0	0	0	0	0	0	0	0	0
3201:	0	0	1	0	0	0	0	0	0
3209:	0	1	0	0	0	0	0	0	0
3217:	0	0	1	0	0	0	0	0	0
3225:	0	0	1	1	0	0	0	0	0
3233:	0	0	0	0	0	0	0	0	0
3241:	0	0	0	0	0	2	0	0	0
3249:	2	0	0	0	0	0	1	0	0
3257:	0	0	0	0	0	0	0	0	0
3265:	0	0	0	0	0	0	1	1	0
3273:	0	0	1	0	0	0	0	0	0
3281:	0	0	0	0	0	0	0	0	0
3289:	0	0	0	0	0	0	0	0	0
3297:	0	0	1	0	0	0	0	0	0
3305:	0	0	0	0	0	0	0	0	0
3313:	1	1	0	0	0	1	0	0	0
3321:	1	1	0	0	0	0	1	0	0
3329:	0	0	0	0	0	1	0	0	0
3337:	0	0	0	0	1	0	0	0	0
3345:	0	0	0	0	0	0	0	0	0
3353:	1	0	0	0	0	0	1	0	0
3361:	0	0	0	1	0	1	0	0	0
3369:	0	0	0	0	0	0	0	0	0
3377:	0	0	1	0	0	0	0	0	0
3385:	0	0	0	1	1	0	0	0	0

3393: 0 0 0 0 0 0 0 0 1

Sample Title: CP-5024 05-10

Channel	-----	-----	-----	-----	-----	-----	-----	-----
3401:	0	0	0	0	0	0	0	0
3409:	0	1	0	0	0	0	1	0
3417:	0	0	0	0	0	0	1	0
3425:	0	0	0	0	0	0	0	0
3433:	0	1	0	0	1	0	0	0
3441:	0	0	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:	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	0	0	0	1	0	0
3497:	0	0	0	1	0	0	0	0
3505:	0	0	1	0	0	0	1	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:	1	1	0	0	0	0	1	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	1	0	0
3569:	0	0	0	0	0	0	1	0
3577:	1	0	0	0	0	0	0	0
3585:	0	0	0	0	0	0	1	0
3593:	0	0	0	0	0	0	0	1
3601:	0	0	0	0	0	0	0	0
3609:	0	0	0	0	0	0	0	0
3617:	0	0	0	0	1	1	0	0
3625:	0	0	0	0	0	0	0	1
3633:	0	0	0	0	0	0	1	0
3641:	0	0	0	0	0	0	1	0
3649:	1	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	0	0
3681:	0	0	1	0	0	0	0	0
3689:	2	0	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	1	0
3729:	0	0	0	0	0	0	0	0
3737:	0	0	1	1	0	0	0	0
3745:	0	0	0	1	0	1	0	0
3753:	0	0	0	0	0	0	0	0
3761:	0	0	0	1	0	0	1	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	1
3793:	0	0	0	0	0	0	0	0
3801:	1	0	0	0	0	0	0	0
3809:	0	0	0	1	0	0	0	0
3817:	0	0	0	0	0	0	0	0

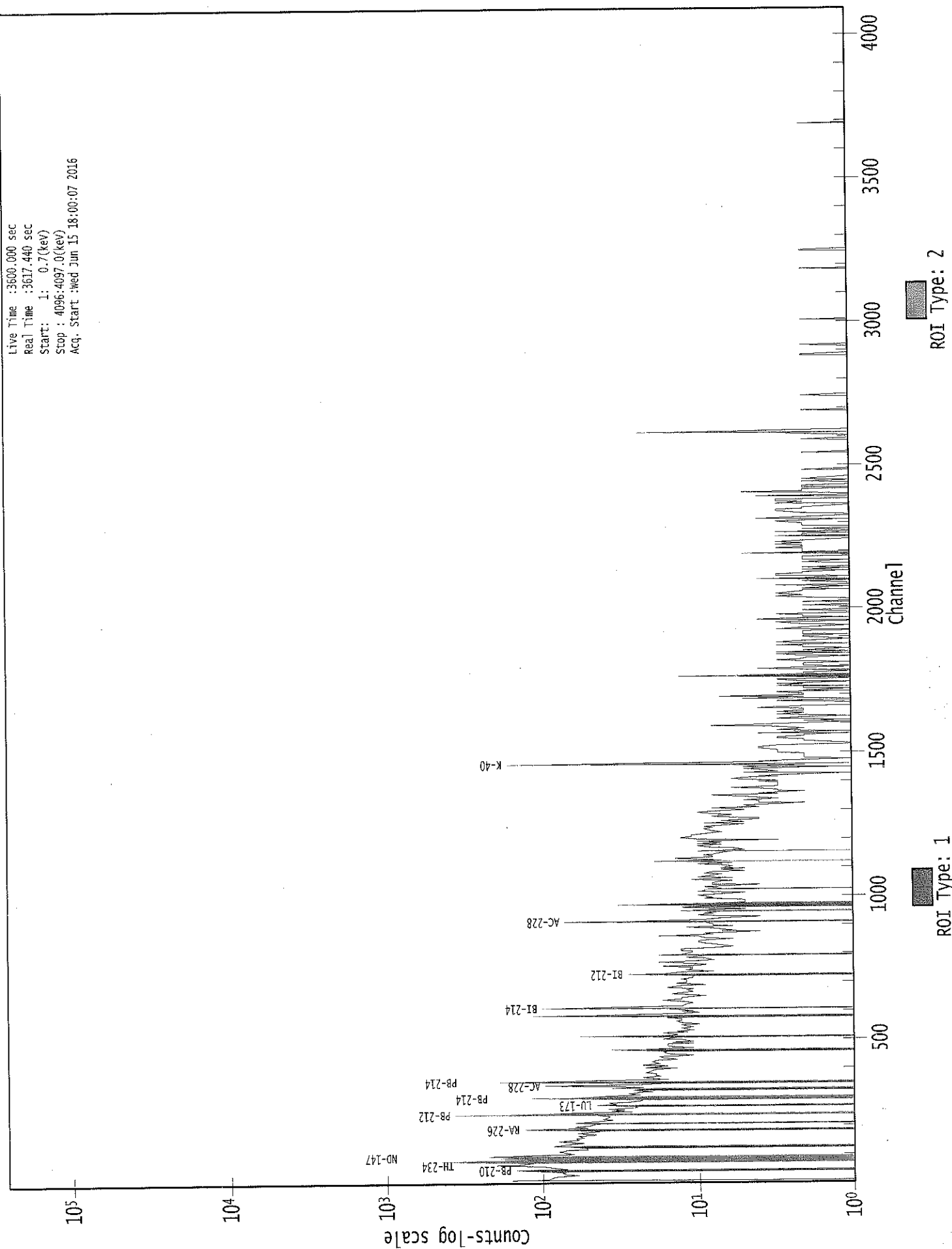
3825: 0 0 0 0 0 0 0 0 0

Sample Title: CP-5024 05-10

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

0000038950.CNF

Live Time :3600.000 sec
Real Time :3617.440 sec
Start: 1: 0.7(keV)
Stop : 4096.4097.0(keV)
Acq. Start :Wed Jun 15 18:00:07 2016



Analysis Report for 1606040-11
CP-5024 10-15

Cell 4

GAMMA SPECTRUM ANALYSIS

Sample Identification : 1606040-11
Sample Description : CP-5024 10-15
Sample Type : SOIL

Sample Size : 2.669E+02 grams
Facility : Countroom

Sample Taken On : 6/2/2016 1:12:05PM
Acquisition Started : 6/15/2016 6:19:51PM

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) : 18 - 4096
Identification Energy Tolerance : 1.000 keV

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

Sample Number : 38951

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
6/16/16

Analysis Report for 1606040-11
 CP-5024 10-15

PEAK LOCATE REPORT

Peak Locate Performed on : 6/15/2016 7:19:55PM
 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	46.71	47.06	0.0000	0.00
2	76.71	77.05	0.0000	0.00
3	87.72	88.06	0.0000	0.00
4	90.80	91.14	0.0000	0.00
5	154.73	155.05	0.0000	0.00
6	186.33	186.64	0.0000	0.00
7	210.05	210.35	0.0000	0.00
8	239.74	240.03	0.0000	0.00
9	274.59	274.86	0.0000	0.00
10	295.84	296.11	0.0000	0.00
11	338.79	339.04	0.0000	0.00
12	352.47	352.72	0.0000	0.00
13	445.56	445.77	0.0000	0.00
14	463.82	464.03	0.0000	0.00
15	522.32	522.51	0.0000	0.00
16	571.83	572.00	0.0000	0.00
17	583.79	583.96	0.0000	0.00
18	610.03	610.19	0.0000	0.00
19	727.46	727.58	0.0000	0.00
20	753.46	753.57	0.0000	0.00
21	787.23	787.33	0.0000	0.00
22	795.17	795.26	0.0000	0.00
23	857.52	857.59	0.0000	0.00
24	861.04	861.12	0.0000	0.00
25	911.89	911.94	0.0000	0.00
26	969.84	969.88	0.0000	0.00
27	1070.33	1070.33	0.0000	0.00
28	1088.29	1088.28	0.0000	0.00
29	1110.18	1110.17	0.0000	0.00
30	1120.47	1120.46	0.0000	0.00
31	1343.99	1343.89	0.0000	0.00
32	1351.49	1351.39	0.0000	0.00
33	1379.22	1379.11	0.0000	0.00
34	1461.50	1461.35	0.0000	0.00
35	1466.14	1466.00	0.0000	0.00
36	1571.98	1571.80	0.0000	0.00
37	1594.66	1594.47	0.0000	0.00
38	1600.90	1600.70	0.0000	0.00
39	1711.99	1711.76	0.0000	0.00
40	1717.65	1717.42	0.0000	0.00
41	1730.39	1730.15	0.0000	0.00
42	1765.04	1764.78	0.0000	0.00

Analysis Report for 1606040-11
CP-5024 10-15

<i>Peak No.</i>	<i>Energy (keV)</i>	<i>Centroid Channel</i>	<i>Centroid Uncertainty</i>	<i>Peak Significance</i>
43	1839.41	1839.13	0.0000	0.00
44	1870.30	1870.00	0.0000	0.00
45	1879.40	1879.10	0.0000	0.00
46	1897.31	1897.00	0.0000	0.00
47	1956.91	1956.58	0.0000	0.00
48	2139.09	2138.69	0.0000	0.00
49	2448.39	2447.87	0.0000	0.00
50	2615.21	2614.63	0.0000	0.00

? = Adjacent peak noted

Errors quoted at 2.000sigma

Analysis Report for 1606040-11
CP-5024 10-15

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 6/15/2016 7:19:55PM

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	46.71	44 -	49	47.06	1.34E+02	62.70	6.75E+02	1.79
2	76.71	72 -	82	77.05	9.99E+02	136.01	1.93E+03	3.34
m 3	87.72	83 -	99	88.06	1.28E+02	56.89	6.27E+02	1.48
m 4	90.80	83 -	99	91.14	1.73E+02	55.14	5.97E+02	1.49
5	154.73	151 -	158	155.05	5.59E+01	68.79	7.50E+02	1.28
6	186.33	182 -	190	186.64	2.14E+02	72.84	6.85E+02	1.42
7	210.05	208 -	214	210.35	5.27E+01	54.40	4.99E+02	1.91
8	239.74	236 -	245	240.03	8.82E+02	86.99	5.71E+02	1.97
9	274.59	266 -	285	274.86	1.63E+02	107.52	9.04E+02	8.35
10	295.84	292 -	300	296.11	1.87E+02	62.38	4.88E+02	1.42
11	338.79	335 -	342	339.04	1.22E+02	49.11	3.22E+02	1.32
12	352.47	348 -	357	352.72	3.42E+02	62.39	3.61E+02	1.65
13	445.56	443 -	449	445.77	2.96E+01	28.58	1.29E+02	4.34
14	463.82	461 -	466	464.03	4.66E+01	26.34	1.01E+02	2.62
15	522.32	519 -	526	522.51	3.36E+01	28.71	1.13E+02	4.57
M 16	571.83	570 -	588	572.00	1.27E+01	13.11	3.69E+01	1.78
m 17	583.79	570 -	588	583.96	2.32E+02	36.17	8.22E+01	1.66
18	610.03	604 -	618	610.19	2.63E+02	62.85	2.96E+02	1.57
19	727.46	723 -	732	727.58	6.32E+01	33.48	1.22E+02	1.47
20	753.46	747 -	759	753.57	5.25E+01	33.92	1.11E+02	9.19
21	787.23	784 -	790	787.33	2.19E+01	23.63	8.21E+01	3.29
22	795.17	791 -	801	795.26	6.36E+01	28.77	7.47E+01	5.50
M 23	857.52	855 -	865	857.59	1.49E+01	14.74	3.70E+01	2.34
m 24	861.04	855 -	865	861.12	4.44E+01	21.34	4.21E+01	2.34
25	911.89	907 -	916	911.94	1.59E+02	38.42	1.20E+02	1.64
26	969.84	966 -	975	969.88	1.02E+02	40.15	1.53E+02	1.88
27	1070.33	1067 -	1074	1070.33	1.83E+01	22.00	6.95E+01	4.70
28	1088.29	1084 -	1093	1088.28	2.07E+01	25.38	8.07E+01	1.86
29	1110.18	1106 -	1113	1110.17	1.75E+01	22.36	7.11E+01	1.23
30	1120.47	1116 -	1123	1120.46	5.50E+01	24.08	6.00E+01	1.97
31	1343.99	1339 -	1348	1343.89	1.85E+01	14.56	1.91E+01	1.22
32	1351.49	1349 -	1354	1351.39	9.50E+00	10.00	1.30E+01	2.95
33	1379.22	1374 -	1384	1379.11	3.05E+01	19.01	2.90E+01	3.00
M 34	1461.50	1455 -	1468	1461.35	5.92E+02	49.69	1.76E+01	2.29
m 35	1466.14	1455 -	1468	1466.00	1.05E+01	9.96	1.50E+01	2.20
36	1571.98	1568 -	1575	1571.80	1.32E+01	8.72	3.67E+00	4.72
37	1594.66	1593 -	1597	1594.47	6.75E+00	8.44	6.50E+00	1.13
38	1600.90	1598 -	1603	1600.70	7.39E+00	6.71	3.22E+00	1.72
39	1711.99	1708 -	1715	1711.76	8.58E+00	8.94	6.83E+00	2.08
40	1717.65	1715 -	1719	1717.42	4.50E+00	6.36	5.00E+00	1.62

Analysis Report for 1606040-11

CP-5024 10-15

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
41	1730.39	1726 -	1734	1730.15	1.46E+01	12.03	1.29E+01	1.65
42	1765.04	1760 -	1769	1764.78	3.80E+01	17.09	2.00E+01	2.02
43	1839.41	1835 -	1842	1839.13	6.30E+00	8.49	7.40E+00	1.40
44	1870.30	1865 -	1875	1870.00	1.60E+01	8.00	0.00E+00	2.12
45	1879.40	1877 -	1881	1879.10	6.56E+00	6.18	2.88E+00	2.81
46	1897.31	1895 -	1899	1897.00	5.00E+00	4.47	0.00E+00	2.98
47	1956.91	1951 -	1962	1956.58	1.20E+01	12.00	1.20E+01	3.91
48	2139.09	2135 -	2142	2138.69	8.25E+00	7.48	3.50E+00	2.65
49	2448.39	2444 -	2451	2447.87	5.07E+00	6.63	3.86E+00	1.08
50	2615.21	2611 -	2618	2614.63	8.00E+01	17.89	0.00E+00	3.15

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 : 6/15/2016 7:19:55PM

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	46.71	44 -	49	1.34E+02	62.70	6.75E+02	4.79E+01
2	76.71	72 -	82	9.99E+02	136.01	1.93E+03	9.90E+01
m 3	87.72	83 -	99	1.28E+02	56.89	6.27E+02	4.12E+01
m 4	90.80	83 -	99	1.73E+02	55.14	5.97E+02	4.02E+01
5	154.73	151 -	158	5.59E+01	68.79	7.50E+02	5.52E+01
6	186.33	182 -	190	2.14E+02	72.84	6.85E+02	5.48E+01
7	210.05	208 -	214	5.27E+01	54.40	4.99E+02	4.31E+01
8	239.74	236 -	245	8.82E+02	86.99	5.71E+02	5.23E+01
9	274.59	266 -	285	1.63E+02	107.52	9.04E+02	8.59E+01
10	295.84	292 -	300	1.87E+02	62.38	4.88E+02	4.61E+01
11	338.79	335 -	342	1.22E+02	49.11	3.22E+02	3.61E+01
12	352.47	348 -	357	3.42E+02	62.39	3.61E+02	4.13E+01
13	445.56	443 -	449	2.96E+01	28.58	1.29E+02	2.17E+01
14	463.82	461 -	466	4.66E+01	26.34	1.01E+02	1.85E+01
15	522.32	519 -	526	3.36E+01	28.71	1.13E+02	2.16E+01
M 16	571.83	570 -	588	1.27E+01	13.11	3.69E+01	9.98E+00
m 17	583.79	570 -	588	2.32E+02	36.17	8.22E+01	1.49E+01

Analysis Report for 1606040-11

CP-5024 10-15

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	18	610.03	604 -	618	2.63E+02	62.85	2.96E+02	1.62E+01
	19	727.46	723 -	732	6.32E+01	33.48	1.22E+02	2.42E+01
	20	753.46	747 -	759	5.25E+01	33.92	1.11E+02	2.52E+01
	21	787.23	784 -	790	2.19E+01	23.63	8.21E+01	1.78E+01
	22	795.17	791 -	801	6.36E+01	28.77	7.47E+01	1.97E+01
M	23	857.52	855 -	865	1.49E+01	14.74	3.70E+01	1.00E+01
m	24	861.04	855 -	865	4.44E+01	21.34	4.21E+01	1.07E+01
	25	911.89	907 -	916	1.59E+02	38.42	1.20E+02	2.38E+01
	26	969.84	966 -	975	1.02E+02	40.15	1.53E+02	2.85E+01
	27	1070.33	1067 -	1074	1.83E+01	22.00	6.95E+01	1.67E+01
	28	1088.29	1084 -	1093	2.07E+01	25.38	8.07E+01	1.95E+01
	29	1110.18	1106 -	1113	1.75E+01	22.36	7.11E+01	1.70E+01
	30	1120.47	1116 -	1123	5.50E+01	24.08	6.00E+01	1.56E+01
	31	1343.99	1339 -	1348	1.85E+01	14.56	1.91E+01	9.66E+00
	32	1351.49	1349 -	1354	9.50E+00	10.00	1.30E+01	6.47E+00
	33	1379.22	1374 -	1384	3.05E+01	19.01	2.90E+01	1.27E+01
M	34	1461.50	1455 -	1468	5.92E+02	49.69	1.76E+01	6.90E+00
m	35	1466.14	1455 -	1468	1.05E+01	9.96	1.50E+01	6.36E+00
	36	1571.98	1568 -	1575	1.32E+01	8.72	3.67E+00	3.97E+00
	37	1594.66	1593 -	1597	6.75E+00	8.44	6.50E+00	5.47E+00
	38	1600.90	1598 -	1603	7.39E+00	6.71	3.22E+00	3.23E+00
	39	1711.99	1708 -	1715	8.58E+00	8.94	6.83E+00	5.55E+00
	40	1717.65	1715 -	1719	4.50E+00	6.36	5.00E+00	3.90E+00
	41	1730.39	1726 -	1734	1.46E+01	12.03	1.29E+01	7.64E+00
	42	1765.04	1760 -	1769	3.80E+01	17.09	2.00E+01	9.73E+00
	43	1839.41	1835 -	1842	6.30E+00	8.49	7.40E+00	5.62E+00
	44	1870.30	1865 -	1875	1.60E+01	8.00	0.00E+00	0.00E+00
	45	1879.40	1877 -	1881	6.56E+00	6.18	2.88E+00	2.85E+00
	46	1897.31	1895 -	1899	5.00E+00	4.47	0.00E+00	0.00E+00
	47	1956.91	1951 -	1962	1.20E+01	12.00	1.20E+01	8.05E+00
	48	2139.09	2135 -	2142	8.25E+00	7.48	3.50E+00	3.94E+00
	49	2448.39	2444 -	2451	5.07E+00	6.63	3.86E+00	4.00E+00
	50	2615.21	2611 -	2618	8.00E+01	17.89	0.00E+00	0.00E+00

M = First peak in a multiplet region

m = Other peak in a multiplet region

F = Fitted singlet

Errors quoted at 2.00sigma

Analysis Report for 1606040-11
CP-5024 10-15

PEAK WITH NID REPORT

Peak Analysis Performed on : 6/15/2016 7:19:55PM

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	46.71	44 -	49	47.06	1.34E+02	62.70	6.75E+02	PB-210
2	76.71	72 -	82	77.05	9.99E+02	136.01	1.93E+03	.....
m 3	87.72	83 -	99	88.06	1.28E+02	56.89	6.27E+02	SN-126 CD-109 LU-176
m 4	90.80	83 -	99	91.14	1.73E+02	55.14	5.97E+02	ND-147
5	154.73	151 -	158	155.05	5.59E+01	68.79	7.50E+02	.....
6	186.33	182 -	190	186.64	2.14E+02	72.84	6.85E+02	RA-226
7	210.05	208 -	214	210.35	5.27E+01	54.40	4.99E+02	CM-243
8	239.74	236 -	245	240.03	8.82E+02	86.99	5.71E+02	.....
9	274.59	266 -	285	274.86	1.63E+02	107.52	9.04E+02	CS-136
10	295.84	292 -	300	296.11	1.87E+02	62.38	4.88E+02	PB-214
11	338.79	335 -	342	339.04	1.22E+02	49.11	3.22E+02	AC-228
12	352.47	348 -	357	352.72	3.42E+02	62.39	3.61E+02	PB-214
13	445.56	443 -	449	445.77	2.96E+01	28.58	1.29E+02	.....
14	463.82	461 -	466	464.03	4.66E+01	26.34	1.01E+02	SB-125
15	522.32	519 -	526	522.51	3.36E+01	28.71	1.13E+02	.....
M 16	571.83	570 -	588	572.00	1.27E+01	13.11	3.69E+01	.....
m 17	583.79	570 -	588	583.96	2.32E+02	36.17	8.22E+01	TL-208
18	610.03	604 -	618	610.19	2.63E+02	62.85	2.96E+02	BI-214
19	727.46	723 -	732	727.58	6.32E+01	33.48	1.22E+02	BI-212
20	753.46	747 -	759	753.57	5.25E+01	33.92	1.11E+02	.....
21	787.23	784 -	790	787.33	2.19E+01	23.63	8.21E+01	.....
22	795.17	791 -	801	795.26	6.36E+01	28.77	7.47E+01	CS-134
M 23	857.52	855 -	865	857.59	1.49E+01	14.74	3.70E+01	.....
m 24	861.04	855 -	865	861.12	4.44E+01	21.34	4.21E+01	TL-208
25	911.89	907 -	916	911.94	1.59E+02	38.42	1.20E+02	LU-172 AC-228
26	969.84	966 -	975	969.88	1.02E+02	40.15	1.53E+02	AC-228
27	1070.33	1067 -	1074	1070.33	1.83E+01	22.00	6.95E+01	.....
28	1088.29	1084 -	1093	1088.28	2.07E+01	25.38	8.07E+01	.....
29	1110.18	1106 -	1113	1110.17	1.75E+01	22.36	7.11E+01	.....
30	1120.47	1116 -	1123	1120.46	5.50E+01	24.08	6.00E+01	SC-46 BI-214 TA-182
31	1343.99	1339 -	1348	1343.89	1.85E+01	14.56	1.91E+01	.....
32	1351.49	1349 -	1354	1351.39	9.50E+00	10.00	1.30E+01	.....
33	1379.22	1374 -	1384	1379.11	3.05E+01	19.01	2.90E+01	.....
M 34	1461.50	1455 -	1468	1461.35	5.92E+02	49.69	1.76E+01	K-40
m 35	1466.14	1455 -	1468	1466.00	1.05E+01	9.96	1.50E+01	.....
36	1571.98	1568 -	1575	1571.80	1.32E+01	8.72	3.67E+00	.....

Analysis Report for 1606040-11
CP-5024 10-15

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
37	1594.66	1593 -	1597	1594.47	6.75E+00	8.44	6.50E+00	.....
38	1600.90	1598 -	1603	1600.70	7.39E+00	6.71	3.22E+00	.....
39	1711.99	1708 -	1715	1711.76	8.58E+00	8.94	6.83E+00	.....
40	1717.65	1715 -	1719	1717.42	4.50E+00	6.36	5.00E+00	.....
41	1730.39	1726 -	1734	1730.15	1.46E+01	12.03	1.29E+01	.....
42	1765.04	1760 -	1769	1764.78	3.80E+01	17.09	2.00E+01	BI-214
43	1839.41	1835 -	1842	1839.13	6.30E+00	8.49	7.40E+00	.....
44	1870.30	1865 -	1875	1870.00	1.60E+01	8.00	0.00E+00	.....
45	1879.40	1877 -	1881	1879.10	6.56E+00	6.18	2.88E+00	.....
46	1897.31	1895 -	1899	1897.00	5.00E+00	4.47	0.00E+00	.....
47	1956.91	1951 -	1962	1956.58	1.20E+01	12.00	1.20E+01	.....
48	2139.09	2135 -	2142	2138.69	8.25E+00	7.48	3.50E+00	.....
49	2448.39	2444 -	2451	2447.87	5.07E+00	6.63	3.86E+00	.....
50	2615.21	2611 -	2618	2614.63	8.00E+01	17.89	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 : 6/15/2016 7:19:55PM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	46.71	1.34E+02	62.70	1.69E-02	1.78E-03
	2	76.71	9.99E+02	136.01	2.77E-02	2.36E-03
m	3	87.72	1.28E+02	56.89	2.85E-02	2.73E-03
m	4	90.80	1.73E+02	55.14	2.86E-02	2.69E-03
	5	154.73	5.59E+01	68.79	2.47E-02	2.15E-03
	6	186.33	2.14E+02	72.84	2.24E-02	2.02E-03
	7	210.05	5.27E+01	54.40	2.08E-02	1.85E-03
	8	239.74	8.82E+02	86.99	1.92E-02	1.63E-03
	9	274.59	1.63E+02	107.52	1.75E-02	1.37E-03
	10	295.84	1.87E+02	62.38	1.67E-02	1.31E-03
	11	338.79	1.22E+02	49.11	1.52E-02	1.22E-03
	12	352.47	3.42E+02	62.39	1.47E-02	1.19E-03
	13	445.56	2.96E+01	28.58	1.25E-02	1.06E-03
	14	463.82	4.66E+01	26.34	1.21E-02	1.04E-03
	15	522.32	3.36E+01	28.71	1.11E-02	9.79E-04
M	16	571.83	1.27E+01	13.11	1.03E-02	9.27E-04

Analysis Report for 1606040-11
CP-5024 10-15

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
m	17	583.79	2.32E+02	36.17	1.02E-02	9.15E-04
	18	610.03	2.63E+02	62.85	9.82E-03	8.88E-04
	19	727.46	6.32E+01	33.48	8.55E-03	7.75E-04
	20	753.46	5.25E+01	33.92	8.32E-03	7.52E-04
	21	787.23	2.19E+01	23.63	8.03E-03	7.22E-04
	22	795.17	6.36E+01	28.77	7.97E-03	7.15E-04
M	23	857.52	1.49E+01	14.74	7.50E-03	6.59E-04
m	24	861.04	4.44E+01	21.34	7.48E-03	6.55E-04
	25	911.89	1.59E+02	38.42	7.14E-03	6.15E-04
	26	969.84	1.02E+02	40.15	6.80E-03	5.85E-04
	27	1070.33	1.83E+01	22.00	6.29E-03	5.33E-04
	28	1088.29	2.07E+01	25.38	6.21E-03	5.23E-04
	29	1110.18	1.75E+01	22.36	6.11E-03	5.12E-04
	30	1120.47	5.50E+01	24.08	6.07E-03	5.07E-04
	31	1343.99	1.85E+01	14.56	5.28E-03	4.48E-04
	32	1351.49	9.50E+00	10.00	5.26E-03	4.46E-04
	33	1379.22	3.05E+01	19.01	5.18E-03	4.40E-04
M	34	1461.50	5.92E+02	49.69	4.97E-03	4.19E-04
m	35	1466.14	1.05E+01	9.96	4.96E-03	4.18E-04
	36	1571.98	1.32E+01	8.72	4.73E-03	3.92E-04
	37	1594.66	6.75E+00	8.44	4.68E-03	3.86E-04
	38	1600.90	7.39E+00	6.71	4.67E-03	3.84E-04
	39	1711.99	8.58E+00	8.94	4.48E-03	3.57E-04
	40	1717.65	4.50E+00	6.36	4.47E-03	3.55E-04
	41	1730.39	1.46E+01	12.03	4.45E-03	3.52E-04
	42	1765.04	3.80E+01	17.09	4.39E-03	3.43E-04
	43	1839.41	6.30E+00	8.49	4.29E-03	3.26E-04
	44	1870.30	1.60E+01	8.00	4.25E-03	3.26E-04
	45	1879.40	6.56E+00	6.18	4.24E-03	3.26E-04
	46	1897.31	5.00E+00	4.47	4.22E-03	3.26E-04
	47	1956.91	1.20E+01	12.00	4.16E-03	3.26E-04
	48	2139.09	8.25E+00	7.48	3.99E-03	3.26E-04
	49	2448.39	5.07E+00	6.63	3.83E-03	3.26E-04
	50	2615.21	8.00E+01	17.89	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 : 6/15/2016 7:19:55PM

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

Analysis Report for 1606040-11

CP-5024 10-15

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	1	46.71	1.34E+02	62.70	4.33E+01	8.35E+00	9.11E+01	6.33E+01
	2	76.71	9.99E+02	136.01			9.99E+02	1.36E+02
m	3	87.72	1.28E+02	56.89			1.28E+02	5.69E+01
m	4	90.80	1.73E+02	55.14			1.73E+02	5.51E+01
	5	154.73	5.59E+01	68.79			5.59E+01	6.88E+01
	6	186.33	2.14E+02	72.84	5.81E+01	8.50E+00	1.56E+02	7.33E+01
	7	210.05	5.27E+01	54.40			5.27E+01	5.44E+01
	8	239.74	8.82E+02	86.99	1.81E+01	5.76E+00	8.63E+02	8.72E+01
	9	274.59	1.63E+02	107.52			1.63E+02	1.08E+02
	10	295.84	1.87E+02	62.38	1.02E+00	5.38E+00	1.86E+02	6.26E+01
	11	338.79	1.22E+02	49.11	3.86E+00	4.98E+00	1.18E+02	4.94E+01
	12	352.47	3.42E+02	62.39	7.25E+00	4.86E+00	3.35E+02	6.26E+01
	13	445.56	2.96E+01	28.58			2.96E+01	2.86E+01
	14	463.82	4.66E+01	26.34			4.66E+01	2.63E+01
	15	522.32	3.36E+01	28.71			3.36E+01	2.87E+01
M	16	571.83	1.27E+01	13.11			1.27E+01	1.31E+01
m	17	583.79	2.32E+02	36.17	6.11E+00	3.78E+00	2.26E+02	3.64E+01
	18	610.03	2.63E+02	62.85	6.74E+00	3.64E+00	2.56E+02	6.30E+01
	19	727.46	6.32E+01	33.48			6.32E+01	3.35E+01
	20	753.46	5.25E+01	33.92			5.25E+01	3.39E+01
	21	787.23	2.19E+01	23.63			2.19E+01	2.36E+01
	22	795.17	6.36E+01	28.77			6.36E+01	2.88E+01
M	23	857.52	1.49E+01	14.74			1.49E+01	1.47E+01
m	24	861.04	4.44E+01	21.34			4.44E+01	2.13E+01
	25	911.89	1.59E+02	38.42	4.21E+00	2.98E+00	1.55E+02	3.85E+01
	26	969.84	1.02E+02	40.15			1.02E+02	4.01E+01
	27	1070.33	1.83E+01	22.00			1.83E+01	2.20E+01
	28	1088.29	2.07E+01	25.38			2.07E+01	2.54E+01
	29	1110.18	1.75E+01	22.36			1.75E+01	2.24E+01
	30	1120.47	5.50E+01	24.08			5.50E+01	2.41E+01
	31	1343.99	1.85E+01	14.56			1.85E+01	1.46E+01
	32	1351.49	9.50E+00	10.00			9.50E+00	1.00E+01
	33	1379.22	3.05E+01	19.01			3.05E+01	1.90E+01
M	34	1461.50	5.92E+02	49.69	6.83E+00	2.10E+00	5.85E+02	4.97E+01
m	35	1466.14	1.05E+01	9.96			1.05E+01	9.96E+00
	36	1571.98	1.32E+01	8.72			1.32E+01	8.72E+00
	37	1594.66	6.75E+00	8.44			6.75E+00	8.44E+00
	38	1600.90	7.39E+00	6.71			7.39E+00	6.71E+00
	39	1711.99	8.58E+00	8.94			8.58E+00	8.94E+00
	40	1717.65	4.50E+00	6.36			4.50E+00	6.36E+00
	41	1730.39	1.46E+01	12.03			1.46E+01	1.20E+01
	42	1765.04	3.80E+01	17.09	1.66E+00	1.65E+00	3.63E+01	1.72E+01
	43	1839.41	6.30E+00	8.49			6.30E+00	8.49E+00
	44	1870.30	1.60E+01	8.00			1.60E+01	8.00E+00
	45	1879.40	6.56E+00	6.18			6.56E+00	6.18E+00
	46	1897.31	5.00E+00	4.47			5.00E+00	4.47E+00
	47	1956.91	1.20E+01	12.00			1.20E+01	1.20E+01
	48	2139.09	8.25E+00	7.48			8.25E+00	7.48E+00
	49	2448.39	5.07E+00	6.63			5.07E+00	6.63E+00
	50	2615.21	8.00E+01	17.89	4.95E+00	1.35E+00	7.50E+01	1.79E+01

Analysis Report for 1606040-11

CP-5024 10-15

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 : 6/15/2016 7:19:55PM

Ref. Peak Energy : 0.00

Reference Date :

Peak Ratio : 0.00

Uncertainty : 0.00

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

Corrected Area is: Original * Peak Ratio - Background

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	1	46.71	1.34E+02	62.70	4.33E+01	8.35E+00	9.11E+01	6.33E+01
	2	76.71	9.99E+02	136.01			9.99E+02	1.36E+02
m	3	87.72	1.28E+02	56.89			1.28E+02	5.69E+01
m	4	90.80	1.73E+02	55.14			1.73E+02	5.51E+01
	5	154.73	5.59E+01	68.79			5.59E+01	6.88E+01
	6	186.33	2.14E+02	72.84	5.81E+01	8.50E+00	1.56E+02	7.33E+01
	7	210.05	5.27E+01	54.40			5.27E+01	5.44E+01
	8	239.74	8.82E+02	86.99	1.81E+01	5.76E+00	8.63E+02	8.72E+01
	9	274.59	1.63E+02	107.52			1.63E+02	1.08E+02
	10	295.84	1.87E+02	62.38	1.02E+00	5.38E+00	1.86E+02	6.26E+01
	11	338.79	1.22E+02	49.11	3.86E+00	4.98E+00	1.18E+02	4.94E+01
	12	352.47	3.42E+02	62.39	7.25E+00	4.86E+00	3.35E+02	6.26E+01
	13	445.56	2.96E+01	28.58			2.96E+01	2.86E+01
	14	463.82	4.66E+01	26.34			4.66E+01	2.63E+01
	15	522.32	3.36E+01	28.71			3.36E+01	2.87E+01
M	16	571.83	1.27E+01	13.11			1.27E+01	1.31E+01
m	17	583.79	2.32E+02	36.17	6.11E+00	3.78E+00	2.26E+02	3.64E+01
	18	610.03	2.63E+02	62.85	6.74E+00	3.64E+00	2.56E+02	6.30E+01
	19	727.46	6.32E+01	33.48			6.32E+01	3.35E+01
	20	753.46	5.25E+01	33.92			5.25E+01	3.39E+01
	21	787.23	2.19E+01	23.63			2.19E+01	2.36E+01
	22	795.17	6.36E+01	28.77			6.36E+01	2.88E+01
M	23	857.52	1.49E+01	14.74			1.49E+01	1.47E+01
m	24	861.04	4.44E+01	21.34			4.44E+01	2.13E+01
	25	911.89	1.59E+02	38.42	4.21E+00	2.98E+00	1.55E+02	3.85E+01
	26	969.84	1.02E+02	40.15			1.02E+02	4.01E+01
	27	1070.33	1.83E+01	22.00			1.83E+01	2.20E+01
	28	1088.29	2.07E+01	25.38			2.07E+01	2.54E+01
	29	1110.18	1.75E+01	22.36			1.75E+01	2.24E+01
	30	1120.47	5.50E+01	24.08			5.50E+01	2.41E+01
	31	1343.99	1.85E+01	14.56			1.85E+01	1.46E+01
	32	1351.49	9.50E+00	10.00			9.50E+00	1.00E+01

Analysis Report for 1606040-11
CP-5024 10-15

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	33	1379.22	3.05E+01	19.01			3.05E+01	1.90E+01
M	34	1461.50	5.92E+02	49.69	6.83E+00	2.10E+00	5.85E+02	4.97E+01
m	35	1466.14	1.05E+01	9.96			1.05E+01	9.96E+00
	36	1571.98	1.32E+01	8.72			1.32E+01	8.72E+00
	37	1594.66	6.75E+00	8.44			6.75E+00	8.44E+00
	38	1600.90	7.39E+00	6.71			7.39E+00	6.71E+00
	39	1711.99	8.58E+00	8.94			8.58E+00	8.94E+00
	40	1717.65	4.50E+00	6.36			4.50E+00	6.36E+00
	41	1730.39	1.46E+01	12.03			1.46E+01	1.20E+01
	42	1765.04	3.80E+01	17.09	1.66E+00	1.65E+00	3.63E+01	1.72E+01
	43	1839.41	6.30E+00	8.49			6.30E+00	8.49E+00
	44	1870.30	1.60E+01	8.00			1.60E+01	8.00E+00
	45	1879.40	6.56E+00	6.18			6.56E+00	6.18E+00
	46	1897.31	5.00E+00	4.47			5.00E+00	4.47E+00
	47	1956.91	1.20E+01	12.00			1.20E+01	1.20E+01
	48	2139.09	8.25E+00	7.48			8.25E+00	7.48E+00
	49	2448.39	5.07E+00	6.63			5.07E+00	6.63E+00
	50	2615.21	8.00E+01	17.89	4.95E+00	1.35E+00	7.50E+01	1.79E+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	0.927	1460.81 *	10.67	3.11E+01	3.77E+00
CD-109	0.985	88.03 *	3.72	3.46E+00	1.59E+00
SN-126	0.996	87.57 *	37.00	3.41E-01	1.55E-01
ND-147	0.635	91.11 *	28.90	1.36E+00	4.52E-01
		531.02	13.10		
TL-208	0.944	583.14 *	30.22	2.07E+00	3.82E-01
		860.37 *	4.48	3.73E+00	1.82E+00
		2614.66 *	35.85	1.55E+00	3.94E-01
PB-210	0.993	46.50 *	4.25	3.57E+00	2.50E+00
BI-212	0.755	727.17 *	11.80	1.76E+00	9.47E-01
		1620.62	2.75		
BI-214	0.875	609.31 *	46.30	1.58E+00	4.15E-01
		1120.29 *	15.10	1.69E+00	7.53E-01

Analysis Report for 1606040-11
CP-5024 10-15

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
BI-214	0.875	1764.49 *	15.80	1.47E+00	7.05E-01
		2204.22	4.98		
PB-214	0.948	295.21 *	19.19	1.64E+00	5.66E-01
		351.92 *	37.19	1.72E+00	3.50E-01
RA-226	0.998	186.21 *	3.28	6.00E+00	1.13E+01
AC-228	0.917	338.32 *	11.40	1.92E+00	8.18E-01
		911.07 *	27.70	2.20E+00	5.80E-01
		969.11 *	16.60	2.53E+00	1.02E+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 : 6/15/2016 7:19:55PM
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	76.71	2.77554E-01	6.81		
5	154.73	1.55304E-02	61.52		
7	210.05	1.46427E-02	51.60	Tol.	CM-243
8	239.74	2.39836E-01	5.05		
9	274.59	4.52491E-02	33.00	Sum	
13	445.56	8.22104E-03	48.29		
14	463.82	1.29553E-02	28.24	Tol.	SB-125
15	522.32	9.34414E-03	42.67		
M 16	571.83	3.52946E-03	51.61		
20	753.46	1.45910E-02	32.28		
21	787.23	6.09127E-03	53.87		
22	795.17	1.76760E-02	22.60	Tol.	CS-134
M 23	857.52	4.14062E-03	49.44		
27	1070.33	5.07338E-03	60.23		
28	1088.29	5.73770E-03	61.43		
29	1110.18	4.84801E-03	64.06		
31	1343.99	5.12897E-03	39.43		
32	1351.49	2.63889E-03	52.63		
33	1379.22	8.46605E-03	31.19		
m 35	1466.14	2.91188E-03	47.52		
36	1571.98	3.65741E-03	33.11		

Analysis Report for 1606040-11
CP-5024 10-15

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
37	1594.66	1.87500E-03	62.53		
38	1600.90	2.05247E-03	45.39		
39	1711.99	2.38426E-03	52.10		
40	1717.65	1.25000E-03	70.71		
41	1730.39	4.04762E-03	41.28	Sum	
43	1839.41	1.75000E-03	67.34		
44	1870.30	4.44444E-03	25.00		
45	1879.40	1.82292E-03	47.12		
46	1897.31	1.38889E-03	44.72		
47	1956.91	3.33333E-03	50.00		
48	2139.09	2.29167E-03	45.35		
49	2448.39	1.40873E-03	65.40		

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\ApexRoof\Countroom\Library\TMA2.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.92	1460.81 *	10.67	3.11E+01	3.77E+00
CD-109	0.98	88.03 *	3.72	3.46E+00	1.59E+00
SN-126	0.99	87.57 *	37.00	3.41E-01	1.55E-01
ND-147	0.63	91.11 *	28.90	1.36E+00	4.52E-01
		531.02 *	13.10		
TL-208	0.94	583.14 *	30.22	2.07E+00	3.82E-01
		860.37 *	4.48	3.73E+00	1.82E+00
		2614.66 *	35.85	1.55E+00	3.94E-01
PB-210	0.99	46.50 *	4.25	3.57E+00	2.50E+00
BI-212	0.75	727.17 *	11.80	1.76E+00	9.47E-01
		1620.62 *	2.75		
BI-214	0.87	609.31 *	46.30	1.58E+00	4.15E-01
		1120.29 *	15.10	1.69E+00	7.53E-01
		1764.49 *	15.80	1.47E+00	7.05E-01
		2204.22 *	4.98		
PB-214	0.94	295.21 *	19.19	1.64E+00	5.66E-01

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Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
PB-214	0.94	351.92 *	37.19	1.72E+00	3.50E-01
RA-226	0.99	186.21 *	3.28	6.00E+00	1.13E+01
AC-228	0.91	338.32 *	11.40	1.92E+00	8.18E-01
		911.07 *	27.70	2.20E+00	5.80E-01
		969.11 *	16.60	2.53E+00	1.02E+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	0.927	3.11E+01	3.77E+00
?	CD-109	0.985	3.46E+00	1.59E+00
?	SN-126	0.996	3.41E-01	1.55E-01
	ND-147	0.635	1.36E+00	4.52E-01
	TL-208	0.944	1.86E+00	2.71E-01
	PB-210	0.993	3.57E+00	2.50E+00
	BI-212	0.755	1.76E+00	9.47E-01
	BI-214	0.875	1.58E+00	3.23E-01
	PB-214	0.948	1.70E+00	2.97E-01
	RA-226	0.998	6.00E+00	1.13E+01
	AC-228	0.917	2.18E+00	4.29E-01

? = nuclide is part of an undetermined solution

X = nuclide rejected by the interference analysis

@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 2.000sigma

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UNIDENTIFIED PEAKS

Peak Locate Performed on : 6/15/2016 7:19:55PM
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	76.71	2.77554E-01	6.81		
5	154.73	1.55304E-02	61.52		
7	210.05	1.46427E-02	51.60	Tol.	CM-243
8	239.74	2.39836E-01	5.05		
9	274.59	4.52491E-02	33.00	Sum	
13	445.56	8.22104E-03	48.29		
14	463.82	1.29553E-02	28.24	Tol.	SB-125
15	522.32	9.34414E-03	42.67		
M 16	571.83	3.52946E-03	51.61		
20	753.46	1.45910E-02	32.28		
21	787.23	6.09127E-03	53.87		
22	795.17	1.76760E-02	22.60	Tol.	CS-134
M 23	857.52	4.14062E-03	49.44		
27	1070.33	5.07338E-03	60.23		
28	1088.29	5.73770E-03	61.43		
29	1110.18	4.84801E-03	64.06		
31	1343.99	5.12897E-03	39.43		
32	1351.49	2.63889E-03	52.63		
33	1379.22	8.46605E-03	31.19		
m 35	1466.14	2.91188E-03	47.52		
36	1571.98	3.65741E-03	33.11		
37	1594.66	1.87500E-03	62.53		
38	1600.90	2.05247E-03	45.39		
39	1711.99	2.38426E-03	52.10		
40	1717.65	1.25000E-03	70.71		
41	1730.39	4.04762E-03	41.28	Sum	
43	1839.41	1.75000E-03	67.34		
44	1870.30	4.44444E-03	25.00		
45	1879.40	1.82292E-03	47.12		
46	1897.31	1.38889E-03	44.72		
47	1956.91	3.33333E-03	50.00		
48	2139.09	2.29167E-03	45.35		
49	2448.39	1.40873E-03	65.40		

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

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	8.24E-01	1.38E+00	1.38E+00
+	NA-22	1274.54	99.94	-1.29E-02	1.44E-01	1.44E-01
+	NA-24	1368.53	99.99	-2.48E+04	2.49E+05	2.80E+05
		2754.09	99.86	7.15E+04		2.49E+05
+	AL-26	1808.65	99.76	-2.93E-02	7.82E-02	7.82E-02
+	K-40	1460.81	*	10.67	3.11E+01	1.69E+00
+	@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88	94.40	-7.25E-02	1.23E-01	1.23E-01
		78.34	96.00	1.72E-01		1.58E-01
+	SC-46	889.25	99.98	2.99E-03	1.40E-01	1.40E-01
		1120.51	99.99	2.31E-01		2.29E-01
+	V-48	983.52	99.98	-3.73E-02	2.13E-01	2.13E-01
		1312.10	97.50	-9.66E-02		2.43E-01
+	CR-51	320.08	9.83	1.07E-01	1.17E+00	1.17E+00
+	MN-54	834.83	99.97	-2.41E-02	1.43E-01	1.43E-01
+	CO-56	846.75	99.96	3.79E-04	1.40E-01	1.40E-01
		1037.75	14.03	-3.75E-02		1.06E+00
		1238.25	67.00	1.51E-01		3.38E-01
		1771.40	15.51	1.08E-01		5.58E-01
		2598.48	16.90	-9.03E-02		4.57E-01
+	CO-57	122.06	85.51	1.73E-02	9.40E-02	9.40E-02
		136.48	10.60	2.24E-01		8.39E-01
+	CO-58	810.76	99.40	-2.69E-02	1.43E-01	1.43E-01
+	FE-59	1099.22	56.50	3.04E-02	3.23E-01	3.23E-01
		1291.56	43.20	-1.64E-01		3.61E-01
+	CO-60	1173.22	100.00	-2.83E-02	1.31E-01	1.57E-01
		1332.49	100.00	-1.26E-02		1.31E-01
+	ZN-65	1115.52	50.75	-1.12E-02	3.07E-01	3.07E-01
+	GA-67	93.31	35.70	7.33E+00	5.67E+00	5.67E+00
		208.95	2.24	4.09E+01		7.43E+01
		300.22	16.00	4.54E+00		1.07E+01
+	SE-75	121.11	16.70	4.62E-03	1.50E-01	4.96E-01

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Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
SE-75	136.00	59.20	-1.51E-01	1.50E-01	1.50E-01
	264.65	59.80	3.23E-02		1.55E-01
	279.53	25.20	2.36E-01		4.39E-01
	400.65	11.40	7.84E-02		8.35E-01
+ RB-82	776.52	13.00	-6.94E-01	1.33E+00	1.33E+00
+ RB-83	520.41	46.00	7.15E-02	2.74E-01	2.74E-01
	529.64	30.30	-4.42E-02		3.82E-01
	552.65	16.40	-6.37E-02		6.70E-01
+ KR-85	513.99	0.43	6.51E+01	3.89E+01	3.89E+01
+ SR-85	513.99	99.27	3.27E-01	1.95E-01	1.95E-01
+ Y-88	898.02	93.40	-7.54E-02	1.25E-01	1.42E-01
	1836.01	99.38	1.44E-02		1.25E-01
+ NB-93M	16.57	9.43	-1.96E+02	1.20E+02	1.20E+02
+ NB-94	702.63	100.00	8.47E-03	1.16E-01	1.48E-01
	871.10	100.00	-2.85E-03		1.16E-01
+ NB-95	765.79	99.81	-1.85E-03	2.00E-01	2.00E-01
+ NB-95M	235.69	25.00	-1.70E-01	4.98E+00	4.98E+00
+ ZR-95	724.18	43.70	-1.08E-02	2.89E-01	3.60E-01
	756.72	55.30	3.09E-02		2.89E-01
+ MO-99	181.06	6.20	1.58E+01	2.74E+01	3.76E+01
	739.58	12.80	6.66E+00		2.74E+01
	778.00	4.50	-1.20E+01		7.99E+01
+ RU-103	497.08	89.00	6.52E-03	1.50E-01	1.50E-01
+ RU-106	621.84	9.80	7.50E-02	1.15E+00	1.15E+00
+ AG-108M	433.93	89.90	2.10E-02	1.20E-01	1.20E-01
	614.37	90.40	-8.01E-01		1.34E-01
	722.95	90.50	-6.92E-03		1.45E-01
+ CD-109	88.03	* 3.72	3.46E+00	6.81E+00	6.81E+00
+ AG-110M	657.75	93.14	-6.77E-02	1.21E-01	1.21E-01
	677.61	10.53	3.38E-01		1.23E+00
	706.67	16.46	4.86E-02		8.93E-01
	763.93	21.98	4.86E-02		6.94E-01
	884.67	71.63	1.56E-02		1.57E-01
	1384.27	23.94	-1.18E-02		4.75E-01
+ CD-113M	263.70	0.02	1.12E+02	3.75E+02	3.75E+02
+ SN-113	255.12	1.93	-1.64E+00	1.56E-01	4.89E+00
	391.69	64.90	4.20E-02		1.56E-01
+ TE123M	159.00	84.10	6.21E-03	1.08E-01	1.08E-01
+ SB-124	602.71	97.87	1.60E-02	1.51E-01	1.51E-01
	645.85	7.26	-2.33E-02		1.89E+00
	722.78	11.10	-6.57E-02		1.38E+00
	1691.02	49.00	2.97E-02		2.47E-01
	35.49	6.49	-3.19E-01	4.53E+00	4.53E+00
+ SB-125	176.33	6.89	1.44E-01	3.64E-01	1.24E+00
	427.89	29.33	-7.20E-02		3.64E-01
	463.38	10.35	9.91E-01		1.14E+00
	600.56	17.80	1.52E-01		6.99E-01
	635.90	11.32	-4.14E-01		1.01E+00

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	SB-126	414.70	83.30	8.52E-03	2.64E-01	2.64E-01
		666.33	99.60	1.23E-01		2.90E-01
		695.00	99.60	5.95E-02		2.67E-01
		720.50	53.80	-2.13E-02		4.73E-01
+	SN-126	87.57	* 37.00	3.41E-01	6.71E-01	6.71E-01
+	SB-127	473.00	25.00	-3.16E-01	3.66E+00	4.62E+00
		685.20	35.70	-1.27E+00		3.66E+00
		783.80	14.70	1.84E+00		1.04E+01
+	I-129	29.78	57.00	-1.66E-01	8.48E-01	8.48E-01
		33.60	13.20	-3.97E-01		2.26E+00
		39.58	7.52	1.45E+00		2.70E+00
+	I-131	284.30	6.05	1.07E+00	3.18E-01	4.58E+00
		364.48	81.20	-1.76E-01		3.18E-01
		636.97	7.26	-2.29E+00		4.67E+00
		722.89	1.80	-1.09E+00		2.29E+01
+	TE-132	49.72	13.10	4.15E+00	1.73E+00	1.74E+01
		228.16	88.00	-1.77E-02		1.73E+00
+	BA-133	81.00	33.00	-1.18E+00	1.81E-01	3.41E-01
		302.84	17.80	2.57E-01		5.25E-01
		356.01	60.00	-4.32E-01		1.81E-01
+	I-133	529.87	86.30	-5.52E+02	4.77E+03	4.77E+03
+	XE-133	81.00	38.00	-5.88E+00	1.70E+00	1.70E+00
+	CS-134	563.23	8.38	7.51E-01	1.35E-01	1.41E+00
		569.32	15.43	2.56E-02		6.74E-01
		604.70	97.60	2.57E-02		1.35E-01
		795.84	85.40	1.51E-01		1.81E-01
		801.93	8.73	9.03E-02		1.29E+00
+	CS-135	268.24	16.00	1.41E-01	6.40E-01	6.40E-01
+	I-135	1131.51	22.50	-9.61E+13	1.30E+14	1.97E+14
		1260.41	28.60	2.25E+11		1.30E+14
		1678.03	9.54	1.90E+13		3.01E+14
+	CS-136	153.22	7.46	9.27E-01	2.61E-01	2.47E+00
		163.89	4.61	1.26E+00		3.69E+00
		176.55	13.56	1.45E-01		1.25E+00
		273.65	12.66	-1.19E+00		1.53E+00
		340.57	48.50	9.33E-01		5.56E-01
		818.50	99.70	3.05E-02		2.61E-01
		1048.07	79.60	1.27E-01		3.73E-01
		1235.34	19.70	-1.74E+00		1.82E+00
+	CS-137	661.65	85.12	-8.27E-02	1.36E-01	1.36E-01
+	LA-138	788.74	34.00	6.34E-02	1.76E-01	4.21E-01
		1435.80	66.00	-3.39E-03		1.76E-01
+	CE-139	165.85	80.35	-1.86E-02	1.12E-01	1.12E-01
+	BA-140	162.64	6.70	-1.01E+00	9.16E-01	2.52E+00
		304.84	4.50	-3.03E+00		3.68E+00
		423.70	3.20	1.72E+00		6.70E+00
		437.55	2.00	3.66E+00		1.06E+01
		537.32	25.00	3.20E-02		9.16E-01
+	LA-140	328.77	20.50	1.12E-01	2.25E-01	9.97E-01

Analysis Report for 1606040-11
CP-5024 10-15

Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
LA-140	487.03	45.50	-5.43E-03	2.25E-01	4.62E-01
	815.85	23.50	4.41E-02		1.14E+00
	1596.49	95.49	-2.07E-01		2.25E-01
+ CE-141	145.44	48.40	-3.97E-02	2.35E-01	2.35E-01
+ CE-143	57.36	11.80	-3.47E+02	2.46E+02	7.97E+02
	293.26	42.00	2.66E+02		2.46E+02
	664.55	5.20	8.50E+02		2.05E+03
+ CE-144	133.54	10.80	5.06E-03	8.05E-01	8.05E-01
+ PM-144	476.78	42.00	9.36E-02	1.14E-01	2.86E-01
	618.01	98.60	-1.45E-02		1.14E-01
	696.49	99.49	-9.18E-02		1.24E-01
+ PM-145	36.85	21.70	-3.46E-01	5.69E-01	1.05E+00
	37.36	39.70	-2.88E-01		5.69E-01
	42.30	15.10	-2.48E-01		1.16E+00
	72.40	2.31	-2.42E+01		5.33E+00
+ PM-146	453.90	39.94	2.55E-02	2.70E-01	2.70E-01
	735.90	14.01	-3.94E-01		7.91E-01
	747.13	13.10	-1.63E-01		8.91E-01
+ ND-147	91.11	* 28.90	1.36E+00	1.90E+00	1.97E+00
	531.02	13.10	1.73E-01		1.90E+00
+ PM-149	285.90	3.10	3.25E+01	1.71E+02	1.71E+02
+ EU-152	121.78	20.50	6.97E-02	3.79E-01	3.79E-01
	244.69	5.40	-2.71E-02		1.94E+00
	344.27	19.13	2.36E-02		4.60E-01
	778.89	9.20	2.67E-01		1.42E+00
	964.01	10.40	-4.01E-01		1.58E+00
	1085.78	7.22	4.32E-01		2.06E+00
	1112.02	9.60	-5.71E-02		1.73E+00
	1407.95	14.94	-1.09E-01		7.88E-01
+ GD-153	97.43	31.30	-1.95E-01	2.83E-01	2.83E-01
	103.18	22.20	1.45E-01		3.91E-01
+ EU-154	123.07	40.50	1.44E-02	1.94E-01	1.94E-01
	723.30	19.70	-3.19E-02		6.70E-01
	873.19	11.50	3.81E-01		1.11E+00
	996.32	10.30	4.70E-02		1.24E+00
	1004.76	17.90	6.06E-01		9.17E-01
	1274.45	35.50	-3.62E-02		4.02E-01
+ EU-155	86.50	30.90	7.24E-01	3.84E-01	3.84E-01
	105.30	20.70	-9.16E-02		4.10E-01
+ EU-156	811.77	10.40	-4.33E-01	2.23E+00	2.23E+00
	1153.47	7.20	-1.62E+00		3.83E+00
	1230.71	8.90	1.09E+00		4.00E+00
+ HO-166M	184.41	72.60	3.26E-01	1.64E-01	1.64E-01
	280.45	29.60	1.81E-01		3.38E-01
	410.94	11.10	-1.64E-01		9.58E-01
	711.69	54.10	-1.08E-01		2.15E-01
+ TM-171	66.72	0.14	-1.42E+02	8.72E+01	8.72E+01
+ HF-172	81.75	4.52	-7.66E+00	7.11E-01	2.21E+00
	125.81	11.30	1.68E-01		7.11E-01

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	LU-172	181.53	20.60	7.40E-01	9.09E-01	1.60E+00
		810.06	16.63	-2.07E-01		2.96E+00
		912.12	15.25	1.70E+01		7.04E+00
		1093.66	62.50	-7.81E-02		9.09E-01
+	LU-173	100.72	5.24	-2.87E-01	5.25E-01	1.60E+00
		272.11	21.20	5.66E-01		5.25E-01
+	HF-175	343.40	84.00	9.91E-03	1.25E-01	1.25E-01
+	LU-176	88.34	13.30	1.49E+00	8.81E-02	9.02E-01
		201.83	86.00	-1.46E-02		1.04E-01
		306.78	94.00	6.03E-03		8.81E-02
+	TA-182	67.75	41.20	-1.80E-01	3.05E-01	3.05E-01
		1121.30	34.90	6.20E-01		6.42E-01
		1189.05	16.23	-2.43E-01		1.02E+00
		1221.41	26.98	-1.49E-01		7.02E-01
		1231.02	11.44	5.04E-01		1.84E+00
+	IR-192	308.46	29.68	7.05E-03	2.40E-01	3.18E-01
		468.07	48.10	-7.76E-02		2.40E-01
+	HG-203	279.19	77.30	4.65E-02	1.60E-01	1.60E-01
+	BI-207	569.67	97.72	-4.18E-03	1.00E-01	1.00E-01
		1063.62	74.90	8.11E-03		1.82E-01
+	TL-208	583.14	* 30.22	2.07E+00	2.14E-01	8.63E-01
		860.37	* 4.48	3.73E+00		3.25E+00
		2614.66	* 35.85	1.55E+00		2.14E-01
+	BI-210M	262.00	45.00	-5.19E-02	1.91E-01	1.91E-01
		300.00	23.00	1.89E-01		4.45E-01
+	PB-210	46.50	* 4.25	3.57E+00	3.99E+00	3.99E+00
+	PB-211	404.84	2.90	2.35E+00	3.29E+00	3.29E+00
		831.96	2.90	-8.99E-01		4.45E+00
+	BI-212	727.17	* 11.80	1.76E+00	1.43E+00	1.43E+00
		1620.62	2.75	2.41E+00		4.44E+00
+	PB-212	238.63	44.60	1.90E+00	4.65E-01	4.65E-01
		300.09	3.41	1.28E+00		3.00E+00
+	BI-214	609.31	* 46.30	1.58E+00	5.69E-01	5.69E-01
		1120.29	* 15.10	1.69E+00		1.04E+00
		1764.49	* 15.80	1.47E+00		9.24E-01
		2204.22	4.98	1.03E+00		2.88E+00
+	PB-214	295.21	* 19.19	1.64E+00	4.42E-01	8.40E-01
		351.92	* 37.19	1.72E+00		4.42E-01
+	RN-219	401.80	6.50	-1.14E+00	1.23E+00	1.23E+00
+	RA-223	323.87	3.88	-3.70E-01	2.23E+00	2.23E+00
+	RA-224	240.98	3.95	3.03E+01	5.54E+00	5.54E+00
+	RA-225	40.00	31.00	6.38E-01	1.18E+00	1.18E+00
+	RA-226	186.21	* 3.28	6.00E+00	4.45E+00	4.45E+00
+	TH-227	50.10	8.40	3.83E-01	8.53E-01	1.61E+00
		236.00	11.50	-2.91E-02		8.53E-01
		256.20	6.30	8.28E-02		1.42E+00
+	AC-228	338.32	* 11.40	1.92E+00	7.27E-01	1.23E+00
		911.07	* 27.70	2.20E+00		7.27E-01

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	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	AC-228	969.11	*	16.60	2.53E+00	7.27E-01	1.49E+00
+	TH-230	48.44		16.90	2.33E-02	8.99E-01	8.99E-01
		62.85		4.60	5.83E+00		2.99E+00
		67.67		0.37	-1.85E+01		3.13E+01
+	PA-231	283.67		1.60	-1.08E-01	4.05E+00	5.66E+00
		302.67		2.30	1.98E+00		4.05E+00
+	TH-231	25.64		14.70	-4.47E+01	1.63E+00	9.52E+00
		84.21		6.40	-3.05E+00		1.63E+00
+	PA-233	311.98		38.60	-6.05E-02	3.00E-01	3.00E-01
+	PA-234	131.20		20.40	2.72E-01	4.34E-01	4.34E-01
		733.99		8.80	1.14E-01		1.22E+00
		946.00		12.00	-9.71E-02		1.07E+00
+	PA-234M	1001.03		0.92	-4.32E-01	1.61E+01	1.61E+01
+	TH-234	63.29		3.80	3.17E+00	3.54E+00	3.54E+00
+	U-235	143.76		10.50	1.88E-01	8.30E-01	8.30E-01
		163.35		4.70	6.16E-01		1.80E+00
		205.31		4.70	6.68E-01		1.96E+00
+	NP-237	86.50		12.60	1.77E+00	9.38E-01	9.38E-01
+	NP-239	106.10		22.70	-4.09E+00	1.83E+01	1.83E+01
		228.18		10.70	-4.28E-01		4.20E+01
		277.60		14.10	1.50E+01		3.51E+01
+	AM-241	59.54		35.90	-1.41E-01	3.36E-01	3.36E-01
+	AM-243	74.67		66.00	-6.42E-01	2.27E-01	2.27E-01
+	CM-243	209.75		3.29	2.21E+00	7.20E-01	3.02E+00
		228.14		10.60	-8.79E-03		8.63E-01
		277.60		14.00	3.08E-01		7.20E-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 1606040-11
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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	1.38E+00	1.38E+00	8.24E-01	6.52E-01
NA-22	1274.54	99.94	1.44E-01	1.44E-01	-1.29E-02	6.48E-02
NA-24	1368.53	99.99	2.80E+05	2.49E+05	-2.48E+04	1.23E+05
	2754.09	99.86	2.49E+05		7.15E+04	1.00E+05
AL-26	1808.65	99.76	7.82E-02	7.82E-02	-2.93E-02	3.03E-02
+ K-40	1460.81	* 10.67	1.69E+00	1.69E+00	3.11E+01	7.71E-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	1.23E-01	1.23E-01	-7.25E-02	5.97E-02
	78.34	96.00	1.58E-01		1.72E-01	7.74E-02
SC-46	889.25	99.98	1.40E-01	1.40E-01	2.99E-03	6.42E-02
	1120.51	99.99	2.29E-01		2.31E-01	1.08E-01
V-48	983.52	99.98	2.13E-01	2.13E-01	-3.73E-02	9.63E-02
	1312.10	97.50	2.43E-01		-9.66E-02	1.09E-01
CR-51	320.08	9.83	1.17E+00	1.17E+00	1.07E-01	5.51E-01
MN-54	834.83	99.97	1.43E-01	1.43E-01	-2.41E-02	6.64E-02
CO-56	846.75	99.96	1.40E-01	1.40E-01	3.79E-04	6.44E-02
	1037.75	14.03	1.06E+00		-3.75E-02	4.81E-01
	1238.25	67.00	3.38E-01		1.51E-01	1.58E-01
	1771.40	15.51	5.58E-01		1.08E-01	2.16E-01
	2598.48	16.90	4.57E-01		-9.03E-02	1.62E-01
CO-57	122.06	85.51	9.40E-02	9.40E-02	1.73E-02	4.53E-02
	136.48	10.60	8.39E-01		2.24E-01	4.05E-01
CO-58	810.76	99.40	1.43E-01	1.43E-01	-2.69E-02	6.62E-02
FE-59	1099.22	56.50	3.23E-01	3.23E-01	3.04E-02	1.48E-01
	1291.56	43.20	3.61E-01		-1.64E-01	1.61E-01
CO-60	1173.22	100.00	1.57E-01	1.31E-01	-2.83E-02	7.20E-02
	1332.49	100.00	1.31E-01		-1.26E-02	5.81E-02
ZN-65	1115.52	50.75	3.07E-01	3.07E-01	-1.12E-02	1.41E-01
GA-67	93.31	35.70	5.67E+00	5.67E+00	7.33E+00	2.77E+00
	208.95	2.24	7.43E+01		4.09E+01	3.58E+01
	300.22	16.00	1.07E+01		4.54E+00	5.09E+00
SE-75	121.11	16.70	4.96E-01	1.50E-01	4.62E-03	2.39E-01
	136.00	59.20	1.50E-01		-1.51E-01	7.25E-02
	264.65	59.80	1.55E-01		3.23E-02	7.35E-02
	279.53	25.20	4.39E-01		2.36E-01	2.10E-01
	400.65	11.40	8.35E-01		7.84E-02	3.91E-01
RB-82	776.52	13.00	1.33E+00	1.33E+00	-6.94E-01	6.15E-01
RB-83	520.41	46.00	2.74E-01	2.74E-01	7.15E-02	1.28E-01
	529.64	30.30	3.82E-01		-4.42E-02	1.78E-01
	552.65	16.40	6.70E-01		-6.37E-02	3.11E-01
KR-85	513.99	0.43	3.89E+01	3.89E+01	6.51E+01	1.87E+01
SR-85	513.99	99.27	1.95E-01	1.95E-01	3.27E-01	9.38E-02
Y-88	898.02	93.40	1.42E-01	1.25E-01	-7.54E-02	6.51E-02
	1836.01	99.38	1.25E-01		1.44E-02	5.28E-02
NB-93M	16.57	9.43	1.20E+02	1.20E+02	-1.96E+02	5.48E+01
NB-94	702.63	100.00	1.48E-01	1.16E-01	8.47E-03	6.98E-02
	871.10	100.00	1.16E-01		-2.85E-03	5.30E-02
NB-95	765.79	99.81	2.00E-01	2.00E-01	-1.85E-03	9.39E-02
NB-95M	235.69	25.00	4.98E+00	4.98E+00	-1.70E-01	2.39E+00
ZR-95	724.18	43.70	3.60E-01	2.89E-01	-1.08E-02	1.68E-01
	756.72	55.30	2.89E-01		3.09E-02	1.35E-01

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
MO-99	181.06	6.20	3.76E+01	2.74E+01	1.58E+01	1.81E+01
	739.58	12.80	2.74E+01		6.66E+00	1.27E+01
	778.00	4.50	7.99E+01		-1.20E+01	3.70E+01
RU-103	497.08	89.00	1.50E-01	1.50E-01	6.52E-03	7.05E-02
RU-106	621.84	9.80	1.15E+00	1.15E+00	7.50E-02	5.34E-01
AG-108M	433.93	89.90	1.20E-01	1.20E-01	2.10E-02	5.68E-02
	614.37	90.40	1.34E-01		-8.01E-01	6.25E-02
	722.95	90.50	1.45E-01		-6.92E-03	6.78E-02
+ CD-109	88.03	* 3.72	6.81E+00	6.81E+00	3.46E+00	3.37E+00
AG-110M	657.75	93.14	1.21E-01	1.21E-01	-6.77E-02	5.57E-02
	677.61	10.53	1.23E+00		3.38E-01	5.75E-01
	706.67	16.46	8.93E-01		4.86E-02	4.19E-01
	763.93	21.98	6.94E-01		4.86E-02	3.25E-01
	884.67	71.63	1.57E-01		1.56E-02	7.09E-02
	1384.27	23.94	4.75E-01		-1.18E-02	2.05E-01
CD-113M	263.70	0.02	3.75E+02	3.75E+02	1.12E+02	1.78E+02
SN-113	255.12	1.93	4.89E+00	1.56E-01	-1.64E+00	2.33E+00
	391.69	64.90	1.56E-01		4.20E-02	7.32E-02
TE123M	159.00	84.10	1.08E-01	1.08E-01	6.21E-03	5.21E-02
SB-124	602.71	97.87	1.51E-01	1.51E-01	1.60E-02	7.07E-02
	645.85	7.26	1.89E+00		-2.33E-02	8.80E-01
	722.78	11.10	1.38E+00		-6.57E-02	6.44E-01
	1691.02	49.00	2.47E-01		2.97E-02	1.03E-01
I-125	35.49	6.49	4.53E+00	4.53E+00	-3.19E-01	2.19E+00
SB-125	176.33	6.89	1.24E+00	3.64E-01	1.44E-01	5.95E-01
	427.89	29.33	3.64E-01		-7.20E-02	1.72E-01
	463.38	10.35	1.14E+00		9.91E-01	5.41E-01
	600.56	17.80	6.99E-01		1.52E-01	3.28E-01
	635.90	11.32	1.01E+00		-4.14E-01	4.67E-01
SB-126	414.70	83.30	2.64E-01	2.64E-01	8.52E-03	1.25E-01
	666.33	99.60	2.90E-01		1.23E-01	1.36E-01
	695.00	99.60	2.67E-01		5.95E-02	1.24E-01
	720.50	53.80	4.73E-01		-2.13E-02	2.19E-01
+ SN-126	87.57	* 37.00	6.71E-01	6.71E-01	3.41E-01	3.32E-01
SB-127	473.00	25.00	4.62E+00	3.66E+00	-3.16E-01	2.17E+00
	685.20	35.70	3.66E+00		-1.27E+00	1.70E+00
	783.80	14.70	1.04E+01		1.84E+00	4.86E+00
I-129	29.78	57.00	8.48E-01	8.48E-01	-1.66E-01	4.09E-01
	33.60	13.20	2.26E+00		-3.97E-01	1.09E+00
	39.58	7.52	2.70E+00		1.45E+00	1.31E+00
I-131	284.30	6.05	4.58E+00	3.18E-01	1.07E+00	2.18E+00
	364.48	81.20	3.18E-01		-1.76E-01	1.49E-01
	636.97	7.26	4.67E+00		-2.29E+00	2.16E+00
	722.89	1.80	2.29E+01		-1.09E+00	1.07E+01
TE-132	49.72	13.10	1.74E+01	1.73E+00	4.15E+00	8.45E+00
	228.16	88.00	1.73E+00		-1.77E-02	8.31E-01
BA-133	81.00	33.00	3.41E-01	1.81E-01	-1.18E+00	1.67E-01
	302.84	17.80	5.25E-01		2.57E-01	2.49E-01
	356.01	60.00	1.81E-01		-4.32E-01	8.61E-02
I-133	529.87	86.30	4.77E+03	4.77E+03	-5.52E+02	2.23E+03
XE-133	81.00	38.00	1.70E+00	1.70E+00	-5.88E+00	8.30E-01
CS-134	563.23	8.38	1.41E+00	1.35E-01	7.51E-01	6.60E-01
	569.32	15.43	6.74E-01		2.56E-02	3.13E-01

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
CS-134	604.70	97.60	1.35E-01	1.35E-01	2.57E-02	6.37E-02
	795.84	85.40	1.81E-01		1.51E-01	8.49E-02
	801.93	8.73	1.29E+00		9.03E-02	5.91E-01
CS-135	268.24	16.00	6.40E-01	6.40E-01	1.41E-01	3.07E-01
I-135	1131.51	22.50	1.97E+14	1.30E+14	-9.61E+13	9.03E+13
	1260.41	28.60	1.30E+14		2.25E+11	5.78E+13
	1678.03	9.54	3.01E+14		1.90E+13	1.25E+14
CS-136	153.22	7.46	2.47E+00	2.61E-01	9.27E-01	1.19E+00
	163.89	4.61	3.69E+00		1.26E+00	1.78E+00
	176.55	13.56	1.25E+00		1.45E-01	6.02E-01
	273.65	12.66	1.53E+00		-1.19E+00	7.29E-01
	340.57	48.50	5.56E-01		9.33E-01	2.68E-01
	818.50	99.70	2.61E-01		3.05E-02	1.21E-01
	1048.07	79.60	3.73E-01		1.27E-01	1.71E-01
	1235.34	19.70	1.82E+00		-1.74E+00	8.39E-01
CS-137	661.65	85.12	1.36E-01	1.36E-01	-8.27E-02	6.30E-02
LA-138	788.74	34.00	4.21E-01	1.76E-01	6.34E-02	1.96E-01
	1435.80	66.00	1.76E-01		-3.39E-03	7.63E-02
CE-139	165.85	80.35	1.12E-01	1.12E-01	-1.86E-02	5.38E-02
BA-140	162.64	6.70	2.52E+00	9.16E-01	-1.01E+00	1.21E+00
	304.84	4.50	3.68E+00		-3.03E+00	1.73E+00
	423.70	3.20	6.70E+00		1.72E+00	3.16E+00
	437.55	2.00	1.06E+01		3.66E+00	4.98E+00
	537.32	25.00	9.16E-01		3.20E-02	4.29E-01
LA-140	328.77	20.50	9.97E-01	2.25E-01	1.12E-01	4.74E-01
	487.03	45.50	4.62E-01		-5.43E-03	2.16E-01
	815.85	23.50	1.14E+00		4.41E-02	5.27E-01
	1596.49	95.49	2.25E-01		-2.07E-01	9.49E-02
CE-141	145.44	48.40	2.35E-01	2.35E-01	-3.97E-02	1.13E-01
CE-143	57.36	11.80	7.97E+02	2.46E+02	-3.47E+02	3.87E+02
	293.26	42.00	2.46E+02		2.66E+02	1.19E+02
	664.55	5.20	2.05E+03		8.50E+02	9.62E+02
CE-144	133.54	10.80	8.05E-01	8.05E-01	5.06E-03	3.88E-01
PM-144	476.78	42.00	2.86E-01	1.14E-01	9.36E-02	1.35E-01
	618.01	98.60	1.14E-01		-1.45E-02	5.29E-02
	696.49	99.49	1.24E-01		-9.18E-02	5.75E-02
PM-145	36.85	21.70	1.05E+00	5.69E-01	-3.46E-01	5.09E-01
	37.36	39.70	5.69E-01		-2.88E-01	2.75E-01
	42.30	15.10	1.16E+00		-2.48E-01	5.64E-01
	72.40	2.31	5.33E+00		-2.42E+01	2.60E+00
PM-146	453.90	39.94	2.70E-01	2.70E-01	2.55E-02	1.27E-01
	735.90	14.01	7.91E-01		-3.94E-01	3.63E-01
	747.13	13.10	8.91E-01		-1.63E-01	4.11E-01
+ ND-147	91.11	*	28.90	1.97E+00	1.90E+00	1.36E+00
	531.02		13.10	1.90E+00		1.73E-01
PM-149	285.90	3.10	1.71E+02	1.71E+02	3.25E+01	8.11E+01
EU-152	121.78	20.50	3.79E-01	3.79E-01	6.97E-02	1.83E-01
	244.69	5.40	1.94E+00		-2.71E-02	9.33E-01
	344.27	19.13	4.60E-01		2.36E-02	2.17E-01
	778.89	9.20	1.42E+00		2.67E-01	6.58E-01
	964.01	10.40	1.58E+00		-4.01E-01	7.38E-01
	1085.78	7.22	2.06E+00		4.32E-01	9.47E-01
	1112.02	9.60	1.73E+00		-5.71E-02	7.99E-01

Analysis Report for 1606040-11
CP-5024 10-15

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	7.88E-01	3.79E-01	-1.09E-01	3.44E-01
GD-153	97.43	31.30	2.83E-01	2.83E-01	-1.95E-01	1.37E-01
	103.18	22.20	3.91E-01		1.45E-01	1.89E-01
EU-154	123.07	40.50	1.94E-01	1.94E-01	1.44E-02	9.38E-02
	723.30	19.70	6.70E-01		-3.19E-02	3.13E-01
	873.19	11.50	1.11E+00		3.81E-01	5.12E-01
	996.32	10.30	1.24E+00		4.70E-02	5.66E-01
	1004.76	17.90	9.17E-01		6.06E-01	4.26E-01
	1274.45	35.50	4.02E-01		-3.62E-02	1.81E-01
EU-155	86.50	30.90	3.84E-01	3.84E-01	7.24E-01	1.88E-01
	105.30	20.70	4.10E-01		-9.16E-02	1.98E-01
EU-156	811.77	10.40	2.23E+00	2.23E+00	-4.33E-01	1.03E+00
	1153.47	7.20	3.83E+00		-1.62E+00	1.75E+00
	1230.71	8.90	4.00E+00		1.09E+00	1.86E+00
HO-166M	184.41	72.60	1.64E-01	1.64E-01	3.26E-01	7.95E-02
	280.45	29.60	3.38E-01		1.81E-01	1.61E-01
	410.94	11.10	9.58E-01		-1.64E-01	4.53E-01
	711.69	54.10	2.15E-01		-1.08E-01	9.93E-02
TM-171	66.72	0.14	8.72E+01	8.72E+01	-1.42E+02	4.25E+01
HF-172	81.75	4.52	2.21E+00	7.11E-01	-7.66E+00	1.08E+00
	125.81	11.30	7.11E-01		1.68E-01	3.43E-01
LU-172	181.53	20.60	1.60E+00	9.09E-01	7.40E-01	7.70E-01
	810.06	16.63	2.96E+00		-2.07E-01	1.37E+00
	912.12	15.25	7.04E+00		1.70E+01	3.38E+00
	1093.66	62.50	9.09E-01		-7.81E-02	4.16E-01
LU-173	100.72	5.24	1.60E+00	5.25E-01	-2.87E-01	7.75E-01
	272.11	21.20	5.25E-01		5.66E-01	2.52E-01
HF-175	343.40	84.00	1.25E-01	1.25E-01	9.91E-03	5.88E-02
LU-176	88.34	13.30	9.02E-01	8.81E-02	1.49E+00	4.41E-01
	201.83	86.00	1.04E-01		-1.46E-02	5.01E-02
	306.78	94.00	8.81E-02		6.03E-03	4.15E-02
TA-182	67.75	41.20	3.05E-01	3.05E-01	-1.80E-01	1.48E-01
	1121.30	34.90	6.42E-01		6.20E-01	3.02E-01
	1189.05	16.23	1.02E+00		-2.43E-01	4.65E-01
	1221.41	26.98	7.02E-01		-1.49E-01	3.24E-01
	1231.02	11.44	1.84E+00		5.04E-01	8.59E-01
IR-192	308.46	29.68	3.18E-01	2.40E-01	7.05E-03	1.50E-01
	468.07	48.10	2.40E-01		-7.76E-02	1.13E-01
HG-203	279.19	77.30	1.60E-01	1.60E-01	4.65E-02	7.64E-02
BI-207	569.67	97.72	1.00E-01	1.00E-01	-4.18E-03	4.62E-02
	1063.62	74.90	1.82E-01		8.11E-03	8.30E-02
+ TL-208	583.14	*	30.22	2.14E-01	2.07E+00	4.19E-01
	860.37	*	4.48		3.73E+00	1.51E+00
	2614.66	*	35.85		1.55E+00	7.91E-02
BI-210M	262.00		45.00	1.91E-01	-5.19E-02	9.10E-02
	300.00		23.00		1.89E-01	2.13E-01
+ PB-210	46.50	*	4.25	3.99E+00	3.57E+00	1.94E+00
PB-211	404.84		2.90	3.29E+00	2.35E+00	1.55E+00
	831.96		2.90	4.45E+00	-8.99E-01	2.06E+00
+ BI-212	727.17	*	11.80	1.43E+00	1.76E+00	6.76E-01
	1620.62		2.75	4.44E+00	2.41E+00	1.92E+00
PB-212	238.63		44.60	4.65E-01	1.90E+00	2.28E-01
	300.09		3.41	3.00E+00	1.28E+00	1.43E+00

Analysis Report for 1606040-11
CP-5024 10-15

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	5.69E-01	5.69E-01	1.58E+00	2.76E-01
		1120.29 *	15.10	1.04E+00		1.69E+00	4.79E-01
		1764.49 *	15.80	9.24E-01		1.47E+00	4.07E-01
		2204.22	4.98	2.88E+00		1.03E+00	1.25E+00
+	PB-214	295.21 *	19.19	8.40E-01	4.42E-01	1.64E+00	4.08E-01
		351.92 *	37.19	4.42E-01		1.72E+00	2.14E-01
	RN-219	401.80	6.50	1.23E+00	1.23E+00	-1.14E+00	5.71E-01
	RA-223	323.87	3.88	2.23E+00	2.23E+00	-3.70E-01	1.05E+00
	RA-224	240.98	3.95	5.54E+00	5.54E+00	3.03E+01	2.72E+00
	RA-225	40.00	31.00	1.18E+00	1.18E+00	6.38E-01	5.73E-01
+	RA-226	186.21 *	3.28	4.45E+00	4.45E+00	6.00E+00	2.17E+00
	TH-227	50.10	8.40	1.61E+00	8.53E-01	3.83E-01	7.79E-01
		236.00	11.50	8.53E-01		-2.91E-02	4.09E-01
		256.20	6.30	1.42E+00		8.28E-02	6.77E-01
+	AC-228	338.32 *	11.40	1.23E+00	7.27E-01	1.92E+00	5.93E-01
		911.07 *	27.70	7.27E-01		2.20E+00	3.44E-01
		969.11 *	16.60	1.49E+00		2.53E+00	7.12E-01
	TH-230	48.44	16.90	8.99E-01	8.99E-01	2.33E-02	4.37E-01
		62.85	4.60	2.99E+00		5.83E+00	1.46E+00
		67.67	0.37	3.13E+01		-1.85E+01	1.53E+01
	PA-231	283.67	1.60	5.66E+00	4.05E+00	-1.08E-01	2.69E+00
		302.67	2.30	4.05E+00		1.98E+00	1.92E+00
	TH-231	25.64	14.70	9.52E+00	1.63E+00	-4.47E+01	4.64E+00
		84.21	6.40	1.63E+00		-3.05E+00	7.94E-01
	PA-233	311.98	38.60	3.00E-01	3.00E-01	-6.05E-02	1.41E-01
	PA-234	131.20	20.40	4.34E-01	4.34E-01	2.72E-01	2.10E-01
		733.99	8.80	1.22E+00		1.14E-01	5.61E-01
		946.00	12.00	1.07E+00		-9.71E-02	4.91E-01
	PA-234M	1001.03	0.92	1.61E+01	1.61E+01	-4.32E-01	7.43E+00
	TH-234	63.29	3.80	3.54E+00	3.54E+00	3.17E+00	1.73E+00
	U-235	143.76	10.50	8.30E-01	8.30E-01	1.88E-01	4.01E-01
		163.35	4.70	1.80E+00		6.16E-01	8.67E-01
		205.31	4.70	1.96E+00		6.68E-01	9.39E-01
	NP-237	86.50	12.60	9.38E-01	9.38E-01	1.77E+00	4.58E-01
	NP-239	106.10	22.70	1.83E+01	1.83E+01	-4.09E+00	8.86E+00
		228.18	10.70	4.20E+01		-4.28E-01	2.01E+01
		277.60	14.10	3.51E+01		1.50E+01	1.68E+01
	AM-241	59.54	35.90	3.36E-01	3.36E-01	-1.41E-01	1.64E-01
	AM-243	74.67	66.00	2.27E-01	2.27E-01	-6.42E-01	1.11E-01
	CM-243	209.75	3.29	3.02E+00	7.20E-01	2.21E+00	1.45E+00
		228.14	10.60	8.63E-01		-8.79E-03	4.13E-01
		277.60	14.00	7.20E-01		3.08E-01	3.44E-01

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

Analysis Report for 1606040-11
CP-5024 10-15

No Action Level results available for reporting purposes.

DATA REVIEW COMMENTS REPORT

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

369: 24 15 20 12 11 16 22 14

Sample Title: CP-5024 10-15

Channel	-----	-----	-----	-----	-----	-----	-----	-----
377:	18	10	10	15	17	12	23	16
385:	16	21	22	27	19	21	19	16
393:	12	16	9	10	12	17	24	8
401:	7	8	25	10	16	18	15	12
409:	12	18	19	14	16	12	14	17
417:	10	16	12	9	13	9	13	16
425:	8	13	23	18	8	17	9	17
433:	14	17	17	13	11	14	12	13
441:	8	9	5	15	21	12	12	19
449:	10	12	15	10	21	12	15	6
457:	11	15	11	10	9	10	21	27
465:	23	7	8	7	8	15	9	9
473:	11	12	17	10	19	13	16	13
481:	19	8	13	18	8	11	6	14
489:	9	7	12	9	14	15	12	8
497:	11	11	10	9	12	8	12	10
505:	21	15	16	12	15	24	59	49
513:	32	15	13	13	10	8	9	9
521:	16	15	13	11	11	6	6	7
529:	9	11	17	6	10	11	12	13
537:	6	14	14	9	7	6	15	14
545:	12	12	9	11	8	8	8	12
553:	4	4	8	11	8	7	7	9
561:	11	11	12	12	10	11	5	11
569:	5	7	5	13	5	17	12	12
577:	8	8	8	8	11	14	53	145
585:	54	9	13	5	15	14	6	14
593:	9	10	7	12	10	13	10	8
601:	10	11	15	10	7	20	12	11
609:	48	157	75	15	14	8	12	7
617:	9	6	10	6	7	10	10	7
625:	7	11	5	8	8	3	13	13
633:	13	9	7	7	8	5	9	8
641:	10	6	13	8	7	11	9	9
649:	5	12	7	13	15	5	8	9
657:	9	8	2	9	5	9	11	12
665:	9	17	12	9	12	8	13	5
673:	9	8	8	8	8	9	9	10
681:	13	9	5	12	7	12	11	3
689:	10	9	9	11	10	7	8	7
697:	7	14	3	11	11	16	16	7
705:	15	12	18	12	7	8	7	8
713:	5	9	7	5	7	6	8	7
721:	8	8	7	11	14	10	12	34
729:	17	9	6	4	6	4	9	7
737:	5	10	2	8	14	8	9	4
745:	7	3	4	8	8	13	5	3
753:	8	10	14	9	11	13	2	8
761:	9	13	6	11	15	11	10	10
769:	19	15	10	8	12	7	3	8
777:	4	10	14	2	13	5	10	7
785:	6	14	11	13	8	4	4	13
793:	6	14	19	13	13	7	4	6

801: 2 4 5 10 7 8 7 6

Sample Title: CP-5024 10-15

Channel	1	2	3	4	5	6	7	8	9
809:	10	5	7	8	5	7	7	9	
817:	9	8	7	6	8	4	2	11	
825:	7	4	8	4	3	5	11	5	
833:	7	8	10	6	14	7	9	11	
841:	13	4	5	8	6	7	5	7	
849:	3	8	12	3	5	4	4	6	
857:	7	11	6	10	25	10	7	5	
865:	2	3	4	3	3	4	4	12	
873:	5	5	8	6	7	5	6	1	
881:	4	3	2	3	4	6	3	9	
889:	4	7	8	4	6	9	5	9	
897:	6	3	5	4	6	7	9	4	
905:	7	8	4	5	7	15	40	88	
913:	36	11	8	5	7	6	3	7	
921:	6	3	3	7	11	4	4	3	
929:	5	8	7	3	6	7	13	5	
937:	5	6	5	5	5	5	4	4	
945:	4	4	8	7	8	9	5	6	
953:	6	6	5	7	4	3	7	7	
961:	4	2	4	15	13	15	11	12	
969:	46	55	13	8	7	7	4	4	
977:	3	3	5	2	5	3	5	2	
985:	5	7	4	7	6	4	1	5	
993:	7	4	3	10	3	5	3	8	
1001:	4	7	14	7	9	6	10	6	
1009:	3	5	6	3	4	4	5	7	
1017:	5	8	2	2	8	7	6	3	
1025:	8	2	4	4	1	10	6	3	
1033:	5	8	3	8	4	2	5	7	
1041:	6	5	3	3	4	8	6	6	
1049:	5	10	5	5	7	4	4	6	
1057:	4	6	7	3	3	4	9	4	
1065:	9	4	3	8	5	10	8	11	
1073:	5	3	7	5	4	7	7	5	
1081:	4	5	5	2	6	5	10	11	
1089:	3	7	4	8	5	4	9	4	
1097:	5	6	6	7	9	4	6	3	
1105:	5	1	5	4	8	9	16	3	
1113:	7	5	3	5	4	9	8	16	
1121:	27	14	2	5	7	5	13	9	
1129:	3	9	3	4	5	8	6	9	
1137:	5	7	6	8	7	8	4	2	
1145:	7	5	2	6	6	7	4	4	
1153:	1	3	10	10	11	7	5	8	
1161:	8	7	8	8	3	5	6	10	
1169:	5	6	6	4	4	8	3	10	
1177:	6	6	6	3	6	6	7	5	
1185:	8	5	2	6	5	6	8	6	
1193:	7	6	2	8	4	4	5	4	
1201:	2	7	8	5	3	5	4	10	
1209:	4	5	4	5	7	5	2	10	
1217:	10	12	5	10	4	8	7	3	
1225:	5	9	6	11	12	7	9	7	

1233: 8 7 7 7 6 8 17 13

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Channel	1	2	3	4	5	6	7	8	9
1241:	7	4	8	4	9	6	4	5	
1249:	5	4	7	5	5	7	6	0	
1257:	4	1	4	4	3	4	3	4	
1265:	3	6	8	3	6	3	4	3	
1273:	4	5	1	5	7	4	5	9	
1281:	8	6	3	5	4	5	5	5	
1289:	3	0	3	2	2	7	3	6	
1297:	2	1	5	5	3	2	1	3	
1305:	5	2	8	6	3	4	6	4	
1313:	1	2	4	4	3	4	6	1	
1321:	2	1	3	2	5	3	3	7	
1329:	1	2	4	4	5	2	4	2	
1337:	2	2	1	4	1	4	1	8	
1345:	3	2	3	1	0	3	6	3	
1353:	4	0	3	3	2	5	1	4	
1361:	4	2	4	2	2	4	1	2	
1369:	5	1	2	3	2	3	3	2	
1377:	7	9	7	4	3	4	3	0	
1385:	1	2	1	3	0	3	5	4	
1393:	3	1	6	2	1	3	0	1	
1401:	4	5	5	1	1	3	3	3	
1409:	3	2	1	3	2	1	2	0	
1417:	2	1	2	1	4	1	1	2	
1425:	1	4	1	4	0	1	2	3	
1433:	3	2	3	1	2	1	3	1	
1441:	3	2	2	4	2	2	3	0	
1449:	5	5	2	2	3	1	1	3	
1457:	1	4	15	79	235	208	52	9	
1465:	1	6	1	0	3	0	2	2	
1473:	1	3	1	3	3	1	2	3	
1481:	1	1	1	1	2	2	2	1	
1489:	2	6	2	2	4	0	0	2	
1497:	1	2	2	1	1	2	1	0	
1505:	1	0	2	1	2	5	1	2	
1513:	2	0	2	1	2	1	1	2	
1521:	3	0	0	1	1	0	0	1	
1529:	1	2	3	0	3	1	2	2	
1537:	1	0	2	2	2	2	3	1	
1545:	1	0	0	2	2	2	2	2	
1553:	0	2	4	2	1	1	1	0	
1561:	0	3	3	0	1	0	1	0	
1569:	1	3	4	2	2	3	0	0	
1577:	0	2	2	2	0	2	1	3	
1585:	1	0	1	3	6	3	1	4	
1593:	1	6	2	1	0	0	0	3	
1601:	5	1	0	1	1	0	3	2	
1609:	4	0	2	1	1	3	1	1	
1617:	2	1	2	3	3	1	2	0	
1625:	0	3	1	1	2	2	3	5	
1633:	1	1	0	0	4	2	1	2	
1641:	3	3	1	3	1	2	0	2	
1649:	1	0	1	2	1	1	0	0	
1657:	2	1	0	1	3	5	0	4	

1665: 0 2 0 2 4 0 0 3

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Channel	1	2	3	4	5	6	7	8
1673:	0	2	1	1	3	1	2	0
1681:	0	2	0	1	1	1	1	3
1689:	0	1	3	0	2	0	1	1
1697:	2	0	1	1	1	0	1	0
1705:	1	0	2	0	1	2	3	4
1713:	1	1	0	0	4	3	0	1
1721:	0	0	2	1	1	1	1	2
1729:	3	8	4	0	1	1	0	1
1737:	1	0	0	2	1	1	0	0
1745:	1	1	0	1	1	1	1	2
1753:	2	1	1	0	1	2	2	0
1761:	1	0	5	12	19	7	3	1
1769:	0	2	0	0	0	1	0	0
1777:	1	1	0	1	2	1	1	1
1785:	2	0	1	1	1	1	1	0
1793:	0	1	1	1	1	0	0	2
1801:	0	1	1	2	0	2	0	0
1809:	1	0	1	1	1	0	1	0
1817:	0	1	1	1	2	1	2	1
1825:	1	1	0	0	0	1	1	0
1833:	1	2	0	1	2	0	4	2
1841:	1	0	0	1	2	2	3	4
1849:	0	4	2	2	0	0	1	2
1857:	1	0	5	0	1	0	0	0
1865:	0	1	1	3	4	1	1	1
1873:	2	2	0	0	0	3	1	4
1881:	0	1	1	1	1	2	0	0
1889:	2	0	2	1	0	0	0	2
1897:	1	2	0	0	0	1	1	0
1905:	2	0	2	0	0	1	3	0
1913:	1	0	0	1	1	0	0	2
1921:	1	2	0	2	0	1	0	1
1929:	2	2	2	0	0	1	1	1
1937:	1	1	0	1	1	1	0	2
1945:	0	5	0	0	3	0	1	1
1953:	0	1	3	2	3	4	1	1
1961:	1	0	1	0	0	1	0	0
1969:	0	1	1	0	1	0	2	1
1977:	2	0	0	1	0	0	0	1
1985:	1	1	0	0	2	1	1	0
1993:	1	0	1	0	2	2	0	2
2001:	1	1	0	1	0	3	0	0
2009:	1	1	1	1	1	1	3	3
2017:	1	2	0	1	1	0	0	1
2025:	1	0	0	1	1	2	1	0
2033:	0	1	0	0	0	1	1	0
2041:	1	0	2	0	1	0	0	0
2049:	2	0	0	0	0	2	1	0
2057:	2	1	1	1	0	4	1	0
2065:	3	1	2	0	0	1	1	1
2073:	0	0	0	1	0	0	1	1
2081:	1	0	1	0	2	0	0	1
2089:	1	2	1	0	3	2	0	1

2097: 1 0 1 0 1 1 4 3

Sample Title: CP-5024 10-15

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

2529: 1 0 0 0 0 0 0 2 1

Sample Title: CP-5024 10-15

Channel	1	2	3	4	5	6	7	8	9
2537:	2	0	0	1	0	0	0	0	0
2545:	2	0	0	1	0	0	0	0	0
2553:	0	2	0	1	0	1	1	1	1
2561:	0	0	0	0	0	0	1	0	0
2569:	0	1	1	0	0	0	0	0	0
2577:	1	0	1	0	0	0	0	0	1
2585:	0	0	0	0	0	0	0	0	1
2593:	1	0	1	0	0	1	0	0	0
2601:	0	0	1	0	0	0	0	0	0
2609:	1	0	0	3	9	24	24	19	19
2617:	1	0	0	0	0	0	0	0	1
2625:	0	1	0	0	0	0	0	0	0
2633:	0	0	0	0	1	0	0	0	0
2641:	0	0	0	0	1	0	0	0	0
2649:	0	1	0	0	0	0	0	0	0
2657:	0	0	2	0	0	0	0	0	0
2665:	1	0	0	0	0	0	0	0	1
2673:	0	1	0	0	0	0	0	0	1
2681:	1	0	0	1	0	0	0	0	0
2689:	0	1	0	0	0	1	1	0	0
2697:	0	0	0	0	0	1	0	0	0
2705:	0	1	0	1	0	1	0	0	0
2713:	0	0	0	0	0	1	2	0	0
2721:	1	0	0	0	0	2	0	0	0
2729:	0	0	1	2	0	0	1	0	0
2737:	0	1	0	0	0	1	1	1	1
2745:	0	0	0	0	1	1	1	0	0
2753:	1	1	0	1	0	1	0	0	0
2761:	1	0	0	0	1	0	0	0	0
2769:	0	0	1	1	0	0	1	0	0
2777:	0	0	0	0	3	0	1	1	1
2785:	0	0	0	1	0	0	0	0	1
2793:	0	1	0	0	0	1	0	0	0
2801:	0	0	0	1	0	0	0	0	0
2809:	0	0	0	0	0	0	0	0	2
2817:	0	0	0	1	0	1	0	0	1
2825:	0	0	0	0	0	0	0	0	1
2833:	0	1	0	0	0	0	0	0	0
2841:	0	0	0	0	0	0	0	0	0
2849:	0	0	0	0	0	0	0	0	0
2857:	0	1	1	0	0	0	0	0	0
2865:	0	0	1	1	0	1	0	0	1
2873:	0	0	0	0	0	0	0	0	0
2881:	1	1	0	0	0	0	0	0	0
2889:	0	0	0	0	0	2	0	0	0
2897:	1	0	0	0	0	1	0	0	0
2905:	0	0	1	0	0	0	1	0	0
2913:	0	0	1	0	0	0	0	0	0
2921:	0	0	0	0	0	0	0	0	0
2929:	0	0	0	0	0	0	0	0	0
2937:	0	0	0	0	0	0	0	0	0
2945:	0	1	0	0	0	0	1	0	0
2953:	1	0	0	1	0	0	0	0	0

2961: 1 0 0 0 1 0 0 0

Sample Title: CP-5024 10-15

Channel	1	2	3	4	5	6	7	8
2969:	0	0	0	1	0	1	1	0
2977:	0	0	0	0	1	0	0	0
2985:	0	0	1	0	0	0	0	1
2993:	0	1	1	0	0	0	0	1
3001:	0	0	0	0	0	0	0	0
3009:	0	0	0	0	0	0	0	0
3017:	0	0	0	0	1	1	0	1
3025:	0	0	1	0	1	1	0	0
3033:	0	0	0	0	0	0	0	0
3041:	0	0	0	1	0	2	0	0
3049:	0	0	1	0	0	1	0	0
3057:	1	2	1	0	0	1	0	0
3065:	1	0	0	0	2	0	0	0
3073:	0	1	0	0	0	0	0	0
3081:	0	0	0	0	0	0	0	1
3089:	0	1	0	0	0	1	0	0
3097:	0	1	0	0	0	0	1	0
3105:	0	0	1	0	1	0	0	1
3113:	0	0	0	1	1	0	0	0
3121:	0	0	1	0	0	0	0	0
3129:	0	1	1	0	0	2	1	0
3137:	0	0	0	0	1	0	0	0
3145:	0	0	1	0	0	0	0	0
3153:	0	0	0	0	1	1	0	1
3161:	0	0	0	0	0	1	0	1
3169:	0	0	0	0	0	0	0	0
3177:	0	0	0	0	0	1	0	0
3185:	0	0	0	0	0	0	0	1
3193:	0	0	0	1	0	2	0	0
3201:	0	0	0	0	0	0	0	1
3209:	0	0	1	0	0	0	0	0
3217:	0	2	0	0	0	0	0	0
3225:	0	0	0	0	0	1	0	0
3233:	0	1	1	0	0	1	1	0
3241:	0	0	0	0	0	0	0	0
3249:	0	0	1	0	0	0	0	0
3257:	0	0	0	0	0	1	0	0
3265:	0	0	1	0	0	0	1	1
3273:	0	0	0	0	0	0	0	0
3281:	1	0	0	0	0	0	0	0
3289:	1	0	0	0	0	0	0	0
3297:	0	0	0	0	0	0	1	0
3305:	0	0	0	0	0	0	0	0
3313:	0	0	0	1	0	0	0	0
3321:	0	0	1	0	0	0	0	0
3329:	1	0	0	0	0	0	0	0
3337:	0	0	0	1	0	0	0	0
3345:	0	0	0	0	0	0	0	0
3353:	0	0	0	0	0	0	0	0
3361:	0	0	0	0	0	0	0	0
3369:	0	0	0	1	0	1	0	1
3377:	2	0	0	0	0	0	0	0
3385:	0	0	0	0	0	0	0	1

3393: 0 0 0 0 1 0 0 0

Sample Title: CP-5024 10-15

Channel	1	2	3	4	5	6	7	8	9
3401:	0	0	0	0	0	0	0	0	0
3409:	0	0	1	0	0	0	0	0	0
3417:	1	0	0	0	1	1	1	1	0
3425:	0	0	1	0	0	0	0	0	0
3433:	0	0	0	0	0	0	0	0	0
3441:	0	0	1	0	1	1	0	0	0
3449:	0	0	0	0	0	0	0	0	0
3457:	0	0	0	1	0	0	0	0	0
3465:	0	0	1	0	0	0	2	2	0
3473:	0	1	0	0	1	0	0	0	0
3481:	0	0	0	1	0	0	0	0	0
3489:	0	0	0	2	0	0	0	1	0
3497:	0	0	0	0	1	1	0	0	0
3505:	1	0	0	0	0	0	0	0	0
3513:	0	0	0	0	0	1	0	0	0
3521:	2	0	0	1	0	0	1	0	0
3529:	0	0	0	1	0	0	0	0	0
3537:	0	0	1	1	0	0	0	0	0
3545:	0	0	0	0	0	0	0	0	0
3553:	0	0	0	0	0	1	0	0	0
3561:	0	0	1	0	0	0	0	0	0
3569:	0	0	0	0	0	1	0	0	0
3577:	0	0	0	0	0	0	0	0	0
3585:	0	0	0	0	0	0	0	0	0
3593:	0	0	0	1	0	0	0	0	0
3601:	0	0	0	0	1	0	0	0	0
3609:	0	0	0	0	1	0	0	0	0
3617:	1	0	0	0	1	0	0	1	0
3625:	0	0	0	0	0	1	0	0	0
3633:	0	0	0	0	0	0	0	0	0
3641:	0	1	0	0	0	0	0	0	0
3649:	0	0	0	0	0	1	0	1	0
3657:	0	0	0	0	0	0	0	0	0
3665:	0	0	0	0	1	0	0	0	0
3673:	1	0	0	0	0	0	0	0	0
3681:	0	0	0	0	0	1	0	2	0
3689:	0	0	0	0	0	0	0	0	0
3697:	0	0	1	0	0	0	1	0	0
3705:	0	1	0	0	0	0	0	0	0
3713:	0	0	0	0	0	1	0	0	0
3721:	0	0	0	0	0	0	0	0	0
3729:	1	0	0	0	0	0	0	0	0
3737:	0	0	1	0	1	0	0	0	0
3745:	0	0	0	0	0	0	0	0	0
3753:	1	1	0	0	0	0	0	1	0
3761:	1	0	1	0	0	0	0	1	0
3769:	0	0	0	0	0	0	0	0	0
3777:	1	0	0	1	0	0	0	0	0
3785:	0	0	0	0	2	0	0	0	0
3793:	0	0	0	0	0	0	0	0	0
3801:	0	0	0	0	0	0	2	0	0
3809:	0	0	0	0	0	0	0	0	0
3817:	0	0	0	0	0	0	0	0	0

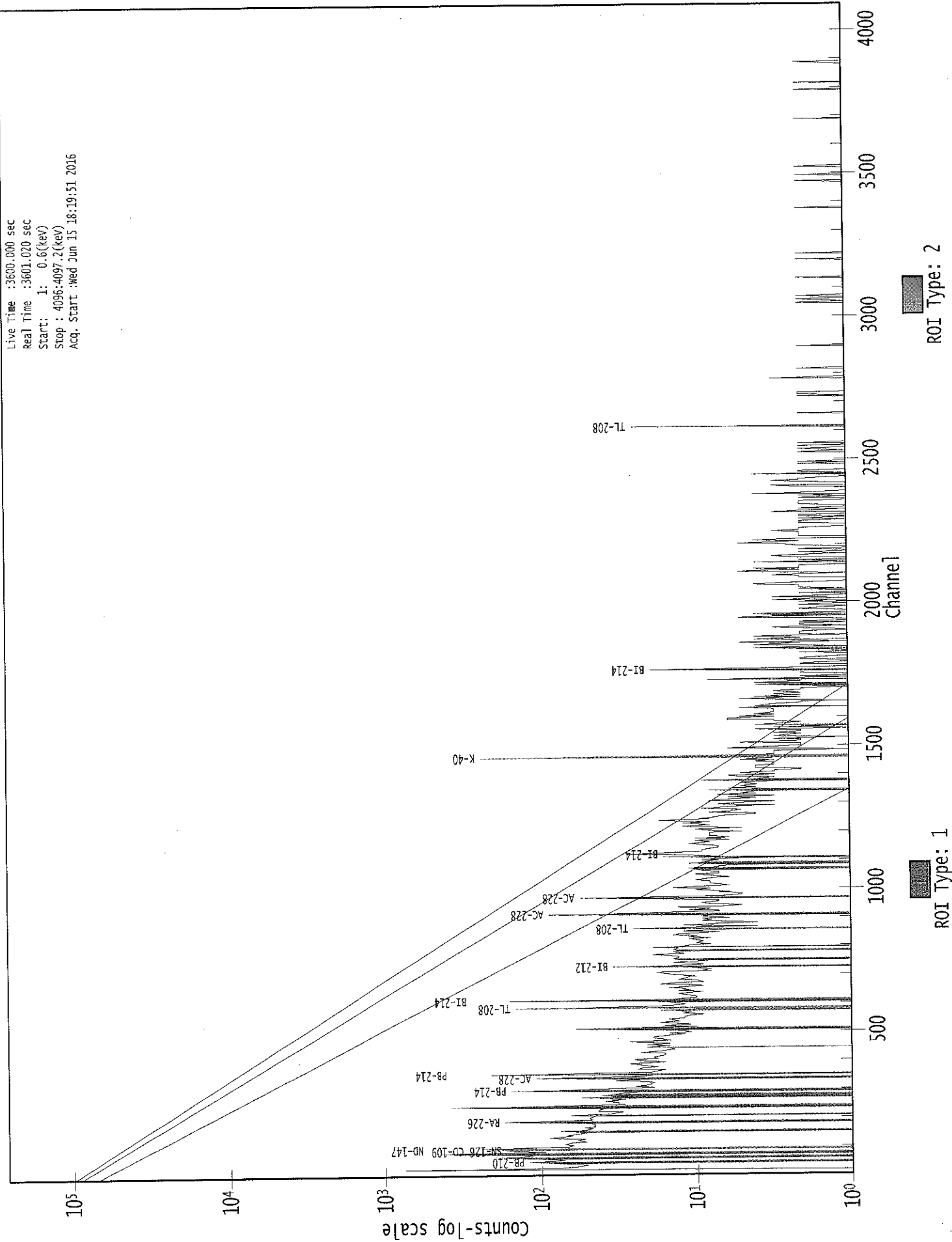
3825: 0 0 0 0 0 0 0 0 0

Sample Title: CP-5024 10-15

Channel	-----	-----	-----	-----	-----	-----	-----	-----
3833:	0	0	0	0	0	0	0	1
3841:	1	0	1	0	0	1	0	0
3849:	0	0	0	0	0	0	0	1
3857:	0	1	0	0	0	0	0	0
3865:	0	0	0	0	0	0	0	0
3873:	0	0	1	0	0	1	1	1
3881:	0	0	1	0	0	0	2	0
3889:	0	0	0	0	0	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	1	0	0
3929:	0	0	0	0	0	0	0	0
3937:	0	0	1	0	0	0	1	1
3945:	0	0	0	0	0	0	0	0
3953:	0	0	0	0	0	0	0	0
3961:	0	0	0	1	0	0	0	0
3969:	0	0	0	1	0	0	0	0
3977:	0	1	0	0	0	0	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	1	0	1	0	0	1
4017:	0	0	0	0	1	0	0	0
4025:	0	0	0	0	0	0	1	0
4033:	0	0	0	0	0	0	0	0
4041:	0	0	0	1	0	1	0	0
4049:	0	0	0	0	0	0	0	0
4057:	1	0	0	0	0	0	0	1
4065:	0	0	0	0	0	0	0	0
4073:	0	0	1	0	0	0	0	0
4081:	0	0	0	0	0	0	1	1
4089:	0	0	0	0	0	1	0	1

0000038951.CNF

Live Time : 3600.000 sec
Real Time : 3601.020 sec
Start : 1: 0.6(keV)
Stop : 4096:4097.2(keV)
Acq. Start : Wed Jun 15 18:19:51 2016



Analysis Report for 1606040-12
CP-5025 00-02

C
6/16

GAMMA SPECTRUM ANALYSIS

Sample Identification : 1606040-12
Sample Description : CP-5025 00-02
Sample Type : SOIL

Sample Size : 6.304E+02 grams
Facility : Countroom

Sample Taken On : 6/2/2016 1:12:31PM
Acquisition Started : 6/15/2016 6:21:19PM

Procedure : GAS-1402 pCi
Operator : Administrator
Detector Name : GE2
Geometry : GAS-1402
Live Time : 3600.0 seconds
Real Time : 3601.5 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 : 38952

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
6/16/16

Analysis Report for 1606040-12
CP-5025 00-02

PEAK LOCATE REPORT

Peak Locate Performed on : 6/15/2016 7:26:50PM
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	12.94	13.06	0.0000	0.00
2	54.86	54.96	0.0000	0.00
3	63.45	63.55	0.0000	0.00
4	76.45	76.54	0.0000	0.00
5	84.13	84.21	0.0000	0.00
6	87.13	87.21	0.0000	0.00
7	89.71	89.79	0.0000	0.00
8	92.87	92.95	0.0000	0.00
9	129.49	129.55	0.0000	0.00
10	185.83	185.86	0.0000	0.00
11	209.15	209.16	0.0000	0.00
12	215.15	215.16	0.0000	0.00
13	239.01	239.01	0.0000	0.00
14	270.17	270.15	0.0000	0.00
15	295.25	295.21	0.0000	0.00
16	300.16	300.13	0.0000	0.00
17	327.84	327.79	0.0000	0.00
18	338.39	338.33	0.0000	0.00
19	352.06	351.99	0.0000	0.00
20	414.48	414.39	0.0000	0.00
21	463.37	463.25	0.0000	0.00
22	479.70	479.57	0.0000	0.00
23	511.11	510.96	0.0000	0.00
24	533.11	532.95	0.0000	0.00
25	562.49	562.32	0.0000	0.00
26	583.60	583.42	0.0000	0.00
27	609.74	609.55	0.0000	0.00
28	662.03	661.81	0.0000	0.00
29	727.65	727.41	0.0000	0.00
30	756.04	755.78	0.0000	0.00
31	764.65	764.39	0.0000	0.00
32	768.88	768.61	0.0000	0.00
33	772.88	772.61	0.0000	0.00
34	794.13	793.85	0.0000	0.00
35	863.59	863.29	0.0000	0.00
36	911.45	911.12	0.0000	0.00
37	922.19	921.86	0.0000	0.00
38	965.25	964.91	0.0000	0.00
39	969.48	969.13	0.0000	0.00
40	1120.47	1120.06	0.0000	0.00
41	1377.96	1377.47	0.0000	0.00
42	1408.41	1407.90	0.0000	0.00

Analysis Report for 1606040-12
CP-5025 00-02

<i>Peak No.</i>	<i>Energy (keV)</i>	<i>Centroid Channel</i>	<i>Centroid Uncertainty</i>	<i>Peak Significance</i>
43	1454.12	1453.60	0.0000	0.00
44	1461.45	1460.92	0.0000	0.00
45	1521.81	1521.27	0.0000	0.00
46	1544.13	1543.58	0.0000	0.00
47	1566.55	1566.00	0.0000	0.00
48	1595.10	1594.54	0.0000	0.00
49	1630.36	1629.79	0.0000	0.00
50	1698.17	1697.58	0.0000	0.00
51	1729.43	1728.83	0.0000	0.00
52	1765.15	1764.54	0.0000	0.00
53	1848.10	1847.47	0.0000	0.00
54	1889.82	1889.19	0.0000	0.00
55	2071.85	2071.18	0.0000	0.00
56	2205.14	2204.44	0.0000	0.00
57	2285.27	2284.57	0.0000	0.00
58	2411.04	2410.32	0.0000	0.00
59	2446.13	2445.41	0.0000	0.00
60	2615.08	2614.34	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1606040-12
CP-5025 00-02

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 6/15/2016 7:26:50PM

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	12.94	12 -	16	13.06	1.98E+03	129.26	1.72E+03	1.01
2	54.86	53 -	57	54.96	5.15E+01	60.21	7.63E+02	2.25
3	63.45	61 -	66	63.55	1.46E+02	83.35	1.28E+03	1.78
4	76.45	73 -	83	76.54	6.76E+02	151.59	2.67E+03	3.08
M	5	83 -	97	84.21	8.45E+01	34.99	3.53E+02	1.21
m	6	83 -	97	87.21	1.60E+02	59.83	6.72E+02	1.22
m	7	83 -	97	89.79	1.52E+02	59.60	6.34E+02	1.23
m	8	83 -	97	92.95	2.98E+02	63.72	5.89E+02	1.23
	9	125 -	133	129.55	1.15E+02	83.28	9.90E+02	2.72
	10	182 -	188	185.86	2.28E+02	68.45	6.86E+02	1.25
	11	206 -	211	209.16	7.47E+01	52.37	4.89E+02	1.84
	12	213 -	217	215.16	4.06E+01	43.83	3.89E+02	1.89
	13	236 -	242	239.01	6.75E+02	89.26	9.74E+02	1.20
	14	267 -	272	270.15	7.00E+01	42.70	3.08E+02	1.57
M	15	292 -	305	295.21	2.70E+02	46.79	2.72E+02	1.50
m	16	292 -	305	300.13	3.68E+01	36.62	2.74E+02	1.66
	17	324 -	331	327.79	5.58E+01	50.32	3.86E+02	1.80
	18	334 -	342	338.33	1.41E+02	57.30	4.19E+02	1.79
	19	348 -	355	351.99	4.19E+02	60.70	3.33E+02	1.26
	20	412 -	419	414.39	3.21E+01	39.65	2.42E+02	4.65
	21	459 -	466	463.25	3.53E+01	37.89	2.15E+02	1.35
	22	477 -	483	479.57	2.55E+01	31.16	1.59E+02	3.72
	23	506 -	514	510.96	1.57E+02	47.90	2.57E+02	1.49
	24	531 -	536	532.95	2.89E+01	27.00	1.22E+02	2.68
	25	560 -	564	562.32	1.90E+01	22.07	8.99E+01	1.50
	26	578 -	586	583.42	2.18E+02	47.20	2.11E+02	1.72
	27	606 -	615	609.55	2.57E+02	52.20	2.36E+02	1.89
	28	658 -	665	661.81	3.49E+01	35.89	1.90E+02	1.24
	29	723 -	730	727.41	5.00E+01	32.62	1.44E+02	1.49
	30	754 -	759	755.78	1.78E+01	21.70	7.84E+01	2.66
M	31	763 -	777	764.39	1.40E+01	13.55	5.22E+01	2.22
m	32	763 -	777	768.61	3.18E+01	28.06	1.09E+02	2.22
m	33	763 -	777	772.61	2.77E+01	27.12	9.51E+01	2.23
	34	789 -	799	793.85	3.01E+01	35.11	1.48E+02	1.07
	35	856 -	871	863.29	4.54E+01	41.18	1.49E+02	9.39
	36	908 -	915	911.12	1.69E+02	35.83	1.04E+02	1.63
	37	919 -	925	921.86	1.54E+01	19.50	5.51E+01	2.81
M	38	957 -	978	964.91	3.54E+01	21.14	5.28E+01	2.01
m	39	957 -	978	969.13	9.42E+01	26.29	5.85E+01	2.10
	40	1115 -	1124	1120.06	6.98E+01	32.34	1.08E+02	2.26

Analysis Report for 1606040-12

CP-5025 00-02

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
41	1377.96	1374 -	1381	1377.47	1.45E+01	18.00	4.50E+01	1.17
42	1408.41	1404 -	1414	1407.90	1.95E+01	18.15	3.50E+01	4.43
43	1454.12	1451 -	1456	1453.60	1.46E+01	10.58	8.84E+00	1.34
44	1461.45	1457 -	1465	1460.92	5.95E+02	49.73	1.52E+01	1.99
45	1521.81	1516 -	1525	1521.27	1.26E+01	12.45	1.48E+01	4.73
46	1544.13	1541 -	1546	1543.58	9.65E+00	8.89	6.69E+00	3.09
47	1566.55	1562 -	1569	1566.00	8.00E+00	5.66	0.00E+00	2.15
48	1595.10	1592 -	1598	1594.54	1.10E+01	11.00	1.40E+01	1.22
49	1630.36	1623 -	1634	1629.79	1.26E+01	13.86	1.69E+01	3.02
50	1698.17	1695 -	1700	1697.58	4.33E+00	5.74	3.33E+00	0.96
51	1729.43	1725 -	1733	1728.83	1.18E+01	11.69	1.44E+01	1.58
52	1765.15	1759 -	1768	1764.54	6.58E+01	19.16	1.45E+01	2.14
53	1848.10	1844 -	1850	1847.47	1.70E+01	8.25	0.00E+00	1.69
54	1889.82	1886 -	1892	1889.19	7.50E+00	8.28	7.00E+00	1.91
55	2071.85	2067 -	2075	2071.18	1.10E+01	6.63	0.00E+00	3.16
56	2205.14	2200 -	2211	2204.44	1.35E+01	14.14	1.90E+01	1.34
57	2285.27	2282 -	2287	2284.57	8.75E+00	7.00	2.50E+00	3.23
58	2411.04	2406 -	2413	2410.32	5.94E+00	6.93	4.13E+00	2.16
59	2446.13	2441 -	2448	2445.41	9.23E+00	7.75	3.55E+00	4.24
60	2615.08	2610 -	2618	2614.34	9.50E+01	19.49	0.00E+00	2.94

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 : 6/15/2016 7:26:50PM

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	12.94	12 -	16	1.98E+03	129.26	1.72E+03	7.71E+01
2	54.86	53 -	57	5.15E+01	60.21	7.63E+02	4.81E+01
3	63.45	61 -	66	1.46E+02	83.35	1.28E+03	6.56E+01
4	76.45	73 -	83	6.76E+02	151.59	2.67E+03	1.17E+02
M 5	84.13	83 -	97	8.45E+01	34.99	3.53E+02	3.09E+01
m 6	87.13	83 -	97	1.60E+02	59.83	6.72E+02	4.26E+01
m 7	89.71	83 -	97	1.52E+02	59.60	6.34E+02	4.14E+01
m 8	92.87	83 -	97	2.98E+02	63.72	5.89E+02	3.99E+01

Analysis Report for 1606040-12
CP-5025 00-02

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	9	129.49	125 -	133	1.15E+02	83.28	9.90E+02	6.61E+01
	10	185.83	182 -	188	2.28E+02	68.45	6.86E+02	5.05E+01
	11	209.15	206 -	211	7.47E+01	52.37	4.89E+02	4.06E+01
	12	215.15	213 -	217	4.06E+01	43.83	3.89E+02	3.45E+01
	13	239.01	236 -	242	6.75E+02	89.26	9.74E+02	5.97E+01
	14	270.17	267 -	272	7.00E+01	42.70	3.08E+02	3.23E+01
M	15	295.25	292 -	305	2.70E+02	46.79	2.72E+02	2.71E+01
m	16	300.16	292 -	305	3.68E+01	36.62	2.74E+02	2.72E+01
	17	327.84	324 -	331	5.58E+01	50.32	3.86E+02	3.95E+01
	18	338.39	334 -	342	1.41E+02	57.30	4.19E+02	4.29E+01
	19	352.06	348 -	355	4.19E+02	60.70	3.33E+02	3.69E+01
	20	414.48	412 -	419	3.21E+01	39.65	2.42E+02	3.12E+01
	21	463.37	459 -	466	3.53E+01	37.89	2.15E+02	2.96E+01
	22	479.70	477 -	483	2.55E+01	31.16	1.59E+02	2.42E+01
	23	511.11	506 -	514	1.57E+02	47.90	2.57E+02	3.36E+01
	24	533.11	531 -	536	2.89E+01	27.00	1.22E+02	2.04E+01
	25	562.49	560 -	564	1.90E+01	22.07	8.99E+01	1.67E+01
	26	583.60	578 -	586	2.18E+02	47.20	2.11E+02	3.03E+01
	27	609.74	606 -	615	2.57E+02	52.20	2.36E+02	3.39E+01
	28	662.03	658 -	665	3.49E+01	35.89	1.90E+02	2.79E+01
	29	727.65	723 -	730	5.00E+01	32.62	1.44E+02	2.42E+01
	30	756.04	754 -	759	1.78E+01	21.70	7.84E+01	1.64E+01
M	31	764.65	763 -	777	1.40E+01	13.55	5.22E+01	1.19E+01
m	32	768.88	763 -	777	3.18E+01	28.06	1.09E+02	1.71E+01
m	33	772.88	763 -	777	2.77E+01	27.12	9.51E+01	1.60E+01
	34	794.13	789 -	799	3.01E+01	35.11	1.48E+02	2.74E+01
	35	863.59	856 -	871	4.54E+01	41.18	1.49E+02	3.20E+01
	36	911.45	908 -	915	1.69E+02	35.83	1.04E+02	2.03E+01
	37	922.19	919 -	925	1.54E+01	19.50	5.51E+01	1.47E+01
M	38	965.25	957 -	978	3.54E+01	21.14	5.28E+01	1.19E+01
m	39	969.48	957 -	978	9.42E+01	26.29	5.85E+01	1.26E+01
	40	1120.47	1115 -	1124	6.98E+01	32.34	1.08E+02	2.28E+01
	41	1377.96	1374 -	1381	1.45E+01	18.00	4.50E+01	1.34E+01
	42	1408.41	1404 -	1414	1.95E+01	18.15	3.50E+01	1.30E+01
	43	1454.12	1451 -	1456	1.46E+01	10.58	8.84E+00	6.02E+00
	44	1461.45	1457 -	1465	5.95E+02	49.73	1.52E+01	7.85E+00
	45	1521.81	1516 -	1525	1.26E+01	12.45	1.48E+01	8.41E+00
	46	1544.13	1541 -	1546	9.65E+00	8.89	6.69E+00	5.22E+00
	47	1566.55	1562 -	1569	8.00E+00	5.66	0.00E+00	0.00E+00
	48	1595.10	1592 -	1598	1.10E+01	11.00	1.40E+01	7.21E+00
	49	1630.36	1623 -	1634	1.26E+01	13.86	1.69E+01	9.79E+00
	50	1698.17	1695 -	1700	4.33E+00	5.74	3.33E+00	3.25E+00
	51	1729.43	1725 -	1733	1.18E+01	11.69	1.44E+01	7.78E+00
	52	1765.15	1759 -	1768	6.58E+01	19.16	1.45E+01	8.38E+00
	53	1848.10	1844 -	1850	1.70E+01	8.25	0.00E+00	0.00E+00
	54	1889.82	1886 -	1892	7.50E+00	8.28	7.00E+00	5.10E+00
	55	2071.85	2067 -	2075	1.10E+01	6.63	0.00E+00	0.00E+00
	56	2205.14	2200 -	2211	1.35E+01	14.14	1.90E+01	9.93E+00
	57	2285.27	2282 -	2287	8.75E+00	7.00	2.50E+00	3.08E+00
	58	2411.04	2406 -	2413	5.94E+00	6.93	4.13E+00	4.05E+00
	59	2446.13	2441 -	2448	9.23E+00	7.75	3.55E+00	3.95E+00

Analysis Report for 1606040-12
CP-5025 00-02

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
60	2615.08	2610 -	2618	9.50E+01	19.49	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 : 6/15/2016 7:26:50PM

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	12.94	12 -	16	13.06	1.98E+03	129.26	1.72E+03	.....
2	54.86	53 -	57	54.96	5.15E+01	60.21	7.63E+02	.....
3	63.45	61 -	66	63.55	1.46E+02	83.35	1.28E+03	TH-234 TH-230
M	76.45	73 -	83	76.54	6.76E+02	151.59	2.67E+03	.....
m	84.13	83 -	97	84.21	8.45E+01	34.99	3.53E+02	TH-231
m	87.13	83 -	97	87.21	1.60E+02	59.83	6.72E+02	SN-126 NP-237 EU-155 CD-109
m	89.71	83 -	97	89.79	1.52E+02	59.60	6.34E+02	.....
m	92.87	83 -	97	92.95	2.98E+02	63.72	5.89E+02	GA-67
	129.49	125 -	133	129.55	1.15E+02	83.28	9.90E+02	.....
	185.83	182 -	188	185.86	2.28E+02	68.45	6.86E+02	RA-226
	209.15	206 -	211	209.16	7.47E+01	52.37	4.89E+02	GA-67 CM-243
	215.15	213 -	217	215.16	4.06E+01	43.83	3.89E+02	.....
	239.01	236 -	242	239.01	6.75E+02	89.26	9.74E+02	PB-212
	270.17	267 -	272	270.15	7.00E+01	42.70	3.08E+02	.....
M	295.25	292 -	305	295.21	2.70E+02	46.79	2.72E+02	PB-214
m	300.16	292 -	305	300.13	3.68E+01	36.62	2.74E+02	GA-67 PB-212 BI-210M
	327.84	324 -	331	327.79	5.58E+01	50.32	3.86E+02	LA-140
	338.39	334 -	342	338.33	1.41E+02	57.30	4.19E+02	AC-228

Analysis Report for 1606040-12

CP-5025 00-02

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide	
19	352.06	348 -	355	351.99	4.19E+02	60.70	3.33E+02	PB-214	
20	414.48	412 -	419	414.39	3.21E+01	39.65	2.42E+02	SB-126	
21	463.37	459 -	466	463.25	3.53E+01	37.89	2.15E+02	SB-125	
22	479.70	477 -	483	479.57	2.55E+01	31.16	1.59E+02	.....
23	511.11	506 -	514	510.96	1.57E+02	47.90	2.57E+02	.....
24	533.11	531 -	536	532.95	2.89E+01	27.00	1.22E+02	.....
25	562.49	560 -	564	562.32	1.90E+01	22.07	8.99E+01	CS-134	
26	583.60	578 -	586	583.42	2.18E+02	47.20	2.11E+02	TL-208	
27	609.74	606 -	615	609.55	2.57E+02	52.20	2.36E+02	BI-214	
28	662.03	658 -	665	661.81	3.49E+01	35.89	1.90E+02	CS-137	
29	727.65	723 -	730	727.41	5.00E+01	32.62	1.44E+02	BI-212	
30	756.04	754 -	759	755.78	1.78E+01	21.70	7.84E+01	ZR-95	
M	31	764.65	763 -	777	764.39	1.40E+01	13.55	5.22E+01	AG-110M
m	32	768.88	763 -	777	768.61	3.18E+01	28.06	1.09E+02	.....
m	33	772.88	763 -	777	772.61	2.77E+01	27.12	9.51E+01	.....
	34	794.13	789 -	799	793.85	3.01E+01	35.11	1.48E+02	.....
	35	863.59	856 -	871	863.29	4.54E+01	41.18	1.49E+02	.....
	36	911.45	908 -	915	911.12	1.69E+02	35.83	1.04E+02	AC-228 LU-172
	37	922.19	919 -	925	921.86	1.54E+01	19.50	5.51E+01	.....
M	38	965.25	957 -	978	964.91	3.54E+01	21.14	5.28E+01	.....
m	39	969.48	957 -	978	969.13	9.42E+01	26.29	5.85E+01	AC-228
	40	1120.47	1115 -	1124	1120.06	6.98E+01	32.34	1.08E+02	SC-46 BI-214 TA-182
	41	1377.96	1374 -	1381	1377.47	1.45E+01	18.00	4.50E+01	.....
	42	1408.41	1404 -	1414	1407.90	1.95E+01	18.15	3.50E+01	EU-152
	43	1454.12	1451 -	1456	1453.60	1.46E+01	10.58	8.84E+00	.....
	44	1461.45	1457 -	1465	1460.92	5.95E+02	49.73	1.52E+01	K-40
	45	1521.81	1516 -	1525	1521.27	1.26E+01	12.45	1.48E+01	.....
	46	1544.13	1541 -	1546	1543.58	9.65E+00	8.89	6.69E+00	.....
	47	1566.55	1562 -	1569	1566.00	8.00E+00	5.66	0.00E+00	.....
	48	1595.10	1592 -	1598	1594.54	1.10E+01	11.00	1.40E+01	.....
	49	1630.36	1623 -	1634	1629.79	1.26E+01	13.86	1.69E+01	.....
	50	1698.17	1695 -	1700	1697.58	4.33E+00	5.74	3.33E+00	.....
	51	1729.43	1725 -	1733	1728.83	1.18E+01	11.69	1.44E+01	.....
	52	1765.15	1759 -	1768	1764.54	6.58E+01	19.16	1.45E+01	BI-214
	53	1848.10	1844 -	1850	1847.47	1.70E+01	8.25	0.00E+00	.....
	54	1889.82	1886 -	1892	1889.19	7.50E+00	8.28	7.00E+00	.....
	55	2071.85	2067 -	2075	2071.18	1.10E+01	6.63	0.00E+00	.....
	56	2205.14	2200 -	2211	2204.44	1.35E+01	14.14	1.90E+01	BI-214
	57	2285.27	2282 -	2287	2284.57	8.75E+00	7.00	2.50E+00	.....
	58	2411.04	2406 -	2413	2410.32	5.94E+00	6.93	4.13E+00	.....
	59	2446.13	2441 -	2448	2445.41	9.23E+00	7.75	3.55E+00	.....
	60	2615.08	2610 -	2618	2614.34	9.50E+01	19.49	0.00E+00	TL-208

Analysis Report for 1606040-12
CP-5025 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 : 6/15/2016 7:26:50PM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	12.94	1.98E+03	129.26	1.18E-05	1.66E-03
	2	54.86	5.15E+01	60.21	2.11E-02	1.66E-03
	3	63.45	1.46E+02	83.35	2.37E-02	1.74E-03
	4	76.45	6.76E+02	151.59	2.56E-02	2.02E-03
M	5	84.13	8.45E+01	34.99	2.60E-02	2.19E-03
m	6	87.13	1.60E+02	59.83	2.60E-02	2.26E-03
m	7	89.71	1.52E+02	59.60	2.60E-02	2.27E-03
m	8	92.87	2.98E+02	63.72	2.60E-02	2.27E-03
	9	129.49	1.15E+02	83.28	2.39E-02	2.29E-03
	10	185.83	2.28E+02	68.45	1.99E-02	2.40E-03
	11	209.15	7.47E+01	52.37	1.85E-02	2.36E-03
	12	215.15	4.06E+01	43.83	1.82E-02	2.35E-03
	13	239.01	6.75E+02	89.26	1.70E-02	2.31E-03
	14	270.17	7.00E+01	42.70	1.57E-02	2.26E-03
M	15	295.25	2.70E+02	46.79	1.47E-02	2.21E-03
m	16	300.16	3.68E+01	36.62	1.45E-02	2.21E-03
	17	327.84	5.58E+01	50.32	1.37E-02	2.16E-03
	18	338.39	1.41E+02	57.30	1.33E-02	2.14E-03
	19	352.06	4.19E+02	60.70	1.30E-02	2.12E-03
	20	414.48	3.21E+01	39.65	1.15E-02	1.93E-03
	21	463.37	3.53E+01	37.89	1.05E-02	1.68E-03
	22	479.70	2.55E+01	31.16	1.03E-02	1.59E-03
	23	511.11	1.57E+02	47.90	9.76E-03	1.43E-03
	24	533.11	2.89E+01	27.00	9.44E-03	1.32E-03
	25	562.49	1.90E+01	22.07	9.05E-03	1.17E-03
	26	583.60	2.18E+02	47.20	8.78E-03	1.06E-03
	27	609.74	2.57E+02	52.20	8.48E-03	9.20E-04
	28	662.03	3.49E+01	35.89	7.93E-03	6.52E-04
	29	727.65	5.00E+01	32.62	7.34E-03	7.37E-04
	30	756.04	1.78E+01	21.70	7.11E-03	7.73E-04
M	31	764.65	1.40E+01	13.55	7.04E-03	7.84E-04
m	32	768.88	3.18E+01	28.06	7.01E-03	7.90E-04
m	33	772.88	2.77E+01	27.12	6.98E-03	7.95E-04
	34	794.13	3.01E+01	35.11	6.83E-03	8.22E-04

Analysis Report for 1606040-12
CP-5025 00-02

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	35	863.59	4.54E+01	41.18	6.37E-03	9.11E-04
	36	911.45	1.69E+02	35.83	6.09E-03	9.28E-04
	37	922.19	1.54E+01	19.50	6.03E-03	9.07E-04
M	38	965.25	3.54E+01	21.14	5.81E-03	8.19E-04
m	39	969.48	9.42E+01	26.29	5.79E-03	8.11E-04
	40	1120.47	6.98E+01	32.34	5.15E-03	5.05E-04
	41	1377.96	1.45E+01	18.00	4.41E-03	3.66E-04
	42	1408.41	1.95E+01	18.15	4.34E-03	3.68E-04
	43	1454.12	1.46E+01	10.58	4.25E-03	3.72E-04
	44	1461.45	5.95E+02	49.73	4.23E-03	3.72E-04
	45	1521.81	1.26E+01	12.45	4.12E-03	3.77E-04
	46	1544.13	9.65E+00	8.89	4.08E-03	3.79E-04
	47	1566.55	8.00E+00	5.66	4.04E-03	3.80E-04
	48	1595.10	1.10E+01	11.00	4.00E-03	3.83E-04
	49	1630.36	1.26E+01	13.86	3.94E-03	3.85E-04
	50	1698.17	4.33E+00	5.74	3.85E-03	3.90E-04
	51	1729.43	1.18E+01	11.69	3.81E-03	3.93E-04
	52	1765.15	6.58E+01	19.16	3.77E-03	3.96E-04
	53	1848.10	1.70E+01	8.25	3.69E-03	4.01E-04
	54	1889.82	7.50E+00	8.28	3.65E-03	4.01E-04
	55	2071.85	1.10E+01	6.63	3.52E-03	4.01E-04
	56	2205.14	1.35E+01	14.14	3.45E-03	4.01E-04
	57	2285.27	8.75E+00	7.00	3.43E-03	4.01E-04
	58	2411.04	5.94E+00	6.93	3.40E-03	4.01E-04
	59	2446.13	9.23E+00	7.75	3.40E-03	4.01E-04
	60	2615.08	9.50E+01	19.49	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 : 6/15/2016 7:26:50PM

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	12.94	1.98E+03	129.26			1.98E+03	1.29E+02
2	54.86	5.15E+01	60.21			5.15E+01	6.02E+01
3	63.45	1.46E+02	83.35	2.91E+01	8.34E+00	1.17E+02	8.38E+01
4	76.45	6.76E+02	151.59			6.76E+02	1.52E+02

: 00696

Analysis Report for 1606040-12

CP-5025 00-02

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
M	5	84.13	8.45E+01	34.99			8.45E+01	3.50E+01
m	6	87.13	1.60E+02	59.83			1.60E+02	5.98E+01
m	7	89.71	1.52E+02	59.60			1.52E+02	5.96E+01
m	8	92.87	2.98E+02	63.72	4.47E+01	7.30E+00	2.53E+02	6.41E+01
	9	129.49	1.15E+02	83.28			1.15E+02	8.33E+01
	10	185.83	2.28E+02	68.45	3.13E+01	6.95E+00	1.97E+02	6.88E+01
	11	209.15	7.47E+01	52.37			7.47E+01	5.24E+01
	12	215.15	4.06E+01	43.83			4.06E+01	4.38E+01
	13	239.01	6.75E+02	89.26	1.19E+01	7.10E+00	6.63E+02	8.95E+01
	14	270.17	7.00E+01	42.70			7.00E+01	4.27E+01
M	15	295.25	2.70E+02	46.79			2.70E+02	4.68E+01
m	16	300.16	3.68E+01	36.62			3.68E+01	3.66E+01
	17	327.84	5.58E+01	50.32			5.58E+01	5.03E+01
	18	338.39	1.41E+02	57.30			1.41E+02	5.73E+01
	19	352.06	4.19E+02	60.70	9.12E+00	4.79E+00	4.09E+02	6.09E+01
	20	414.48	3.21E+01	39.65			3.21E+01	3.96E+01
	21	463.37	3.53E+01	37.89			3.53E+01	3.79E+01
	22	479.70	2.55E+01	31.16			2.55E+01	3.12E+01
	23	511.11	1.57E+02	47.90	6.97E+01	5.00E+00	8.71E+01	4.82E+01
	24	533.11	2.89E+01	27.00			2.89E+01	2.70E+01
	25	562.49	1.90E+01	22.07			1.90E+01	2.21E+01
	26	583.60	2.18E+02	47.20	3.98E+00	3.57E+00	2.14E+02	4.73E+01
	27	609.74	2.57E+02	52.20	8.66E+00	3.90E+00	2.48E+02	5.23E+01
	28	662.03	3.49E+01	35.89			3.49E+01	3.59E+01
	29	727.65	5.00E+01	32.62			5.00E+01	3.26E+01
	30	756.04	1.78E+01	21.70			1.78E+01	2.17E+01
M	31	764.65	1.40E+01	13.55			1.40E+01	1.35E+01
m	32	768.88	3.18E+01	28.06			3.18E+01	2.81E+01
m	33	772.88	2.77E+01	27.12			2.77E+01	2.71E+01
	34	794.13	3.01E+01	35.11			3.01E+01	3.51E+01
	35	863.59	4.54E+01	41.18			4.54E+01	4.12E+01
	36	911.45	1.69E+02	35.83	2.01E+00	2.72E+00	1.67E+02	3.59E+01
	37	922.19	1.54E+01	19.50			1.54E+01	1.95E+01
M	38	965.25	3.54E+01	21.14			3.54E+01	2.11E+01
m	39	969.48	9.42E+01	26.29			9.42E+01	2.63E+01
	40	1120.47	6.98E+01	32.34			6.98E+01	3.23E+01
	41	1377.96	1.45E+01	18.00			1.45E+01	1.80E+01
	42	1408.41	1.95E+01	18.15			1.95E+01	1.82E+01
	43	1454.12	1.46E+01	10.58			1.46E+01	1.06E+01
	44	1461.45	5.95E+02	49.73	3.09E+00	1.97E+00	5.92E+02	4.98E+01
	45	1521.81	1.26E+01	12.45			1.26E+01	1.24E+01
	46	1544.13	9.65E+00	8.89			9.65E+00	8.89E+00
	47	1566.55	8.00E+00	5.66			8.00E+00	5.66E+00
	48	1595.10	1.10E+01	11.00			1.10E+01	1.10E+01
	49	1630.36	1.26E+01	13.86			1.26E+01	1.39E+01
	50	1698.17	4.33E+00	5.74			4.33E+00	5.74E+00
	51	1729.43	1.18E+01	11.69			1.18E+01	1.17E+01
	52	1765.15	6.58E+01	19.16	2.70E+00	1.86E+00	6.31E+01	1.92E+01
	53	1848.10	1.70E+01	8.25			1.70E+01	8.25E+00
	54	1889.82	7.50E+00	8.28			7.50E+00	8.28E+00
	55	2071.85	1.10E+01	6.63			1.10E+01	6.63E+00
	56	2205.14	1.35E+01	14.14			1.35E+01	1.41E+01
	57	2285.27	8.75E+00	7.00			8.75E+00	7.00E+00
	58	2411.04	5.94E+00	6.93			5.94E+00	6.93E+00

Analysis Report for 1606040-12
 CP-5025 00-02

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
59	2446.13	9.23E+00	7.75			9.23E+00	7.75E+00
60	2615.08	9.50E+01	19.49	3.07E+00	1.34E+00	9.19E+01	1.95E+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 : 6/15/2016 7:26:50PM
 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	12.94	1.98E+03	129.26			1.98E+03	1.29E+02
2	54.86	5.15E+01	60.21			5.15E+01	6.02E+01
3	63.45	1.46E+02	83.35	2.91E+01	8.34E+00	1.17E+02	8.38E+01
4	76.45	6.76E+02	151.59			6.76E+02	1.52E+02
M 5	84.13	8.45E+01	34.99			8.45E+01	3.50E+01
m 6	87.13	1.60E+02	59.83			1.60E+02	5.98E+01
m 7	89.71	1.52E+02	59.60			1.52E+02	5.96E+01
m 8	92.87	2.98E+02	63.72	4.47E+01	7.30E+00	2.53E+02	6.41E+01
9	129.49	1.15E+02	83.28			1.15E+02	8.33E+01
10	185.83	2.28E+02	68.45	3.13E+01	6.95E+00	1.97E+02	6.88E+01
11	209.15	7.47E+01	52.37			7.47E+01	5.24E+01
12	215.15	4.06E+01	43.83			4.06E+01	4.38E+01
13	239.01	6.75E+02	89.26	1.19E+01	7.10E+00	6.63E+02	8.95E+01
14	270.17	7.00E+01	42.70			7.00E+01	4.27E+01
M 15	295.25	2.70E+02	46.79			2.70E+02	4.68E+01
m 16	300.16	3.68E+01	36.62			3.68E+01	3.66E+01
17	327.84	5.58E+01	50.32			5.58E+01	5.03E+01
18	338.39	1.41E+02	57.30			1.41E+02	5.73E+01
19	352.06	4.19E+02	60.70	9.12E+00	4.79E+00	4.09E+02	6.09E+01
20	414.48	3.21E+01	39.65			3.21E+01	3.96E+01
21	463.37	3.53E+01	37.89			3.53E+01	3.79E+01
22	479.70	2.55E+01	31.16			2.55E+01	3.12E+01
23	511.11	1.57E+02	47.90	6.97E+01	5.00E+00	8.71E+01	4.82E+01
24	533.11	2.89E+01	27.00			2.89E+01	2.70E+01
25	562.49	1.90E+01	22.07			1.90E+01	2.21E+01
26	583.60	2.18E+02	47.20	3.98E+00	3.57E+00	2.14E+02	4.73E+01

Analysis Report for 1606040-12
CP-5025 00-02

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	27	609.74	2.57E+02	52.20	8.66E+00	3.90E+00	2.48E+02	5.23E+01
	28	662.03	3.49E+01	35.89			3.49E+01	3.59E+01
	29	727.65	5.00E+01	32.62			5.00E+01	3.26E+01
	30	756.04	1.78E+01	21.70			1.78E+01	2.17E+01
M	31	764.65	1.40E+01	13.55			1.40E+01	1.35E+01
m	32	768.88	3.18E+01	28.06			3.18E+01	2.81E+01
m	33	772.88	2.77E+01	27.12			2.77E+01	2.71E+01
	34	794.13	3.01E+01	35.11			3.01E+01	3.51E+01
	35	863.59	4.54E+01	41.18			4.54E+01	4.12E+01
	36	911.45	1.69E+02	35.83	2.01E+00	2.72E+00	1.67E+02	3.59E+01
	37	922.19	1.54E+01	19.50			1.54E+01	1.95E+01
M	38	965.25	3.54E+01	21.14			3.54E+01	2.11E+01
m	39	969.48	9.42E+01	26.29			9.42E+01	2.63E+01
	40	1120.47	6.98E+01	32.34			6.98E+01	3.23E+01
	41	1377.96	1.45E+01	18.00			1.45E+01	1.80E+01
	42	1408.41	1.95E+01	18.15			1.95E+01	1.82E+01
	43	1454.12	1.46E+01	10.58			1.46E+01	1.06E+01
	44	1461.45	5.95E+02	49.73	3.09E+00	1.97E+00	5.92E+02	4.98E+01
	45	1521.81	1.26E+01	12.45			1.26E+01	1.24E+01
	46	1544.13	9.65E+00	8.89			9.65E+00	8.89E+00
	47	1566.55	8.00E+00	5.66			8.00E+00	5.66E+00
	48	1595.10	1.10E+01	11.00			1.10E+01	1.10E+01
	49	1630.36	1.26E+01	13.86			1.26E+01	1.39E+01
	50	1698.17	4.33E+00	5.74			4.33E+00	5.74E+00
	51	1729.43	1.18E+01	11.69			1.18E+01	1.17E+01
	52	1765.15	6.58E+01	19.16	2.70E+00	1.86E+00	6.31E+01	1.92E+01
	53	1848.10	1.70E+01	8.25			1.70E+01	8.25E+00
	54	1889.82	7.50E+00	8.28			7.50E+00	8.28E+00
	55	2071.85	1.10E+01	6.63			1.10E+01	6.63E+00
	56	2205.14	1.35E+01	14.14			1.35E+01	1.41E+01
	57	2285.27	8.75E+00	7.00			8.75E+00	7.00E+00
	58	2411.04	5.94E+00	6.93			5.94E+00	6.93E+00
	59	2446.13	9.23E+00	7.75			9.23E+00	7.75E+00
	60	2615.08	9.50E+01	19.49	3.07E+00	1.34E+00	9.19E+01	1.95E+01

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

NUCLIDE IDENTIFICATION REPORT

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

IDENTIFIED NUCLIDES

Analysis Report for 1606040-12
CP-5025 00-02

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.937	1460.81 *	10.67	1.56E+01	1.93E+00
GA-67	0.902	93.31 *	35.70	5.41E+00	1.12E+01
		208.95 *	2.24	3.57E+01	6.66E+01
		300.22 *	16.00	3.14E+00	7.19E+00
CD-109	0.878	88.03 *	3.72	2.00E+00	7.79E-01
SN-126	0.969	87.57 *	37.00	1.98E-01	7.59E-02
CS-137	0.977	661.65 *	85.12	6.16E-02	6.36E-02
EU-155	0.325	86.50 *	30.90	2.38E-01	9.13E-02
		105.30	20.70		
TL-208	0.863	583.14 *	30.22	9.61E-01	2.42E-01
		860.37	4.48		
		2614.66 *	35.85	8.99E-01	2.18E-01
BI-212	0.736	727.17 *	11.80	6.88E-01	4.54E-01
		1620.62	2.75		
PB-212	0.979	238.63 *	44.60	1.04E+00	1.99E-01
		300.09 *	3.41	8.84E-01	8.89E-01
BI-214	0.962	609.31 *	46.30	7.53E-01	1.79E-01
		1120.29 *	15.10	1.07E+00	5.06E-01
		1764.49 *	15.80	1.26E+00	4.07E-01
		2204.22 *	4.98	9.35E-01	9.85E-01
PB-214	0.998	295.21 *	19.19	1.14E+00	2.61E-01
		351.92 *	37.19	1.01E+00	2.23E-01
RA-226	0.977	186.21 *	3.28	3.59E+00	6.70E+00
AC-228	0.982	338.32 *	11.40	1.10E+00	4.82E-01
		911.07 *	27.70	1.18E+00	3.11E-01
		969.11 *	16.60	1.17E+00	3.64E-01
TH-231	0.308	25.64	14.70		
		84.21 *	6.40	6.05E-01	2.55E-01
TH-234	0.996	63.29 *	3.80	1.55E+00	1.11E+00
NP-237	0.939	86.50 *	12.60	5.80E-01	2.23E-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 : 6/15/2016 7:26:50PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

Analysis Report for 1606040-12
CP-5025 00-02

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
1	12.94	5.49858E-01	3.26		
2	54.86	1.42985E-02	58.49		
4	76.45	1.87828E-01	11.21		
m 7	89.71	4.23215E-02	19.56		
9	129.49	3.20100E-02	36.13		
12	215.15	1.12665E-02	54.03		
14	270.17	1.94358E-02	30.51	Sum	
17	327.84	1.54920E-02	45.11	Tol.	LA-140
20	414.48	8.91249E-03	61.79	Tol.	SB-126
21	463.37	9.79604E-03	53.73	Tol.	SB-125
22	479.70	7.07540E-03	61.18		
23	511.11	2.41897E-02	27.65		
24	533.11	8.02315E-03	46.74		
25	562.49	5.28863E-03	57.97	Tol.	CS-134
30	756.04	4.94152E-03	61.00		
M 31	764.65	3.88897E-03	48.38	Tol.	AG-110M
m 32	768.88	8.82225E-03	44.18	Sum	
m 33	772.88	7.70785E-03	48.87		
34	794.13	8.35337E-03	58.38		
35	863.59	1.26111E-02	45.36		
37	922.19	4.28618E-03	63.19	Sum	
M 38	965.25	9.83757E-03	29.85		
41	1377.96	4.03153E-03	62.01		
42	1408.41	5.42042E-03	46.51	Tol.	EU-152
43	1454.12	4.04971E-03	36.30		
45	1521.81	3.49306E-03	49.50	Sum	
46	1544.13	2.68162E-03	46.03		
47	1566.55	2.22222E-03	35.36		
48	1595.10	3.05556E-03	50.00		
49	1630.36	3.49206E-03	55.11		
50	1698.17	1.20370E-03	66.28		
51	1729.43	3.28216E-03	49.48	Sum	
53	1848.10	4.72222E-03	24.25	Sum	
54	1889.82	2.08333E-03	55.18		
55	2071.85	3.05556E-03	30.15	Sum	
57	2285.27	2.43056E-03	40.00		
58	2411.04	1.64931E-03	58.34		
59	2446.13	2.56313E-03	41.97		

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 1606040-12
CP-5025 00-02

NUCLIDE IDENTIFICATION REPORT

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

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.93	1460.81 *		10.67	1.56E+01	1.93E+00
GA-67	0.90	93.31 *		35.70	5.41E+00	1.12E+01
		208.95 *		2.24	3.57E+01	6.66E+01
		300.22 *		16.00	3.14E+00	7.19E+00
		88.03 *		3.72	2.00E+00	7.79E-01
CD-109	0.87	87.57 *		37.00	1.98E-01	7.59E-02
SN-126	0.96	661.65 *		85.12	6.16E-02	6.36E-02
CS-137	0.97	86.50 *		30.90	2.38E-01	9.13E-02
		105.30		20.70		
EU-155	0.32	583.14 *		30.22	9.61E-01	2.42E-01
		860.37		4.48		
		2614.66 *		35.85	8.99E-01	2.18E-01
TL-208	0.86	727.17 *		11.80	6.88E-01	4.54E-01
		1620.62		2.75		
BI-212	0.73	238.63 *		44.60	1.04E+00	1.99E-01
		300.09 *		3.41	8.84E-01	8.89E-01
PB-212	0.97	609.31 *		46.30	7.53E-01	1.79E-01
		1120.29 *		15.10	1.07E+00	5.06E-01
		1764.49 *		15.80	1.26E+00	4.07E-01
		2204.22 *		4.98	9.35E-01	9.85E-01
BI-214	0.96	295.21 *		19.19	1.14E+00	2.61E-01
		351.92 *		37.19	1.01E+00	2.23E-01
PB-214	0.99	186.21 *		3.28	3.59E+00	6.70E+00
		338.32 *		11.40	1.10E+00	4.82E-01
RA-226	0.98	911.07 *		27.70	1.18E+00	3.11E-01
		969.11 *		16.60	1.17E+00	3.64E-01
		25.64		14.70		
TH-231	0.30	84.21 *		6.40	6.05E-01	2.55E-01
TH-234	0.99	63.29 *		3.80	1.55E+00	1.11E+00
NP-237	0.93	86.50 *		12.60	5.80E-01	2.23E-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 1606040-12
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INTERFERENCE CORRECTED REPORT

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments	
	K-40	0.937	1.56E+01	1.93E+00	
	GA-67	0.902	4.49E+00	7.85E+00	
?	CD-109	0.878	2.00E+00	7.79E-01	
?	SN-126	0.969	1.98E-01	7.59E-02	
	CS-137	0.977	6.16E-02	6.36E-02	
?	EU-155	0.325	2.38E-01	9.13E-02	
	TL-208	0.863	9.27E-01	1.62E-01	
	BI-212	0.736	6.88E-01	4.54E-01	
	PB-212	0.979	9.73E-01	1.95E-01	
	BI-214	0.962	8.59E-01	1.54E-01	
	PB-214	0.998	1.06E+00	1.70E-01	
	RA-226	0.977	3.59E+00	6.70E+00	
	AC-228	0.982	1.16E+00	2.12E-01	
	TH-231	0.308	6.05E-01	2.55E-01	
	TH-234	0.996	1.55E+00	1.11E+00	
?	NP-237	0.939	5.80E-01	2.23E-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 1606040-12
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UNIDENTIFIED PEAKS

Peak Locate Performed on : 6/15/2016 7:26:50PM
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	12.94	5.49858E-01	3.26		
2	54.86	1.42985E-02	58.49		
4	76.45	1.87828E-01	11.21		
m 7	89.71	4.23215E-02	19.56		
9	129.49	3.20100E-02	36.13		
12	215.15	1.12665E-02	54.03		
14	270.17	1.94358E-02	30.51	Sum	
17	327.84	1.54920E-02	45.11	Tol.	LA-140
20	414.48	8.91249E-03	61.79	Tol.	SB-126
21	463.37	9.79604E-03	53.73	Tol.	SB-125
22	479.70	7.07540E-03	61.18		
23	511.11	2.41897E-02	27.65		
24	533.11	8.02315E-03	46.74		
25	562.49	5.28863E-03	57.97	Tol.	CS-134
30	756.04	4.94152E-03	61.00		
M 31	764.65	3.88897E-03	48.38	Tol.	AG-110M
m 32	768.88	8.82225E-03	44.18	Sum	
m 33	772.88	7.70785E-03	48.87		
34	794.13	8.35337E-03	58.38		
35	863.59	1.26111E-02	45.36		
37	922.19	4.28618E-03	63.19	Sum	
M 38	965.25	9.83757E-03	29.85		
41	1377.96	4.03153E-03	62.01		
42	1408.41	5.42042E-03	46.51	Tol.	EU-152
43	1454.12	4.04971E-03	36.30		
45	1521.81	3.49306E-03	49.50	Sum	
46	1544.13	2.68162E-03	46.03		
47	1566.55	2.22222E-03	35.36		
48	1595.10	3.05556E-03	50.00		
49	1630.36	3.49206E-03	55.11		
50	1698.17	1.20370E-03	66.28		
51	1729.43	3.28216E-03	49.48	Sum	
53	1848.10	4.72222E-03	24.25	Sum	
54	1889.82	2.08333E-03	55.18		
55	2071.85	3.05556E-03	30.15	Sum	

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Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
57	2285.27	2.43056E-03	40.00		
58	2411.04	1.64931E-03	58.34		
59	2446.13	2.56313E-03	41.97		

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	3.37E-02	5.52E-01	5.52E-01
+	NA-22	1274.54	99.94	1.51E-02	7.49E-02	7.49E-02
+	NA-24	1368.53	99.99	-3.71E+04	6.08E+04	1.28E+05
		2754.09	99.86	-2.48E+04		6.08E+04
+	AL-26	1808.65	99.76	1.82E-02	5.58E-02	5.58E-02
+	K-40	1460.81	* 10.67	1.56E+01	5.21E-01	5.21E-01
+	@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88	94.40	7.15E-03	4.72E-02	4.72E-02
		78.34	96.00	2.41E-01		6.59E-02
+	SC-46	889.25	99.98	9.89E-03	7.40E-02	7.40E-02
		1120.51	99.99	1.84E-01		1.32E-01
+	V-48	983.52	99.98	-1.83E-02	1.17E-01	1.17E-01
		1312.10	97.50	1.41E-02		1.26E-01
+	CR-51	320.08	9.83	2.20E-01	6.79E-01	6.79E-01
+	MN-54	834.83	99.97	-5.50E-03	7.59E-02	7.59E-02
+	CO-56	846.75	99.96	-1.23E-02	6.79E-02	6.79E-02
		1037.75	14.03	-6.79E-02		5.59E-01
		1238.25	67.00	1.17E-01		1.68E-01
		1771.40	15.51	5.27E-02		3.64E-01
		2598.48	16.90	-4.14E-02		2.51E-01
+	CO-57	122.06	85.51	2.57E-02	5.27E-02	5.27E-02
		136.48	10.60	-2.03E-01		3.98E-01
+	CO-58	810.76	99.40	-3.51E-03	8.00E-02	8.00E-02
+	FE-59	1099.22	56.50	-1.37E-01	1.42E-01	1.42E-01
		1291.56	43.20	4.99E-02		2.03E-01
+	CO-60	1173.22	100.00	1.63E-02	7.36E-02	8.00E-02

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Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	CO-60	1332.49	100.00	1.36E-02	7.36E-02
+	ZN-65	1115.52	50.75	1.60E-02	1.75E-01
+	GA-67	93.31	* 35.70	5.41E+00	4.93E+00
		208.95	* 2.24	3.57E+01	4.02E+01
		300.22	* 16.00	3.14E+00	1.10E+01
+	SE-75	121.11	16.70	1.80E-01	7.43E-02
		136.00	59.20	1.63E-02	7.43E-02
		264.65	59.80	-2.14E-02	7.69E-02
		279.53	25.20	-7.30E-02	1.90E-01
		400.65	11.40	8.45E-02	4.76E-01
+	RB-82	776.52	13.00	8.59E-02	7.91E-01
+	RB-83	520.41	46.00	-1.61E-02	1.21E-01
		529.64	30.30	2.25E-02	1.88E-01
		552.65	16.40	1.59E-01	3.62E-01
+	KR-85	513.99	0.43	2.76E+00	1.48E+01
+	SR-85	513.99	99.27	1.39E-02	7.45E-02
+	Y-88	898.02	93.40	-1.65E-02	5.60E-02
		1836.01	99.38	7.65E-03	5.60E-02
+	NB-93M	16.57	9.43	2.64E+01	7.38E+01
+	NB-94	702.63	100.00	-2.78E-02	6.83E-02
		871.10	100.00	1.07E-02	6.83E-02
+	NB-95	765.79	99.81	5.00E-02	1.10E-01
+	NB-95M	235.69	25.00	-1.08E-01	3.35E+00
+	ZR-95	724.18	43.70	1.71E-02	1.40E-01
		756.72	55.30	3.04E-02	1.40E-01
+	MO-99	181.06	6.20	4.36E+00	1.43E+01
		739.58	12.80	-3.61E-01	1.43E+01
		778.00	4.50	-2.88E+00	3.95E+01
+	RU-103	497.08	89.00	-3.32E-03	6.81E-02
+	RU-106	621.84	9.80	4.48E-02	6.62E-01
+	AG-108M	433.93	89.90	-6.07E-03	5.04E-02
		614.37	90.40	0.00E+00	7.01E-02
		722.95	90.50	8.80E-03	7.12E-02
+	CD-109	88.03	* 3.72	2.00E+00	2.89E+00
+	AG-110M	657.75	93.14	4.52E-03	7.71E-02
		677.61	10.53	-7.25E-02	6.36E-01
		706.67	16.46	2.09E-01	4.60E-01
		763.93	21.98	2.17E-02	3.49E-01
		884.67	71.63	-3.92E-02	8.98E-02
		1384.27	23.94	1.06E-01	3.11E-01
+	CD-113M	263.70	0.02	-4.38E+01	1.88E+02
+	SN-113	255.12	1.93	7.78E-01	7.93E-02
		391.69	64.90	-2.25E-02	7.93E-02
+	TE123M	159.00	84.10	-2.56E-03	5.54E-02
+	SB-124	602.71	97.87	-7.65E-03	7.76E-02
		645.85	7.26	2.48E-02	9.89E-01
		722.78	11.10	8.35E-02	6.76E-01
		1691.02	49.00	4.97E-02	1.22E-01

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	I-125	35.49	6.49	-1.49E-01	1.44E+00	1.44E+00
+	SB-125	176.33	6.89	-3.60E-01	1.62E-01	6.64E-01
		427.89	29.33	-3.32E-02		1.62E-01
		463.38	10.35	4.74E-01		5.57E-01
		600.56	17.80	3.80E-02		3.59E-01
		635.90	11.32	2.11E-01		5.54E-01
+	SB-126	414.70	83.30	1.30E-01	1.30E-01	1.36E-01
		666.33	99.60	-3.18E-02		1.30E-01
		695.00	99.60	8.03E-03		1.45E-01
		720.50	53.80	9.05E-02		2.58E-01
+	SN-126	87.57	* 37.00	1.98E-01	2.84E-01	2.84E-01
+	SB-127	473.00	25.00	-7.37E-01	1.85E+00	1.85E+00
		685.20	35.70	-5.18E-01		1.95E+00
		783.80	14.70	1.30E+00		5.08E+00
+	I-129	29.78	57.00	3.08E-02	2.51E-01	2.51E-01
		33.60	13.20	-1.80E-01		6.98E-01
		39.58	7.52	-1.87E-01		8.38E-01
+	I-131	284.30	6.05	-5.05E-01	1.77E-01	2.22E+00
		364.48	81.20	-1.32E-02		1.77E-01
		636.97	7.26	1.75E+00		2.75E+00
		722.89	1.80	1.38E+00		1.12E+01
+	TE-132	49.72	13.10	3.95E+00	9.57E-01	6.04E+00
		228.16	88.00	1.34E-01		9.57E-01
+	BA-133	81.00	33.00	6.87E-02	7.40E-02	1.19E-01
		302.84	17.80	-2.87E-01		2.59E-01
		356.01	60.00	6.27E-03		7.40E-02
+	I-133	529.87	86.30	5.05E+02	2.55E+03	2.55E+03
+	XE-133	81.00	38.00	3.42E-01	5.94E-01	5.94E-01
+	CS-134	563.23	8.38	6.30E-02	6.95E-02	6.31E-01
		569.32	15.43	1.64E-01		3.77E-01
		604.70	97.60	-5.48E-03		6.95E-02
		795.84	85.40	3.83E-02		8.68E-02
		801.93	8.73	-4.83E-01		7.39E-01
+	CS-135	268.24	16.00	-2.17E-02	3.06E-01	3.06E-01
+	I-135	1131.51	22.50	-2.25E+11	6.96E+13	1.05E+14
		1260.41	28.60	-3.85E+13		6.96E+13
		1678.03	9.54	5.62E+13		1.95E+14
+	CS-136	153.22	7.46	8.37E-01	1.29E-01	1.30E+00
		163.89	4.61	1.23E-01		2.03E+00
		176.55	13.56	8.47E-02		6.89E-01
		273.65	12.66	2.45E-02		7.17E-01
		340.57	48.50	-1.17E-01		2.43E-01
		818.50	99.70	-3.60E-03		1.29E-01
		1048.07	79.60	-5.42E-02		1.76E-01
		1235.34	19.70	2.76E-01		1.02E+00
+	CS-137	661.65	* 85.12	6.16E-02	1.03E-01	1.03E-01
+	LA-138	788.74	34.00	7.93E-03	9.22E-02	2.01E-01
		1435.80	66.00	3.32E-02		9.22E-02
+	CE-139	165.85	80.35	1.69E-02	6.32E-02	6.32E-02

Analysis Report for 1606040-12
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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	BA-140	162.64	6.70	7.92E-01	3.93E-01	1.45E+00
		304.84	4.50	3.21E-01		2.07E+00
		423.70	3.20	1.01E+00		3.16E+00
		437.55	2.00	-1.20E+00		4.82E+00
		537.32	25.00	1.47E-01		3.93E-01
+	LA-140	328.77	20.50	3.26E-01	1.60E-01	5.60E-01
		487.03	45.50	3.28E-02		2.29E-01
		815.85	23.50	1.10E-01		5.64E-01
		1596.49	95.49	1.28E-02		1.60E-01
+	CE-141	145.44	48.40	1.14E-01	1.26E-01	1.26E-01
+	CE-143	57.36	11.80	-1.50E+02	1.25E+02	2.79E+02
		293.26	42.00	2.56E+01		1.25E+02
		664.55	5.20	-2.36E+01		1.19E+03
+	CE-144	133.54	10.80	1.36E-01	3.85E-01	3.85E-01
+	PM-144	476.78	42.00	7.20E-03	6.47E-02	1.18E-01
		618.01	98.60	-1.07E-03		6.47E-02
		696.49	99.49	7.92E-03		7.03E-02
+	PM-145	36.85	21.70	8.32E-02	1.82E-01	3.45E-01
		37.36	39.70	4.39E-02		1.82E-01
		42.30	15.10	2.02E-01		3.76E-01
		72.40	2.31	6.63E-01		1.97E+00
+	PM-146	453.90	39.94	1.08E-02	1.25E-01	1.25E-01
		735.90	14.01	-2.05E-01		4.52E-01
		747.13	13.10	-8.52E-02		4.65E-01
+	ND-147	91.11	28.90	6.38E-01	5.11E-01	5.11E-01
		531.02	13.10	1.39E-02		1.00E+00
+	PM-149	285.90	3.10	-4.46E+01	9.07E+01	9.07E+01
+	EU-152	121.78	20.50	1.04E-01	2.13E-01	2.13E-01
		244.69	5.40	-2.63E+00		8.17E-01
		344.27	19.13	1.09E-01		2.47E-01
		778.89	9.20	-6.45E-02		7.13E-01
		964.01	10.40	-1.53E+00		8.48E-01
		1085.78	7.22	3.94E-01		1.10E+00
		1112.02	9.60	-6.23E-02		7.79E-01
		1407.95	14.94	4.05E-01		5.11E-01
+	GD-153	97.43	31.30	-3.44E-03	1.43E-01	1.43E-01
		103.18	22.20	-1.26E-01		2.02E-01
+	EU-154	123.07	40.50	3.79E-02	1.06E-01	1.06E-01
		723.30	19.70	4.06E-02		3.28E-01
		873.19	11.50	3.51E-02		5.75E-01
		996.32	10.30	-3.33E-01		6.27E-01
		1004.76	17.90	3.36E-01		4.30E-01
		1274.45	35.50	4.22E-02		2.09E-01
+	EU-155	86.50	* 30.90	2.38E-01	2.18E-01	3.42E-01
		105.30	20.70	1.58E-01		2.18E-01
+	EU-156	811.77	10.40	-9.20E-01	1.11E+00	1.11E+00
		1153.47	7.20	-1.05E+00		2.08E+00
		1230.71	8.90	3.24E-01		1.82E+00
+	HO-166M	184.41	72.60	8.39E-02	8.25E-02	8.25E-02

Analysis Report for 1606040-12
CP-5025 00-02

Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
HO-166M	280.45	29.60	-5.77E-02	8.25E-02	1.50E-01
	410.94	11.10	-1.26E-02		4.80E-01
	711.69	54.10	-3.06E-02		1.18E-01
+ TM-171	66.72	0.14	1.13E+01	3.16E+01	3.16E+01
+ HF-172	81.75	4.52	3.95E-01	3.75E-01	8.58E-01
	125.81	11.30	-6.19E-01		3.75E-01
+ LU-172	181.53	20.60	8.26E-02	4.79E-01	8.96E-01
	810.06	16.63	-7.24E-02		1.65E+00
	912.12	15.25	8.93E+00		3.61E+00
	1093.66	62.50	2.56E-01		4.79E-01
+ LU-173	100.72	5.24	-3.91E-02	2.52E-01	8.34E-01
	272.11	21.20	6.35E-03		2.52E-01
+ HF-175	343.40	84.00	-1.68E-02	6.33E-02	6.33E-02
+ LU-176	88.34	13.30	6.16E-01	4.75E-02	4.48E-01
	201.83	86.00	2.02E-02		5.50E-02
	306.78	94.00	5.37E-03		4.75E-02
+ TA-182	67.75	41.20	1.77E-02	1.17E-01	1.17E-01
	1121.30	34.90	4.30E-01		3.58E-01
	1189.05	16.23	-3.29E-02		5.31E-01
	1221.41	26.98	1.00E-01		3.85E-01
	1231.02	11.44	9.44E-02		8.23E-01
+ IR-192	308.46	29.68	8.58E-02	1.14E-01	1.68E-01
	468.07	48.10	2.40E-02		1.14E-01
+ HG-203	279.19	77.30	7.38E-03	7.25E-02	7.25E-02
+ BI-207	569.67	97.72	2.56E-02	5.89E-02	5.89E-02
	1063.62	74.90	2.07E-02		9.30E-02
+ TL-208	583.14	* 30.22	9.61E-01	8.68E-02	2.87E-01
	860.37	4.48	1.15E+00		1.71E+00
	2614.66	* 35.85	8.99E-01		8.68E-02
+ BI-210M	262.00	45.00	3.33E-02	1.00E-01	1.00E-01
	300.00	23.00	1.87E-01		2.22E-01
+ PB-210	46.50	4.25	1.14E+00	1.36E+00	1.36E+00
+ PB-211	404.84	2.90	-4.57E-01	1.77E+00	1.77E+00
	831.96	2.90	-3.20E-01		2.38E+00
+ BI-212	727.17	* 11.80	6.88E-01	7.02E-01	7.02E-01
	1620.62	2.75	-4.19E-01		2.27E+00
+ PB-212	238.63	* 44.60	1.04E+00	1.94E-01	1.94E-01
	300.09	* 3.41	8.84E-01		3.10E+00
+ BI-214	609.31	* 46.30	7.53E-01	2.17E-01	2.17E-01
	1120.29	* 15.10	1.07E+00		7.39E-01
	1764.49	* 15.80	1.26E+00		4.12E-01
	2204.22	* 4.98	9.35E-01		1.56E+00
+ PB-214	295.21	* 19.19	1.14E+00	1.91E-01	5.44E-01
	351.92	* 37.19	1.01E+00		1.91E-01
+ RN-219	401.80	6.50	4.72E-02	7.92E-01	7.92E-01
+ RA-223	323.87	3.88	1.80E-01	1.24E+00	1.24E+00
+ RA-224	240.98	3.95	1.09E+01	2.54E+00	2.54E+00
+ RA-225	40.00	31.00	-8.25E-02	3.69E-01	3.69E-01

Analysis Report for 1606040-12
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	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	RA-226	186.21	*	3.28	3.59E+00	1.93E+00	1.93E+00
+	TH-227	50.10		8.40	3.65E-01	5.58E-01	5.58E-01
		236.00		11.50	-1.85E-02		5.74E-01
		256.20		6.30	-1.54E-01		7.21E-01
+	AC-228	338.32	*	11.40	1.10E+00	3.09E-01	6.93E-01
		911.07	*	27.70	1.18E+00		3.09E-01
		969.11	*	16.60	1.17E+00		1.04E+00
+	TH-230	48.44		16.90	-3.52E-01	2.82E-01	2.82E-01
		62.85		4.60	2.16E+00		1.17E+00
		67.67		0.37	1.82E+00		1.21E+01
+	PA-231	283.67		1.60	-6.09E-01	2.00E+00	2.68E+00
		302.67		2.30	-2.22E+00		2.00E+00
+	TH-231	25.64		14.70	6.95E-01	1.62E+00	1.97E+00
		84.21	*	6.40	6.05E-01		1.62E+00
+	PA-233	311.98		38.60	5.49E-03	1.51E-01	1.51E-01
+	PA-234	131.20		20.40	1.37E-01	2.24E-01	2.24E-01
		733.99		8.80	2.62E-02		7.52E-01
		946.00		12.00	-3.96E-01		5.33E-01
+	PA-234M	1001.03		0.92	4.01E+00	8.39E+00	8.39E+00
+	TH-234	63.29	*	3.80	1.55E+00	1.80E+00	1.80E+00
+	U-235	143.76		10.50	-1.53E-02	4.35E-01	4.35E-01
		163.35		4.70	5.52E-01		1.01E+00
		205.31		4.70	-3.46E-02		9.82E-01
+	NP-237	86.50	*	12.60	5.80E-01	8.35E-01	8.35E-01
+	NP-239	106.10		22.70	6.57E+00	9.79E+00	9.79E+00
		228.18		10.70	3.24E+00		2.32E+01
		277.60		14.10	4.34E+00		1.64E+01
+	AM-241	59.54		35.90	4.78E-02	1.22E-01	1.22E-01
+	AM-243	74.67		66.00	-2.88E-01	8.62E-02	8.62E-02
+	CM-243	209.75		3.29	1.51E+00	3.36E-01	1.56E+00
		228.14		10.60	6.65E-02		4.76E-01
		277.60		14.00	8.88E-02		3.36E-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 1606040-12
CP-5025 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	5.52E-01	5.52E-01	3.37E-02	2.58E-01
NA-22	1274.54	99.94	7.49E-02	7.49E-02	1.51E-02	3.39E-02
NA-24	1368.53	99.99	1.28E+05	6.08E+04	-3.71E+04	5.55E+04
	2754.09	99.86	6.08E+04		-2.48E+04	1.92E+04
AL-26	1808.65	99.76	5.58E-02	5.58E-02	1.82E-02	2.36E-02
+ K-40	1460.81	* 10.67	5.21E-01	5.21E-01	1.56E+01	2.25E-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	4.72E-02	4.72E-02	7.15E-03	2.29E-02
	78.34	96.00	6.59E-02		2.41E-01	3.23E-02
SC-46	889.25	99.98	7.40E-02	7.40E-02	9.89E-03	3.41E-02
	1120.51	99.99	1.32E-01		1.84E-01	6.26E-02
V-48	983.52	99.98	1.17E-01	1.17E-01	-1.83E-02	5.37E-02
	1312.10	97.50	1.26E-01		1.41E-02	5.64E-02
CR-51	320.08	9.83	6.79E-01	6.79E-01	2.20E-01	3.23E-01
MN-54	834.83	99.97	7.59E-02	7.59E-02	-5.50E-03	3.54E-02
CO-56	846.75	99.96	6.79E-02	6.79E-02	-1.23E-02	3.12E-02
	1037.75	14.03	5.59E-01		-6.79E-02	2.56E-01
	1238.25	67.00	1.68E-01		1.17E-01	7.85E-02
	1771.40	15.51	3.64E-01		5.27E-02	1.51E-01
	2598.48	16.90	2.51E-01		-4.14E-02	9.39E-02
CO-57	122.06	85.51	5.27E-02	5.27E-02	2.57E-02	2.56E-02
	136.48	10.60	3.98E-01		-2.03E-01	1.92E-01
CO-58	810.76	99.40	8.00E-02	8.00E-02	-3.51E-03	3.72E-02
FE-59	1099.22	56.50	1.42E-01	1.42E-01	-1.37E-01	6.41E-02
	1291.56	43.20	2.03E-01		4.99E-02	9.18E-02
CO-60	1173.22	100.00	8.00E-02	7.36E-02	1.63E-02	3.67E-02
	1332.49	100.00	7.36E-02		1.36E-02	3.32E-02
ZN-65	1115.52	50.75	1.75E-01	1.75E-01	1.60E-02	8.13E-02
+ GA-67	93.31	* 35.70	4.93E+00	4.93E+00	5.41E+00	2.44E+00
	208.95	* 2.24	4.02E+01		3.57E+01	1.94E+01
	300.22	* 16.00	1.10E+01		3.14E+00	5.38E+00
SE-75	121.11	16.70	2.83E-01	7.43E-02	1.80E-01	1.37E-01
	136.00	59.20	7.43E-02		1.63E-02	3.59E-02
	264.65	59.80	7.69E-02		-2.14E-02	3.66E-02
	279.53	25.20	1.90E-01		-7.30E-02	9.05E-02
	400.65	11.40	4.76E-01		8.45E-02	2.25E-01
RB-82	776.52	13.00	7.91E-01	7.91E-01	8.59E-02	3.70E-01
RB-83	520.41	46.00	1.21E-01	1.21E-01	-1.61E-02	5.65E-02
	529.64	30.30	1.88E-01		2.25E-02	8.77E-02
	552.65	16.40	3.62E-01		1.59E-01	1.69E-01
KR-85	513.99	0.43	1.48E+01	1.48E+01	2.76E+00	7.03E+00
SR-85	513.99	99.27	7.45E-02	7.45E-02	1.39E-02	3.53E-02
Y-88	898.02	93.40	6.90E-02	5.60E-02	-1.65E-02	3.15E-02
	1836.01	99.38	5.60E-02		7.65E-03	2.32E-02
NB-93M	16.57	9.43	7.38E+01	7.38E+01	2.64E+01	3.58E+01

Analysis Report for 1606040-12
CP-5025 00-02

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
NB-94	702.63	100.00	7.03E-02	6.83E-02	-2.78E-02	3.30E-02
	871.10	100.00	6.83E-02		1.07E-02	3.16E-02
NB-95	765.79	99.81	1.10E-01	1.10E-01	5.00E-02	5.20E-02
NB-95M	235.69	25.00	3.35E+00	3.35E+00	-1.08E-01	1.63E+00
ZR-95	724.18	43.70	2.06E-01	1.40E-01	1.71E-02	9.73E-02
	756.72	55.30	1.40E-01		3.04E-02	6.51E-02
MO-99	181.06	6.20	2.13E+01	1.43E+01	4.36E+00	1.03E+01
	739.58	12.80	1.43E+01		-3.61E-01	6.66E+00
	778.00	4.50	3.95E+01		-2.88E+00	1.83E+01
RU-103	497.08	89.00	6.81E-02	6.81E-02	-3.32E-03	3.18E-02
RU-106	621.84	9.80	6.62E-01	6.62E-01	4.48E-02	3.11E-01
AG-108M	433.93	89.90	5.04E-02	5.04E-02	-6.07E-03	2.36E-02
	614.37	90.40	7.01E-02		0.00E+00	3.29E-02
	722.95	90.50	7.12E-02		8.80E-03	3.32E-02
+ CD-109	88.03	* 3.72	2.89E+00	2.89E+00	2.00E+00	1.43E+00
AG-110M	657.75	93.14	7.71E-02	7.71E-02	4.52E-03	3.63E-02
	677.61	10.53	6.36E-01		-7.25E-02	2.98E-01
	706.67	16.46	4.60E-01		2.09E-01	2.17E-01
	763.93	21.98	3.49E-01		2.17E-02	1.64E-01
	884.67	71.63	8.98E-02		-3.92E-02	4.11E-02
	1384.27	23.94	3.11E-01		1.06E-01	1.39E-01
	263.70	0.02	1.88E+02	1.88E+02	-4.38E+01	8.94E+01
SN-113	255.12	1.93	2.62E+00	7.93E-02	7.78E-01	1.25E+00
	391.69	64.90	7.93E-02		-2.25E-02	3.74E-02
TE123M	159.00	84.10	5.54E-02	5.54E-02	-2.56E-03	2.68E-02
SB-124	602.71	97.87	7.76E-02	7.76E-02	-7.65E-03	3.65E-02
	645.85	7.26	9.89E-01		2.48E-02	4.63E-01
	722.78	11.10	6.76E-01		8.35E-02	3.15E-01
	1691.02	49.00	1.22E-01		4.97E-02	5.12E-02
I-125	35.49	6.49	1.44E+00	1.44E+00	-1.49E-01	6.90E-01
SB-125	176.33	6.89	6.64E-01	1.62E-01	-3.60E-01	3.21E-01
	427.89	29.33	1.62E-01		-3.32E-02	7.61E-02
	463.38	10.35	5.57E-01		4.74E-01	2.64E-01
	600.56	17.80	3.59E-01		3.80E-02	1.69E-01
	635.90	11.32	5.54E-01		2.11E-01	2.59E-01
SB-126	414.70	83.30	1.36E-01	1.30E-01	1.30E-01	6.46E-02
	666.33	99.60	1.30E-01		-3.18E-02	6.05E-02
	695.00	99.60	1.45E-01		8.03E-03	6.80E-02
	720.50	53.80	2.58E-01		9.05E-02	1.20E-01
+ SN-126	87.57	* 37.00	2.84E-01	2.84E-01	1.98E-01	1.41E-01
SB-127	473.00	25.00	1.85E+00	1.85E+00	-7.37E-01	8.58E-01
	685.20	35.70	1.95E+00		-5.18E-01	9.13E-01
	783.80	14.70	5.08E+00		1.30E+00	2.37E+00
I-129	29.78	57.00	2.51E-01	2.51E-01	3.08E-02	1.20E-01
	33.60	13.20	6.98E-01		-1.80E-01	3.34E-01
	39.58	7.52	8.38E-01		-1.87E-01	4.02E-01
I-131	284.30	6.05	2.22E+00	1.77E-01	-5.05E-01	1.06E+00
	364.48	81.20	1.77E-01		-1.32E-02	8.36E-02
	636.97	7.26	2.75E+00		1.75E+00	1.29E+00
	722.89	1.80	1.12E+01		1.38E+00	5.22E+00
TE-132	49.72	13.10	6.04E+00	9.57E-01	3.95E+00	2.91E+00
	228.16	88.00	9.57E-01		1.34E-01	4.61E-01
BA-133	81.00	33.00	1.19E-01	7.40E-02	6.87E-02	5.77E-02

Analysis Report for 1606040-12
CP-5025 00-02

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)	
BA-133	302.84	17.80	2.59E-01	7.40E-02	-2.87E-01	1.23E-01	
	356.01	60.00	7.40E-02		6.27E-03	3.49E-02	
I-133	529.87	86.30	2.55E+03	2.55E+03	5.05E+02	1.20E+03	
XE-133	81.00	38.00	5.94E-01	5.94E-01	3.42E-01	2.87E-01	
CS-134	563.23	8.38	6.31E-01	6.95E-02	6.30E-02	2.94E-01	
	569.32	15.43	3.77E-01		1.64E-01	1.77E-01	
	604.70	97.60	6.95E-02		-5.48E-03	3.28E-02	
	795.84	85.40	8.68E-02		3.83E-02	4.06E-02	
	801.93	8.73	7.39E-01		-4.83E-01	3.42E-01	
CS-135	268.24	16.00	3.06E-01	3.06E-01	-2.17E-02	1.46E-01	
I-135	1131.51	22.50	1.05E+14	6.96E+13	-2.25E+11	4.83E+13	
	1260.41	28.60	6.96E+13		-3.85E+13	3.13E+13	
	1678.03	9.54	1.95E+14		5.62E+13	8.48E+13	
CS-136	153.22	7.46	1.30E+00	1.29E-01	8.37E-01	6.31E-01	
	163.89	4.61	2.03E+00		1.23E-01	9.85E-01	
	176.55	13.56	6.89E-01		8.47E-02	3.33E-01	
	273.65	12.66	7.17E-01		2.45E-02	3.42E-01	
	340.57	48.50	2.43E-01		-1.17E-01	1.16E-01	
	818.50	99.70	1.29E-01		-3.60E-03	5.98E-02	
	1048.07	79.60	1.76E-01		-5.42E-02	8.03E-02	
	1235.34	19.70	1.02E+00		2.76E-01	4.77E-01	
+	CS-137	661.65	* 85.12	1.03E-01	1.03E-01	6.16E-02	4.92E-02
LA-138	788.74	34.00	2.01E-01	9.22E-02	7.93E-03	9.35E-02	
	1435.80	66.00	9.22E-02		3.32E-02	4.04E-02	
CE-139	165.85	80.35	6.32E-02	6.32E-02	1.69E-02	3.06E-02	
BA-140	162.64	6.70	1.45E+00	3.93E-01	7.92E-01	7.00E-01	
	304.84	4.50	2.07E+00		3.21E-01	9.84E-01	
	423.70	3.20	3.16E+00		1.01E+00	1.49E+00	
	437.55	2.00	4.82E+00		-1.20E+00	2.26E+00	
	537.32	25.00	3.93E-01		1.47E-01	1.83E-01	
	537.32	25.00	3.93E-01		1.47E-01	1.83E-01	
LA-140	328.77	20.50	5.60E-01	1.60E-01	3.26E-01	2.68E-01	
	487.03	45.50	2.29E-01		3.28E-02	1.07E-01	
	815.85	23.50	5.64E-01		1.10E-01	2.61E-01	
	1596.49	95.49	1.60E-01		1.28E-02	7.14E-02	
CE-141	145.44	48.40	1.26E-01	1.26E-01	1.14E-01	6.13E-02	
CE-143	57.36	11.80	2.79E+02	1.25E+02	-1.50E+02	1.35E+02	
	293.26	42.00	1.25E+02		2.56E+01	6.04E+01	
	664.55	5.20	1.19E+03		-2.36E+01	5.66E+02	
CE-144	133.54	10.80	3.85E-01	3.85E-01	1.36E-01	1.86E-01	
PM-144	476.78	42.00	1.18E-01	6.47E-02	7.20E-03	5.53E-02	
	618.01	98.60	6.47E-02		-1.07E-03	3.03E-02	
	696.49	99.49	7.03E-02		7.92E-03	3.29E-02	
PM-145	36.85	21.70	3.45E-01	1.82E-01	8.32E-02	1.66E-01	
	37.36	39.70	1.82E-01		4.39E-02	8.74E-02	
	42.30	15.10	3.76E-01		2.02E-01	1.80E-01	
	72.40	2.31	1.97E+00		6.63E-01	9.57E-01	
PM-146	453.90	39.94	1.25E-01	1.25E-01	1.08E-02	5.86E-02	
	735.90	14.01	4.52E-01		-2.05E-01	2.10E-01	
	747.13	13.10	4.65E-01		-8.52E-02	2.15E-01	
ND-147	91.11	28.90	5.11E-01	5.11E-01	6.38E-01	2.51E-01	
	531.02	13.10	1.00E+00		1.39E-02	4.72E-01	
PM-149	285.90	3.10	9.07E+01	9.07E+01	-4.46E+01	4.32E+01	
EU-152	121.78	20.50	2.13E-01	2.13E-01	1.04E-01	1.03E-01	

Analysis Report for 1606040-12
CP-5025 00-02

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
EU-152	244.69	5.40	8.17E-01	2.13E-01	-2.63E+00	3.91E-01
	344.27	19.13	2.47E-01		1.09E-01	1.17E-01
	778.89	9.20	7.13E-01		-6.45E-02	3.31E-01
	964.01	10.40	8.48E-01		-1.53E+00	3.97E-01
	1085.78	7.22	1.10E+00		3.94E-01	5.09E-01
	1112.02	9.60	7.79E-01		-6.23E-02	3.57E-01
	1407.95	14.94	5.11E-01		4.05E-01	2.30E-01
GD-153	97.43	31.30	1.43E-01	1.43E-01	-3.44E-03	6.96E-02
	103.18	22.20	2.02E-01		-1.26E-01	9.78E-02
EU-154	123.07	40.50	1.06E-01	1.06E-01	3.79E-02	5.15E-02
	723.30	19.70	3.28E-01		4.06E-02	1.53E-01
	873.19	11.50	5.75E-01		3.51E-02	2.65E-01
	996.32	10.30	6.27E-01		-3.33E-01	2.86E-01
	1004.76	17.90	4.30E-01		3.36E-01	1.99E-01
+ EU-155	1274.45	35.50	2.09E-01		4.22E-02	9.49E-02
	86.50	* 30.90	3.42E-01	2.18E-01	2.38E-01	1.69E-01
EU-156	105.30	20.70	2.18E-01		1.58E-01	1.06E-01
	811.77	10.40	1.11E+00	1.11E+00	-9.20E-01	5.14E-01
HO-166M	1153.47	7.20	2.08E+00		-1.05E+00	9.58E-01
	1230.71	8.90	1.82E+00		3.24E-01	8.41E-01
	184.41	72.60	8.25E-02	8.25E-02	8.39E-02	4.02E-02
	280.45	29.60	1.50E-01		-5.77E-02	7.16E-02
TM-171	410.94	11.10	4.80E-01		-1.26E-02	2.28E-01
	711.69	54.10	1.18E-01		-3.06E-02	5.48E-02
HF-172	66.72	0.14	3.16E+01	3.16E+01	1.13E+01	1.53E+01
LU-172	81.75	4.52	8.58E-01	3.75E-01	3.95E-01	4.15E-01
	125.81	11.30	3.75E-01		-6.19E-01	1.81E-01
LU-173	181.53	20.60	8.96E-01	4.79E-01	8.26E-02	4.33E-01
	810.06	16.63	1.65E+00		-7.24E-02	7.68E-01
	912.12	15.25	3.61E+00		8.93E+00	1.74E+00
	1093.66	62.50	4.79E-01		2.56E-01	2.20E-01
HF-175	100.72	5.24	8.34E-01	2.52E-01	-3.91E-02	4.05E-01
	272.11	21.20	2.52E-01		6.35E-03	1.21E-01
LU-176	343.40	84.00	6.33E-02	6.33E-02	-1.68E-02	3.00E-02
	88.34	13.30	4.48E-01	4.75E-02	6.16E-01	2.19E-01
TA-182	201.83	86.00	5.50E-02		2.02E-02	2.65E-02
	306.78	94.00	4.75E-02		5.37E-03	2.25E-02
	67.75	41.20	1.17E-01	1.17E-01	1.77E-02	5.69E-02
	1121.30	34.90	3.58E-01		4.30E-01	1.69E-01
	1189.05	16.23	5.31E-01		-3.29E-02	2.44E-01
IR-192	1221.41	26.98	3.85E-01		1.00E-01	1.79E-01
	1231.02	11.44	8.23E-01		9.44E-02	3.80E-01
	308.46	29.68	1.68E-01	1.14E-01	8.58E-02	7.98E-02
	468.07	48.10	1.14E-01		2.40E-02	5.36E-02
HG-203	279.19	77.30	7.25E-02	7.25E-02	7.38E-03	3.46E-02
BI-207	569.67	97.72	5.89E-02	5.89E-02	2.56E-02	2.76E-02
	1063.62	74.90	9.30E-02		2.07E-02	4.25E-02
+ TL-208	583.14	* 30.22	2.87E-01	8.68E-02	9.61E-01	1.37E-01
	860.37	4.48	1.71E+00		1.15E+00	7.98E-01
BI-210M	2614.66	* 35.85	8.68E-02		8.99E-01	3.02E-02
	262.00	45.00	1.00E-01	1.00E-01	3.33E-02	4.78E-02
PB-210	300.00	23.00	2.22E-01		1.87E-01	1.06E-01
	46.50	4.25	1.36E+00	1.36E+00	1.14E+00	6.56E-01

Analysis Report for 1606040-12
CP-5025 00-02

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
PB-211	404.84	2.90	1.77E+00	1.77E+00	-4.57E-01	8.38E-01
	831.96	2.90	2.38E+00		-3.20E-01	1.11E+00
+ BI-212	727.17 *	11.80	7.02E-01	7.02E-01	6.88E-01	3.32E-01
	1620.62	2.75	2.27E+00		-4.19E-01	9.86E-01
+ PB-212	238.63 *	44.60	1.94E-01	1.94E-01	1.04E+00	9.46E-02
	300.09 *	3.41	3.10E+00		8.84E-01	1.52E+00
+ BI-214	609.31 *	46.30	2.17E-01	2.17E-01	7.53E-01	1.04E-01
	1120.29 *	15.10	7.39E-01		1.07E+00	3.49E-01
	1764.49 *	15.80	4.12E-01		1.26E+00	1.79E-01
	2204.22 *	4.98	1.56E+00		9.35E-01	6.88E-01
+ PB-214	295.21 *	19.19	5.44E-01	1.91E-01	1.14E+00	2.66E-01
	351.92 *	37.19	1.91E-01		1.01E+00	9.24E-02
RN-219	401.80	6.50	7.92E-01	7.92E-01	4.72E-02	3.75E-01
RA-223	323.87	3.88	1.24E+00	1.24E+00	1.80E-01	5.91E-01
RA-224	240.98	3.95	2.54E+00	2.54E+00	1.09E+01	1.25E+00
RA-225	40.00	31.00	3.69E-01	3.69E-01	-8.25E-02	1.77E-01
+ RA-226	186.21 *	3.28	1.93E+00	1.93E+00	3.59E+00	9.42E-01
TH-227	50.10	8.40	5.58E-01	5.58E-01	3.65E-01	2.69E-01
	236.00	11.50	5.74E-01		-1.85E-02	2.79E-01
	256.20	6.30	7.21E-01		-1.54E-01	3.45E-01
+ AC-228	338.32 *	11.40	6.93E-01	3.09E-01	1.10E+00	3.36E-01
	911.07 *	27.70	3.09E-01		1.18E+00	1.45E-01
	969.11 *	16.60	1.04E+00		1.17E+00	5.01E-01
TH-230	48.44	16.90	2.82E-01	2.82E-01	-3.52E-01	1.36E-01
	62.85	4.60	1.17E+00		2.16E+00	5.69E-01
	67.67	0.37	1.21E+01		1.82E+00	5.86E+00
PA-231	283.67	1.60	2.68E+00	2.00E+00	-6.09E-01	1.27E+00
	302.67	2.30	2.00E+00		-2.22E+00	9.50E-01
+ TH-231	25.64	14.70	1.97E+00	1.62E+00	6.95E-01	9.48E-01
	84.21 *	6.40	1.62E+00		6.05E-01	8.00E-01
PA-233	311.98	38.60	1.51E-01	1.51E-01	5.49E-03	7.16E-02
PA-234	131.20	20.40	2.24E-01	2.24E-01	1.37E-01	1.09E-01
	733.99	8.80	7.52E-01		2.62E-02	3.51E-01
	946.00	12.00	5.33E-01		-3.96E-01	2.44E-01
PA-234M	1001.03	0.92	8.39E+00	8.39E+00	4.01E+00	3.89E+00
+ TH-234	63.29 *	3.80	1.80E+00	1.80E+00	1.55E+00	8.80E-01
U-235	143.76	10.50	4.35E-01	4.35E-01	-1.53E-02	2.11E-01
	163.35	4.70	1.01E+00		5.52E-01	4.88E-01
	205.31	4.70	9.82E-01		-3.46E-02	4.73E-01
+ NP-237	86.50 *	12.60	8.35E-01	8.35E-01	5.80E-01	4.13E-01
NP-239	106.10	22.70	9.79E+00	9.79E+00	6.57E+00	4.76E+00
	228.18	10.70	2.32E+01		3.24E+00	1.12E+01
	277.60	14.10	1.64E+01		4.34E+00	7.83E+00
AM-241	59.54	35.90	1.22E-01	1.22E-01	4.78E-02	5.92E-02
AM-243	74.67	66.00	8.62E-02	8.62E-02	-2.88E-01	4.22E-02
CM-243	209.75	3.29	1.56E+00	3.36E-01	1.51E+00	7.56E-01
	228.14	10.60	4.76E-01		6.65E-02	2.29E-01
	277.60	14.00	3.36E-01		8.88E-02	1.61E-01

Analysis Report for 1606040-12
CP-5025 00-02

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

No Action Level results available for reporting purposes.

DATA REVIEW COMMENTS REPORT

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

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

Sample Title: CP-5025 00-02

Elapsed Live time: 3600

Elapsed Real Time: 3602

Channel	1	9	17	25	33	41	49	57	65	73	81	89	97	105	113	121	129	137	145	153	161	169	177	185	193	201	209	217	225	233	241	249	257	265	273	281	289	297	305	313	321	329	337	345	353	361
	0	1028	133	77	61	65	77	73	105	123	120	84	62	81	85	74	105	50	74	59	61	51	45	72	51	42	77	32	39	38	97	23	33	24	28	26	34	26	25	22	29	39	25	16	84	16
	0	726	92	66	54	69	90	84	94	137	95	196	74	90	88	72	75	55	67	96	52	49	65	206	51	50	74	43	43	46	133	31	31	24	31	25	22	26	30	21	32	30	20	30	20	20
	0	387	88	64	54	67	72	100	127	363	85	120	78	91	93	69	79	57	62	65	68	60	64	88	57	49	36	40	56	45	43	23	31	29	34	29	34	22	25	23	24	27	19	19	21	
	0	206	100	58	64	50	66	111	126	155	142	149	81	69	79	63	59	67	47	57	75	53	56	40	48	51	45	42	44	50	24	30	30	34	34	32	36	34	23	24	30	16	16	23		
	0	2109	64	59	59	69	80	91	116	474	107	323	87	71	51	57	44	74	51	49	58	57	52	58	38	37	37	44	40	39	41	33	30	17	20	36	20	14	22	31	28	22	24	16		
	0	271	50	60	65	76	86	100	130	261	107	107	64	89	53	60	58	58	61	47	51	50	46	50	39	45	48	36	34	28	29	33	71	19	34	25	21	28	15	17	22	15	18			
	35	126	80	61	59	159	96	188	138	96	193	93	65	71	67	63	52	62	80	53	59	51	57	51	52	44	64	37	49	570	28	34	49	32	28	186	20	14	21	36	30	77	16	23		
	554	129	67	57	64	58	98	207	144	100	172	89	77	70	70	68	62	71	51	57	68	52	62	46	51	43	54	37	43	59	37	35	33	22	20	34	24	23	23	54	28	20	311	23	22	

369: 15 32 19 15 16 17 27 15

Sample Title: CP-5025 00-02

Channel	-----	-----	-----	-----	-----	-----	-----	-----
377:	25	24	13	16	29	24	19	28
385:	15	16	24	27	28	18	19	17
393:	20	20	17	15	13	17	15	18
401:	17	28	24	20	25	19	17	21
409:	34	19	12	17	29	21	23	17
417:	23	12	11	20	15	11	17	21
425:	23	18	16	10	19	17	15	15
433:	11	16	13	17	14	16	17	28
441:	13	20	16	10	16	10	12	10
449:	21	13	14	19	19	16	14	13
457:	18	15	13	11	15	17	36	21
465:	17	13	13	10	19	19	11	12
473:	11	6	15	13	8	20	15	19
481:	21	10	12	12	18	16	20	12
489:	10	15	15	13	22	11	16	12
497:	13	11	13	11	12	14	10	8
505:	18	12	17	17	19	46	99	38
513:	26	11	16	23	8	18	11	12
521:	7	18	14	13	14	7	10	18
529:	18	13	8	23	22	21	9	7
537:	13	12	16	12	7	11	11	15
545:	8	13	8	8	8	10	13	18
553:	10	17	11	12	8	9	11	10
561:	10	22	15	7	9	7	18	12
569:	19	16	11	10	17	14	10	11
577:	16	12	9	11	10	22	142	90
585:	22	6	12	11	10	12	8	11
593:	8	15	11	8	11	11	13	15
601:	10	9	16	12	14	14	15	15
609:	139	131	17	13	10	12	9	12
617:	9	8	13	17	10	10	15	7
625:	8	10	15	4	6	11	10	3
633:	9	14	11	10	10	9	11	13
641:	6	10	8	11	13	8	13	7
649:	11	9	14	4	7	8	11	8
657:	13	13	9	12	22	41	11	10
665:	12	10	7	7	10	9	13	13
673:	13	12	7	12	11	12	8	10
681:	11	8	9	9	14	6	11	13
689:	8	17	7	12	4	12	9	16
697:	16	10	10	10	12	11	12	14
705:	12	15	15	6	13	8	8	6
713:	12	11	6	8	12	12	6	10
721:	8	12	8	8	5	13	42	24
729:	14	8	8	15	9	10	6	6
737:	12	11	5	13	8	8	13	7
745:	9	4	10	6	11	6	2	12
753:	7	8	17	8	12	7	5	7
761:	10	12	6	16	7	15	12	23
769:	24	8	16	10	21	9	4	14
777:	4	8	11	6	7	8	9	8
785:	11	16	5	5	9	9	7	8
793:	12	10	24	5	6	7	7	6

801: 9 4 11 5 10 15 15 8

Sample Title: CP-5025 00-02

Channel	1	2	3	4	5	6	7	8
809:	7	8	10	4	10	3	11	7
817:	7	5	9	8	4	9	7	13
825:	8	9	6	8	9	8	8	9
833:	7	9	8	8	13	12	11	12
841:	12	9	10	4	7	4	5	7
849:	5	1	8	6	9	3	7	4
857:	8	6	8	11	17	10	8	5
865:	7	3	5	6	11	9	2	6
873:	7	11	5	8	9	7	5	9
881:	6	6	7	7	4	5	6	9
889:	8	3	9	7	8	5	4	9
897:	5	7	4	3	4	7	5	8
905:	3	2	8	2	10	25	106	58
913:	7	7	6	9	4	6	5	7
921:	8	9	9	3	2	4	5	6
929:	7	5	5	9	7	14	11	5
937:	9	16	3	3	10	9	6	7
945:	4	2	7	7	6	7	10	4
953:	7	5	5	5	3	8	6	6
961:	6	7	4	19	22	9	8	21
969:	52	30	10	10	6	9	6	5
977:	4	3	8	6	3	5	6	4
985:	6	9	6	8	4	3	6	4
993:	5	3	8	2	6	7	5	5
1001:	14	6	5	11	5	7	4	3
1009:	2	8	2	5	2	6	5	5
1017:	3	5	7	6	6	7	1	4
1025:	7	8	6	7	6	6	3	6
1033:	6	8	2	4	6	8	4	8
1041:	7	6	8	5	3	6	5	1
1049:	7	5	12	9	6	2	9	4
1057:	10	4	2	7	2	7	5	7
1065:	5	5	5	6	9	6	6	12
1073:	2	3	7	5	3	3	8	6
1081:	5	4	13	8	5	7	8	4
1089:	4	6	6	7	1	10	9	5
1097:	4	3	5	4	4	6	8	7
1105:	8	7	2	10	5	3	6	8
1113:	6	7	6	7	8	13	15	31
1121:	26	10	6	2	7	4	8	2
1129:	5	7	8	7	9	9	6	9
1137:	4	5	2	3	1	6	6	9
1145:	5	7	8	5	5	4	3	11
1153:	7	7	8	7	15	11	4	3
1161:	13	5	6	5	7	9	8	3
1169:	4	5	6	8	1	11	8	4
1177:	8	5	13	8	7	6	8	8
1185:	4	6	7	5	5	9	5	5
1193:	7	6	6	4	6	5	7	7
1201:	11	4	12	10	11	4	11	5
1209:	11	11	8	5	5	8	8	7
1217:	9	10	8	7	9	10	8	8
1225:	7	6	6	5	8	5	10	7

1233: 9 4 8 5 13 19 11 5

Sample Title: CP-5025 00-02

Channel	1	2	3	4	5	6	7	8	9
1241:	4	4	5	3	6	4	3	6	
1249:	8	7	2	10	5	3	5	9	
1257:	5	5	6	5	3	1	2	7	
1265:	4	5	6	3	3	5	3	2	
1273:	7	3	7	8	2	4	3	6	
1281:	10	7	1	3	4	4	5	3	
1289:	4	5	3	4	4	6	1	3	
1297:	3	4	3	1	7	7	2	4	
1305:	3	1	1	5	2	6	4	4	
1313:	4	2	4	5	2	4	2	6	
1321:	4	2	1	5	4	6	6	4	
1329:	8	4	3	2	6	2	4	4	
1337:	1	5	2	2	0	4	4	1	
1345:	1	2	3	4	4	3	2	5	
1353:	3	3	4	3	2	4	2	1	
1361:	7	3	5	0	2	2	4	2	
1369:	3	1	0	3	3	1	5	3	
1377:	4	14	5	3	2	5	5	3	
1385:	7	1	3	2	3	2	2	3	
1393:	2	2	7	0	3	0	0	1	
1401:	6	1	1	1	4	4	5	7	
1409:	7	1	1	1	4	2	2	2	
1417:	3	1	5	1	2	0	1	1	
1425:	1	3	2	0	1	2	0	2	
1433:	2	3	4	3	3	0	3	0	
1441:	3	2	2	4	1	3	0	1	
1449:	5	2	2	4	3	8	2	0	
1457:	0	7	19	149	280	128	17	3	
1465:	0	3	2	2	2	4	2	1	
1473:	1	1	3	2	2	1	5	1	
1481:	0	1	2	1	2	4	1	1	
1489:	1	0	1	4	1	4	4	4	
1497:	5	4	2	1	2	0	2	1	
1505:	3	1	1	1	7	2	2	1	
1513:	1	3	0	2	0	1	2	3	
1521:	3	4	2	3	0	1	1	0	
1529:	2	2	3	2	0	2	1	2	
1537:	0	4	1	2	1	3	3	4	
1545:	2	0	0	0	1	1	1	1	
1553:	0	3	0	2	1	1	1	0	
1561:	0	0	0	0	3	3	1	1	
1569:	0	0	0	2	4	0	3	2	
1577:	1	0	0	2	2	2	4	2	
1585:	2	2	7	14	3	1	2	0	
1593:	6	3	3	3	3	0	2	3	
1601:	1	2	2	1	1	0	4	2	
1609:	5	0	3	2	1	2	5	2	
1617:	2	2	1	3	1	1	2	1	
1625:	1	0	2	2	4	2	5	1	
1633:	1	0	0	3	0	4	1	0	
1641:	2	1	1	3	3	0	2	1	
1649:	1	0	2	0	1	1	2	1	
1657:	2	2	0	0	4	2	1	2	

1665: 1 1 0 2 1 0 1 2

Sample Title: CP-5025 00-02

Channel	1	2	3	4	5	6	7	8
1673:	1	0	4	1	1	2	1	3
1681:	2	0	1	0	1	0	1	0
1689:	1	3	1	2	1	0	0	0
1697:	4	0	2	0	1	1	1	0
1705:	0	4	0	0	0	1	1	1
1713:	0	2	0	0	0	0	1	3
1721:	1	1	0	0	0	2	2	1
1729:	4	7	1	2	0	3	2	0
1737:	2	0	1	1	1	1	2	2
1745:	2	2	1	4	0	0	1	2
1753:	1	0	1	0	2	1	0	1
1761:	1	1	8	22	29	8	3	0
1769:	2	1	1	0	0	0	1	0
1777:	0	2	1	0	0	1	0	1
1785:	1	0	0	0	0	1	0	2
1793:	2	2	1	0	1	0	0	0
1801:	1	1	0	2	1	0	1	0
1809:	2	3	0	1	0	0	1	0
1817:	0	1	0	2	0	1	0	0
1825:	0	0	0	1	2	0	1	1
1833:	1	1	0	1	0	1	2	0
1841:	1	0	0	0	0	1	9	5
1849:	2	0	0	1	1	2	0	0
1857:	0	2	2	0	0	0	0	1
1865:	2	0	1	0	1	0	1	1
1873:	1	3	1	0	2	0	1	2
1881:	2	1	1	1	0	1	1	1
1889:	3	4	1	0	1	2	1	0
1897:	0	2	1	1	1	1	1	1
1905:	1	2	0	1	0	1	1	0
1913:	2	1	2	2	3	2	0	1
1921:	2	0	1	0	2	0	0	0
1929:	1	1	1	1	0	1	0	2
1937:	1	1	2	0	0	1	0	0
1945:	0	1	1	2	0	0	0	1
1953:	0	3	1	0	1	0	1	2
1961:	2	0	2	0	0	2	1	0
1969:	3	1	0	2	1	2	1	0
1977:	1	1	1	1	0	0	1	1
1985:	0	0	1	2	0	0	0	0
1993:	1	1	0	2	0	0	0	0
2001:	3	2	1	1	2	0	1	0
2009:	2	1	0	0	1	0	2	2
2017:	1	2	1	0	1	0	2	0
2025:	0	3	0	1	0	1	0	0
2033:	0	0	1	1	1	1	0	1
2041:	0	0	3	1	0	0	1	2
2049:	1	1	0	0	0	1	0	0
2057:	1	1	2	1	0	0	0	1
2065:	0	0	0	0	1	3	3	2
2073:	1	1	0	0	0	0	0	1
2081:	1	3	0	1	2	1	0	0
2089:	1	0	3	1	1	2	1	1

2097: 0 2 1 1 2 3 3 2

Sample Title: CP-5025 00-02

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

2529: 0 0 0 0 0 0 0 0 1

Sample Title: CP-5025 00-02

Channel	-----	-----	-----	-----	-----	-----	-----	-----
2537:	0	0	0	2	1	1	0	0
2545:	0	0	0	0	0	0	0	1
2553:	0	0	1	0	1	1	0	0
2561:	0	0	0	3	0	0	2	2
2569:	0	1	0	0	0	0	0	0
2577:	0	0	0	0	0	0	0	0
2585:	0	1	0	0	0	0	0	1
2593:	0	0	0	1	1	0	0	1
2601:	0	0	1	1	0	0	1	0
2609:	0	0	2	6	15	29	25	14
2617:	4	0	0	2	0	0	1	0
2625:	0	0	0	0	1	0	0	0
2633:	0	0	0	0	0	1	1	0
2641:	0	1	0	0	0	1	0	0
2649:	1	0	0	1	0	0	0	0
2657:	0	2	0	2	0	0	0	0
2665:	0	1	0	1	0	0	3	0
2673:	0	1	0	0	0	0	1	1
2681:	0	1	0	0	0	0	1	1
2689:	0	0	1	0	0	0	0	0
2697:	0	1	0	0	0	2	0	0
2705:	1	0	1	1	0	0	1	0
2713:	1	1	0	2	0	0	0	0
2721:	1	1	0	0	0	0	0	0
2729:	0	0	0	0	0	0	0	0
2737:	1	0	0	0	1	0	0	0
2745:	0	0	0	0	0	0	0	1
2753:	0	0	0	0	0	0	1	1
2761:	0	0	0	0	0	0	0	0
2769:	1	0	0	0	1	1	1	0
2777:	1	0	0	0	0	0	0	0
2785:	0	0	0	0	0	0	0	0
2793:	0	2	0	0	0	0	0	0
2801:	0	0	0	0	0	0	0	3
2809:	0	1	0	2	0	0	0	1
2817:	0	0	0	0	0	0	0	0
2825:	1	1	0	0	0	1	0	0
2833:	0	0	0	0	0	0	0	0
2841:	0	0	0	0	0	1	1	0
2849:	0	0	0	0	0	0	1	0
2857:	0	0	2	0	0	1	0	0
2865:	0	1	0	0	0	0	1	0
2873:	0	0	3	0	0	0	0	0
2881:	0	0	0	0	1	0	0	1
2889:	1	1	0	0	0	0	1	0
2897:	0	0	0	0	1	2	0	1
2905:	0	0	0	0	0	0	1	0
2913:	1	0	0	0	0	0	0	0
2921:	0	0	0	0	0	0	0	1
2929:	0	0	0	0	0	0	0	0
2937:	1	0	0	1	0	2	0	0
2945:	2	0	0	0	1	0	0	1
2953:	0	0	0	0	0	1	0	0

2961: 2 0 0 1 0 0 0 1

Sample Title: CP-5025 00-02

Channel	1	2	3	4	5	6	7	8
2969:	0	1	0	0	0	0	0	0
2977:	1	0	0	0	0	0	0	1
2985:	0	0	3	0	0	1	0	0
2993:	0	0	0	0	0	0	0	0
3001:	1	0	0	0	0	0	0	0
3009:	0	0	0	0	0	0	0	0
3017:	0	0	0	0	0	1	0	0
3025:	0	0	0	0	0	0	0	0
3033:	0	0	0	1	0	0	1	0
3041:	0	1	2	0	0	0	1	0
3049:	0	0	0	0	0	1	0	0
3057:	0	0	0	0	0	0	0	0
3065:	0	0	1	0	0	0	0	0
3073:	0	0	0	0	0	0	0	1
3081:	0	0	1	0	0	0	1	1
3089:	0	0	1	0	0	0	0	1
3097:	0	0	1	0	0	0	0	0
3105:	1	0	0	0	0	0	0	0
3113:	0	0	0	1	0	1	0	0
3121:	0	0	0	0	0	0	0	1
3129:	0	1	0	0	0	0	0	1
3137:	0	1	1	0	0	1	0	0
3145:	0	0	0	1	0	0	0	1
3153:	0	1	0	0	0	0	0	0
3161:	0	1	0	0	0	0	0	1
3169:	0	0	0	1	1	0	0	0
3177:	0	0	0	0	0	0	0	0
3185:	0	1	0	0	0	0	0	0
3193:	0	0	0	0	1	0	0	0
3201:	0	0	0	0	0	0	0	0
3209:	1	1	0	0	1	1	0	0
3217:	0	0	0	0	0	1	0	0
3225:	0	0	0	0	1	0	1	0
3233:	0	1	0	0	1	1	0	0
3241:	0	0	1	0	0	0	0	0
3249:	0	0	0	0	0	0	1	1
3257:	0	0	0	0	0	0	0	1
3265:	1	0	0	0	0	0	0	0
3273:	1	0	0	0	0	0	0	0
3281:	0	0	1	0	1	0	0	1
3289:	0	0	0	0	0	0	0	0
3297:	1	0	0	0	0	0	0	1
3305:	0	0	0	0	0	0	1	0
3313:	1	0	0	1	1	0	0	1
3321:	0	0	0	1	0	0	1	0
3329:	1	0	0	0	0	0	0	0
3337:	1	0	1	0	0	0	0	0
3345:	1	0	0	0	0	0	0	0
3353:	0	0	0	0	1	0	0	0
3361:	0	0	0	0	0	0	0	0
3369:	0	0	0	0	0	0	0	0
3377:	0	0	0	0	0	1	0	0
3385:	0	0	0	0	1	0	0	0

3393: 0 1 1 0 0 0 0 0

Sample Title: CP-5025 00-02

Channel	1	2	3	4	5	6	7	8
3401:	0	0	0	0	0	0	0	2
3409:	0	0	0	0	1	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	0	0
3441:	0	1	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:	1	0	1	0	0	0	0	0
3473:	0	0	0	2	0	1	0	1
3481:	0	0	0	1	0	0	0	0
3489:	0	0	0	1	0	0	0	0
3497:	0	0	0	0	0	0	0	0
3505:	0	1	0	0	0	0	0	0
3513:	0	1	1	0	0	0	0	0
3521:	0	0	0	1	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	1	0	0	0	0
3553:	0	0	0	0	1	0	0	0
3561:	2	0	0	0	0	0	0	0
3569:	0	0	0	1	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	1	0	0	0	1	1
3601:	0	0	0	0	0	0	0	0
3609:	0	0	0	1	0	0	0	0
3617:	1	1	0	1	0	1	0	0
3625:	0	0	0	1	0	0	0	0
3633:	0	0	0	0	0	0	0	0
3641:	1	1	0	0	0	0	2	0
3649:	1	1	0	0	1	0	0	0
3657:	0	0	1	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	1	0	0	0	1	0
3697:	0	0	1	0	0	0	0	0
3705:	0	1	0	0	0	0	0	0
3713:	0	0	0	0	0	0	0	0
3721:	0	0	0	0	0	0	0	1
3729:	0	1	0	0	0	0	0	0
3737:	0	0	0	0	0	0	1	0
3745:	0	1	0	0	0	0	0	0
3753:	0	0	1	1	0	0	0	0
3761:	0	0	0	0	0	0	1	0
3769:	0	1	0	0	0	0	0	0
3777:	0	0	0	0	0	0	0	0
3785:	0	0	1	0	0	0	0	0
3793:	0	0	0	0	0	0	0	0
3801:	0	0	0	0	2	0	0	0
3809:	0	0	0	0	1	0	0	0
3817:	0	0	0	0	0	0	0	0

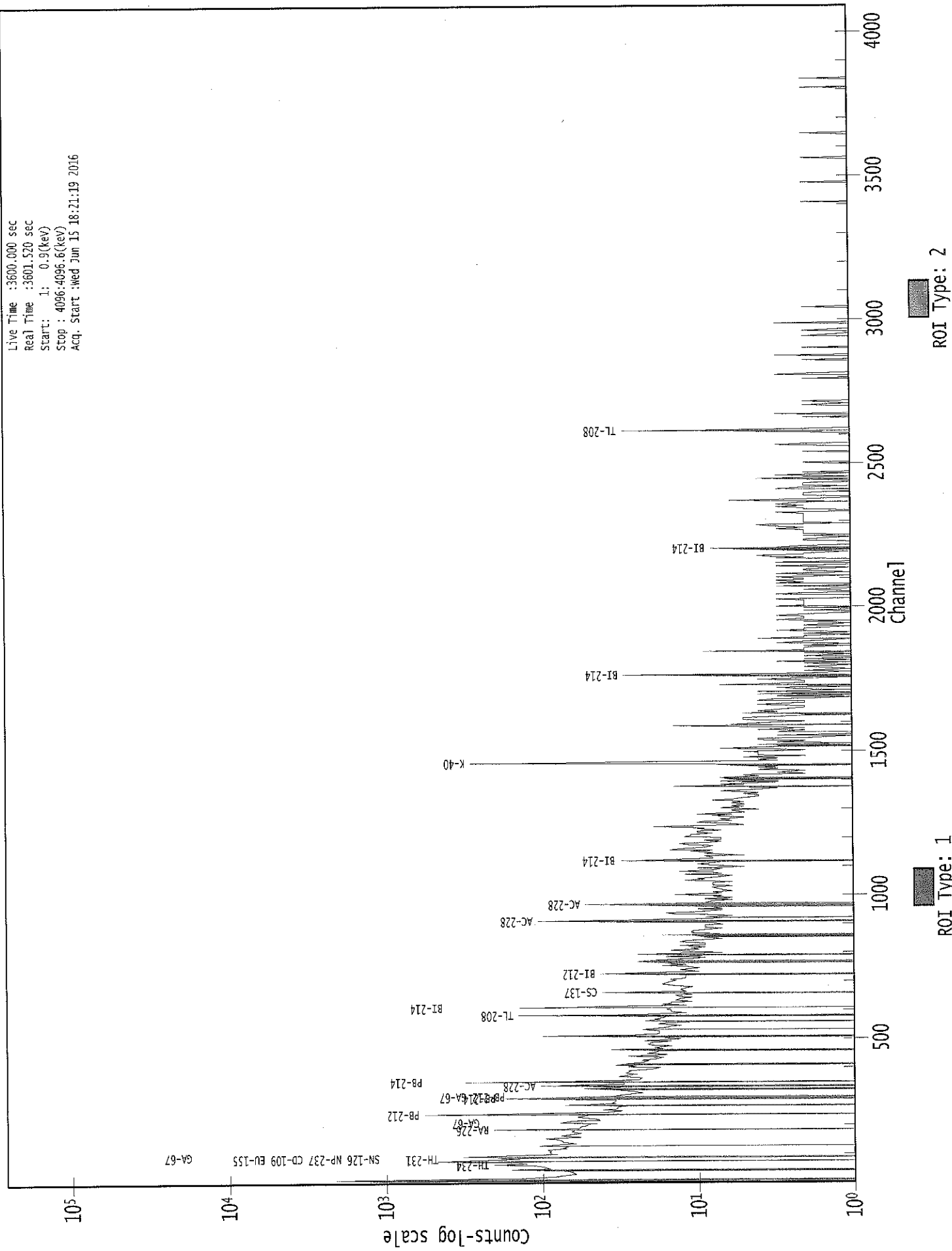
3825: 0 1 0 0 0 0 0 0

Sample Title: CP-5025 00-02

Channel	1	2	3	4	5	6	7	8
3833:	1	0	1	0	2	0	0	0
3841:	0	0	0	0	0	0	0	0
3849:	0	0	0	0	0	0	1	0
3857:	0	0	0	0	0	0	0	1
3865:	0	0	0	0	0	1	0	1
3873:	0	0	0	0	0	1	0	0
3881:	0	0	0	0	0	0	0	0
3889:	0	0	1	1	0	0	1	0
3897:	0	0	0	0	0	0	0	0
3905:	0	0	0	0	0	1	1	0
3913:	0	0	0	1	0	0	0	0
3921:	0	0	0	0	0	0	0	0
3929:	0	0	1	1	0	0	0	0
3937:	0	0	0	0	0	0	0	1
3945:	0	0	1	1	0	0	0	0
3953:	0	0	0	0	0	0	0	0
3961:	0	0	0	0	0	0	0	0
3969:	0	0	0	0	0	0	0	0
3977:	0	0	1	1	0	0	0	0
3985:	0	0	0	0	0	0	0	0
3993:	0	0	0	0	0	0	0	1
4001:	0	0	0	0	0	0	0	1
4009:	0	1	0	0	0	0	0	0
4017:	1	0	0	0	1	0	0	0
4025:	0	0	0	0	1	1	0	0
4033:	0	0	1	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	1	0
4065:	0	0	0	1	0	0	0	0
4073:	0	0	0	1	0	0	1	0
4081:	0	0	0	0	1	0	0	0
4089:	0	0	0	0	0	1	0	0

0000038952.CNF

Live Time : 3600.000 sec
Real Time : 3601.520 sec
Start : 1: 0.9(keV)
Stop : 4096.4096.6(keV)
Acq. Start : Wed Jun 15 18:21:19 2016



Analysis Report for 1606040-13
CP-5025 02-05

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6/16

GAMMA SPECTRUM ANALYSIS

Sample Identification : 1606040-13
Sample Description : CP-5025 02-05
Sample Type : SOIL

Sample Size : 5.089E+02 grams
Facility : Countroom

Sample Taken On : 6/2/2016 1:12:58PM
Acquisition Started : 6/15/2016 6:21:58PM

Procedure : GAS-1402 pCi
Operator : Administrator
Detector Name : GE4
Geometry : GAS-1402
Live Time : 3600.0 seconds
Real Time : 3601.4 seconds

Dead Time : 0.04 %

Peak Locate Threshold : 2.50
Peak Locate Range (in channels) : 1 - 4096
Peak Area Range (in channels) : 15 - 4096
Identification Energy Tolerance : 1.000 keV

Energy Calibration Used Done On : 10/25/2014
Efficiency Calibration Used Done On : 11/8/2014
Efficiency Calibration Description :

Sample Number : 38953

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
6/16/16

Analysis Report for 1606040-13
CP-5025 02-05

PEAK LOCATE REPORT

Peak Locate Performed on : 6/15/2016 7:34:19PM
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	47.46	46.72	0.0000	0.00
2	64.72	63.98	0.0000	0.00
3	76.02	75.29	0.0000	0.00
4	86.64	85.91	0.0000	0.00
5	94.04	93.32	0.0000	0.00
6	186.02	185.33	0.0000	0.00
7	210.28	209.60	0.0000	0.00
8	239.38	238.72	0.0000	0.00
9	270.25	269.60	0.0000	0.00
10	295.44	294.80	0.0000	0.00
11	329.21	328.58	0.0000	0.00
12	338.30	337.68	0.0000	0.00
13	352.00	351.39	0.0000	0.00
14	518.65	518.11	0.0000	0.00
15	583.31	582.80	0.0000	0.00
16	609.37	608.87	0.0000	0.00
17	727.23	726.80	0.0000	0.00
18	910.58	910.24	0.0000	0.00
19	969.45	969.14	0.0000	0.00
20	1119.42	1119.19	0.0000	0.00
21	1145.95	1145.74	0.0000	0.00
22	1211.33	1211.16	0.0000	0.00
23	1376.74	1376.67	0.0000	0.00
24	1439.30	1439.26	0.0000	0.00
25	1460.67	1460.65	0.0000	0.00
26	1510.76	1510.76	0.0000	0.00
27	1531.70	1531.72	0.0000	0.00
28	1576.65	1576.70	0.0000	0.00
29	1755.41	1755.57	0.0000	0.00
30	1763.69	1763.86	0.0000	0.00
31	1972.15	1972.45	0.0000	0.00
32	2614.03	2614.80	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1606040-13
CP-5025 02-05

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 6/15/2016 7:34:19PM

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	47.46	42 - 51	46.72	1.07E+02	89.44	1.09E+03	4.98
m	2	64.72	59 - 81	63.98	2.75E+02	106.78	1.49E+03	4.55
	3	76.02	59 - 81	75.29	7.92E+02	149.29	2.10E+03	4.56
	4	86.64	82 - 89	85.91	8.08E+01	92.50	1.38E+03	2.06
	5	94.04	89 - 99	93.32	1.80E+02	113.45	1.54E+03	2.42
	6	186.02	180 - 191	185.33	2.06E+02	83.47	7.68E+02	2.65
	7	210.28	204 - 214	209.60	9.45E+01	72.81	6.47E+02	4.83
	8	239.38	234 - 245	238.72	5.42E+02	87.36	6.80E+02	2.42
	9	270.25	265 - 274	269.60	7.53E+01	51.45	3.35E+02	2.30
	10	295.44	290 - 301	294.80	1.17E+02	65.33	4.77E+02	2.63
	11	329.21	324 - 333	328.58	3.91E+01	48.19	3.08E+02	4.49
	12	338.30	334 - 342	337.68	6.98E+01	46.13	2.86E+02	2.56
	13	352.00	345 - 355	351.39	2.50E+02	55.74	2.83E+02	2.80
m	14	518.65	505 - 520	518.11	1.95E+01	22.27	6.77E+01	4.03
	15	583.31	577 - 588	582.80	1.20E+02	39.75	1.37E+02	2.51
	16	609.37	603 - 614	608.87	1.31E+02	38.47	1.18E+02	2.99
	17	727.23	724 - 731	726.80	2.74E+01	27.64	1.11E+02	2.03
	18	910.58	903 - 916	910.24	8.15E+01	35.65	1.05E+02	2.65
	19	969.45	966 - 972	969.14	3.31E+01	22.20	6.38E+01	1.78
	20	1119.42	1114 - 1124	1119.19	3.26E+01	24.10	5.88E+01	1.66
	21	1145.95	1142 - 1150	1145.74	1.65E+01	19.77	5.09E+01	4.41
	22	1211.33	1200 - 1225	1211.16	6.20E+01	46.88	1.30E+02	12.59
	23	1376.74	1372 - 1381	1376.67	1.97E+01	10.63	4.59E+00	5.54
	24	1439.30	1433 - 1445	1439.26	1.85E+01	13.58	1.30E+01	5.37
	25	1460.67	1454 - 1465	1460.65	2.43E+02	35.55	3.80E+01	2.55
	26	1510.76	1505 - 1516	1510.76	1.72E+01	10.77	5.60E+00	9.27
	27	1531.70	1529 - 1534	1531.72	7.39E+00	6.71	3.22E+00	1.22
	28	1576.65	1571 - 1579	1576.70	5.38E+00	7.23	5.25E+00	1.11
	29	1755.41	1752 - 1758	1755.57	7.00E+00	5.29	0.00E+00	1.33
	30	1763.69	1760 - 1767	1763.86	2.80E+01	10.58	0.00E+00	3.01
	31	1972.15	1968 - 1975	1972.45	7.09E+00	8.72	7.82E+00	2.40
	32	2614.03	2610 - 2619	2614.80	3.50E+01	11.83	0.00E+00	2.81

Analysis Report for 1606040-13
CP-5025 02-05

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

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 6/15/2016 7:34:19PM

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	47.46	42 -	51	1.07E+02	89.44	1.09E+03	7.15E+01
M	2	64.72	59 -	81	2.75E+02	106.78	1.49E+03	6.34E+01
m	3	76.02	59 -	81	7.92E+02	149.29	2.10E+03	7.53E+01
	4	86.64	82 -	89	8.08E+01	92.50	1.38E+03	7.46E+01
	5	94.04	89 -	99	1.80E+02	113.45	1.54E+03	9.06E+01
	6	186.02	180 -	191	2.06E+02	83.47	7.68E+02	6.44E+01
	7	210.28	204 -	214	9.45E+01	72.81	6.47E+02	5.77E+01
	8	239.38	234 -	245	5.42E+02	87.36	6.80E+02	6.08E+01
	9	270.25	265 -	274	7.53E+01	51.45	3.35E+02	3.98E+01
	10	295.44	290 -	301	1.17E+02	65.33	4.77E+02	5.07E+01
	11	329.21	324 -	333	3.91E+01	48.19	3.08E+02	3.83E+01
	12	338.30	334 -	342	6.98E+01	46.13	2.86E+02	3.53E+01
	13	352.00	345 -	355	2.50E+02	55.74	2.83E+02	3.77E+01
m	14	518.65	505 -	520	1.95E+01	22.27	6.77E+01	1.35E+01
	15	583.31	577 -	588	1.20E+02	39.75	1.37E+02	2.73E+01
	16	609.37	603 -	614	1.31E+02	38.47	1.18E+02	2.54E+01
	17	727.23	724 -	731	2.74E+01	27.64	1.11E+02	2.10E+01
	18	910.58	903 -	916	8.15E+01	35.65	1.05E+02	2.53E+01
	19	969.45	966 -	972	3.31E+01	22.20	6.38E+01	1.80E+01
	20	1119.42	1114 -	1124	3.26E+01	24.10	5.88E+01	1.74E+01
	21	1145.95	1142 -	1150	1.65E+01	19.77	5.09E+01	1.48E+01
	22	1211.33	1200 -	1225	6.20E+01	46.88	1.30E+02	3.63E+01
	23	1376.74	1372 -	1381	1.97E+01	10.63	4.59E+00	4.81E+00
	24	1439.30	1433 -	1445	1.85E+01	13.58	1.30E+01	8.64E+00
	25	1460.67	1454 -	1465	2.43E+02	35.55	3.80E+01	1.40E+01
	26	1510.76	1505 -	1516	1.72E+01	10.77	5.60E+00	5.65E+00
	27	1531.70	1529 -	1534	7.39E+00	6.71	3.22E+00	3.23E+00
	28	1576.65	1571 -	1579	5.38E+00	7.23	5.25E+00	4.56E+00
	29	1755.41	1752 -	1758	7.00E+00	5.29	0.00E+00	0.00E+00
	30	1763.69	1760 -	1767	2.80E+01	10.58	0.00E+00	0.00E+00
	31	1972.15	1968 -	1975	7.09E+00	8.72	7.82E+00	5.67E+00

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Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
32	2614.03	2610 -	2619	3.50E+01	11.83	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 : 6/15/2016 7:34:19PM

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	47.46	42 -	51	46.72	1.07E+02	89.44	1.09E+03	PB-210 TH-230
M	2	59 -	81	63.98	2.75E+02	106.78	1.49E+03	.....
m	3	59 -	81	75.29	7.92E+02	149.29	2.10E+03	.....
	4	82 -	89	85.91	8.08E+01	92.50	1.38E+03	NP-237 EU-155 SN-126
	5	89 -	99	93.32	1.80E+02	113.45	1.54E+03	GA-67
	6	180 -	191	185.33	2.06E+02	83.47	7.68E+02	RA-226
	7	204 -	214	209.60	9.45E+01	72.81	6.47E+02	CM-243
	8	234 -	245	238.72	5.42E+02	87.36	6.80E+02	PB-212
	9	265 -	274	269.60	7.53E+01	51.45	3.35E+02	.....
	10	290 -	301	294.80	1.17E+02	65.33	4.77E+02	PB-214
	11	324 -	333	328.58	3.91E+01	48.19	3.08E+02	LA-140
	12	334 -	342	337.68	6.98E+01	46.13	2.86E+02	AC-228
	13	345 -	355	351.39	2.50E+02	55.74	2.83E+02	PB-214
m	14	505 -	520	518.11	1.95E+01	22.27	6.77E+01	.....
	15	577 -	588	582.80	1.20E+02	39.75	1.37E+02	TL-208
	16	603 -	614	608.87	1.31E+02	38.47	1.18E+02	BI-214
	17	724 -	731	726.80	2.74E+01	27.64	1.11E+02	BI-212
	18	903 -	916	910.24	8.15E+01	35.65	1.05E+02	AC-228
	19	966 -	972	969.14	3.31E+01	22.20	6.38E+01	AC-228
	20	1114 -	1124	1119.19	3.26E+01	24.10	5.88E+01	BI-214
	21	1142 -	1150	1145.74	1.65E+01	19.77	5.09E+01	.....
	22	1211 -	1225	1211.16	6.20E+01	46.88	1.30E+02	.....

Analysis Report for 1606040-13
 CP-5025 02-05

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
23	1376.74	1372 -	1381	1376.67	1.97E+01	10.63	4.59E+00	.....
24	1439.30	1433 -	1445	1439.26	1.85E+01	13.58	1.30E+01	.....
25	1460.67	1454 -	1465	1460.65	2.43E+02	35.55	3.80E+01	K-40
26	1510.76	1505 -	1516	1510.76	1.72E+01	10.77	5.60E+00	.....
27	1531.70	1529 -	1534	1531.72	7.39E+00	6.71	3.22E+00	.....
28	1576.65	1571 -	1579	1576.70	5.38E+00	7.23	5.25E+00	.....
29	1755.41	1752 -	1758	1755.57	7.00E+00	5.29	0.00E+00	.....
30	1763.69	1760 -	1767	1763.86	2.80E+01	10.58	0.00E+00	BI-214
31	1972.15	1968 -	1975	1972.45	7.09E+00	8.72	7.82E+00	.....
32	2614.03	2610 -	2619	2614.80	3.50E+01	11.83	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 : 6/15/2016 7:34:19PM

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty	
M	1	47.46	1.07E+02	89.44	2.61E-02	1.78E-03
m	2	64.72	2.75E+02	106.78	2.30E-02	1.75E-03
	3	76.02	7.92E+02	149.29	2.13E-02	1.69E-03
	4	86.64	8.08E+01	92.50	1.98E-02	1.64E-03
	5	94.04	1.80E+02	113.45	1.89E-02	1.61E-03
	6	186.02	2.06E+02	83.47	1.16E-02	1.15E-03
	7	210.28	9.45E+01	72.81	1.05E-02	1.08E-03
	8	239.38	5.42E+02	87.36	9.39E-03	9.85E-04
	9	270.25	7.53E+01	51.45	8.43E-03	8.89E-04
	10	295.44	1.17E+02	65.33	7.78E-03	8.43E-04
	11	329.21	3.91E+01	48.19	7.04E-03	8.05E-04
	12	338.30	6.98E+01	46.13	6.86E-03	7.95E-04
	13	352.00	2.50E+02	55.74	6.61E-03	7.80E-04
m	14	518.65	1.95E+01	22.27	4.54E-03	5.50E-04
	15	583.31	1.20E+02	39.75	4.05E-03	4.55E-04
	16	609.37	1.31E+02	38.47	3.88E-03	4.17E-04
	17	727.23	2.74E+01	27.64	3.25E-03	3.04E-04
	18	910.58	8.15E+01	35.65	2.61E-03	2.06E-04
	19	969.45	3.31E+01	22.20	2.46E-03	1.99E-04
	20	1119.42	3.26E+01	24.10	2.15E-03	1.80E-04

Analysis Report for 1606040-13
CP-5025 02-05

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
21	1145.95	1.65E+01	19.77	2.10E-03	1.76E-04
22	1211.33	6.20E+01	46.88	1.99E-03	1.83E-04
23	1376.74	1.97E+01	10.63	1.77E-03	2.06E-04
24	1439.30	1.85E+01	13.58	1.71E-03	1.93E-04
25	1460.67	2.43E+02	35.55	1.68E-03	1.89E-04
26	1510.76	1.72E+01	10.77	1.64E-03	1.79E-04
27	1531.70	7.39E+00	6.71	1.62E-03	1.74E-04
28	1576.65	5.38E+00	7.23	1.58E-03	1.65E-04
29	1755.41	7.00E+00	5.29	1.44E-03	1.28E-04
30	1763.69	2.80E+01	10.58	1.43E-03	1.26E-04
31	1972.15	7.09E+00	8.72	1.31E-03	1.11E-04
32	2614.03	3.50E+01	11.83	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 : 6/15/2016 7:34:19PM

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	47.46	1.07E+02	89.44	2.81E+01	5.97E+00	7.91E+01	8.96E+01
M	2	64.72	2.75E+02	106.78			2.75E+02	1.07E+02
m	3	76.02	7.92E+02	149.29	1.70E+01	4.04E+00	7.75E+02	1.49E+02
	4	86.64	8.08E+01	92.50			8.08E+01	9.25E+01
	5	94.04	1.80E+02	113.45			1.80E+02	1.13E+02
	6	186.02	2.06E+02	83.47	2.90E+01	7.24E+00	1.77E+02	8.38E+01
	7	210.28	9.45E+01	72.81			9.45E+01	7.28E+01
	8	239.38	5.42E+02	87.36	7.10E+00	5.46E+00	5.35E+02	8.75E+01
	9	270.25	7.53E+01	51.45			7.53E+01	5.14E+01
	10	295.44	1.17E+02	65.33			1.17E+02	6.53E+01
	11	329.21	3.91E+01	48.19			3.91E+01	4.82E+01
	12	338.30	6.98E+01	46.13			6.98E+01	4.61E+01
	13	352.00	2.50E+02	55.74	1.61E+00	4.34E+00	2.48E+02	5.59E+01
m	14	518.65	1.95E+01	22.27			1.95E+01	2.23E+01
	15	583.31	1.20E+02	39.75	2.37E+00	3.72E+00	1.17E+02	3.99E+01
	16	609.37	1.31E+02	38.47			1.31E+02	3.85E+01
	17	727.23	2.74E+01	27.64			2.74E+01	2.76E+01
	18	910.58	8.15E+01	35.65			8.15E+01	3.57E+01

: 00734

Analysis Report for 1606040-13

CP-5025 02-05

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
19	969.45	3.31E+01	22.20			3.31E+01	2.22E+01
20	1119.42	3.26E+01	24.10			3.26E+01	2.41E+01
21	1145.95	1.65E+01	19.77			1.65E+01	1.98E+01
22	1211.33	6.20E+01	46.88			6.20E+01	4.69E+01
23	1376.74	1.97E+01	10.63			1.97E+01	1.06E+01
24	1439.30	1.85E+01	13.58			1.85E+01	1.36E+01
25	1460.67	2.43E+02	35.55	9.79E-01	1.85E+00	2.42E+02	3.56E+01
26	1510.76	1.72E+01	10.77			1.72E+01	1.08E+01
27	1531.70	7.39E+00	6.71			7.39E+00	6.71E+00
28	1576.65	5.38E+00	7.23			5.38E+00	7.23E+00
29	1755.41	7.00E+00	5.29			7.00E+00	5.29E+00
30	1763.69	2.80E+01	10.58			2.80E+01	1.06E+01
31	1972.15	7.09E+00	8.72			7.09E+00	8.72E+00
32	2614.03	3.50E+01	11.83			3.50E+01	1.18E+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 : 6/15/2016 7:34:19PM

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.	
M	1	47.46	1.07E+02	89.44	2.81E+01	5.97E+00	7.91E+01	8.96E+01
m	2	64.72	2.75E+02	106.78			2.75E+02	1.07E+02
	3	76.02	7.92E+02	149.29	1.70E+01	4.04E+00	7.75E+02	1.49E+02
	4	86.64	8.08E+01	92.50			8.08E+01	9.25E+01
	5	94.04	1.80E+02	113.45			1.80E+02	1.13E+02
	6	186.02	2.06E+02	83.47	2.90E+01	7.24E+00	1.77E+02	8.38E+01
	7	210.28	9.45E+01	72.81			9.45E+01	7.28E+01
	8	239.38	5.42E+02	87.36	7.10E+00	5.46E+00	5.35E+02	8.75E+01
	9	270.25	7.53E+01	51.45			7.53E+01	5.14E+01
	10	295.44	1.17E+02	65.33			1.17E+02	6.53E+01
	11	329.21	3.91E+01	48.19			3.91E+01	4.82E+01
	12	338.30	6.98E+01	46.13			6.98E+01	4.61E+01
	13	352.00	2.50E+02	55.74	1.61E+00	4.34E+00	2.48E+02	5.59E+01
m	14	518.65	1.95E+01	22.27			1.95E+01	2.23E+01

: 00735

Analysis Report for 1606040-13
CP-5025 02-05

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
15	583.31	1.20E+02	39.75	2.37E+00	3.72E+00	1.17E+02	3.99E+01
16	609.37	1.31E+02	38.47			1.31E+02	3.85E+01
17	727.23	2.74E+01	27.64			2.74E+01	2.76E+01
18	910.58	8.15E+01	35.65			8.15E+01	3.57E+01
19	969.45	3.31E+01	22.20			3.31E+01	2.22E+01
20	1119.42	3.26E+01	24.10			3.26E+01	2.41E+01
21	1145.95	1.65E+01	19.77			1.65E+01	1.98E+01
22	1211.33	6.20E+01	46.88			6.20E+01	4.69E+01
23	1376.74	1.97E+01	10.63			1.97E+01	1.06E+01
24	1439.30	1.85E+01	13.58			1.85E+01	1.36E+01
25	1460.67	2.43E+02	35.55	9.79E-01	1.85E+00	2.42E+02	3.56E+01
26	1510.76	1.72E+01	10.77			1.72E+01	1.08E+01
27	1531.70	7.39E+00	6.71			7.39E+00	6.71E+00
28	1576.65	5.38E+00	7.23			5.38E+00	7.23E+00
29	1755.41	7.00E+00	5.29			7.00E+00	5.29E+00
30	1763.69	2.80E+01	10.58			2.80E+01	1.06E+01
31	1972.15	7.09E+00	8.72			7.09E+00	8.72E+00
32	2614.03	3.50E+01	11.83			3.50E+01	1.18E+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	0.997	1460.81	* 10.67	1.99E+01	3.70E+00
GA-67	0.503	93.31	* 35.70	6.56E+00	1.41E+01
		208.95	2.24		
		300.22	16.00		
SN-126	0.870	87.57	* 37.00	1.63E-01	1.87E-01
EU-155	0.379	86.50	* 30.90	1.96E-01	2.25E-01
		105.30	20.70		
TL-208	0.853	583.14	* 30.22	1.42E+00	5.07E-01
		860.37	4.48		
		2614.66	* 35.85	1.34E+00	4.75E-01
PB-210	0.863	46.50	* 4.25	1.05E+00	1.19E+00
BI-212	0.778	727.17	* 11.80	1.05E+00	1.07E+00
		1620.62	2.75		

Analysis Report for 1606040-13
CP-5025 02-05

<i>Nuclide Name</i>	<i>Id Confidence</i>	<i>Energy (keV)</i>	<i>Yield(%)</i>	<i>Activity (pCi/grams)</i>	<i>Activity Uncertainty</i>
PB-212	0.816	238.63 *	44.60	1.88E+00	3.66E-01
		300.09 -	3.41		
BI-214	0.895	609.31 *	46.30	1.08E+00	3.37E-01
		1120.29 *	15.10	1.48E+00	1.10E+00
		1764.49 *	15.80	1.82E+00	7.07E-01
		2204.22 ?	4.98		
PB-214	0.996	295.21 *	19.19	1.16E+00	6.58E-01
		351.92 *	37.19	1.49E+00	3.79E-01
RA-226	0.994	186.21 *	3.28	6.85E+00	1.30E+01
AC-228	0.976	338.32 *	11.40	1.32E+00	8.84E-01
		911.07 *	27.70	1.66E+00	7.39E-01
		969.11 *	16.60	1.20E+00	8.08E-01
TH-230	0.540	48.44 *	16.90	2.64E-01	3.00E-01
		62.85 -	4.60		
		67.67 -	0.37		
NP-237	0.997	86.50 *	12.60	4.78E-01	5.49E-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 : 6/15/2016 7:34:19PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

<i>Peak No.</i>	<i>Energy (keV)</i>	<i>Peak Size (CPS)</i>	<i>Peak CPS (%) Uncertainty</i>	<i>Peak Type</i>	<i>Tolerance Nuclide</i>
M 2	64.72	7.65244E-02	19.38		
m 3	76.02	2.15332E-01	9.63		
7	210.28	2.62520E-02	38.52	Tol.	CM-243
9	270.25	2.09071E-02	34.18		
11	329.21	1.08693E-02	61.57	Tol.	LA-140
m 14	518.65	5.41550E-03	57.12		
21	1145.95	4.59325E-03	59.77		
22	1211.33	1.72222E-02	37.81		
23	1376.74	5.47348E-03	26.97		
24	1439.30	5.13889E-03	36.71		
26	1510.76	4.77778E-03	31.31		
27	1531.70	2.05247E-03	45.39		
28	1576.65	1.49306E-03	67.24		

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Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
29	1755.41	1.94444E-03	37.80	Sum	
31	1972.15	1.96970E-03	61.47		

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	1.99E+01	3.70E+00
GA-67	0.50	93.31 *	35.70	6.56E+00	1.41E+01
		208.95	2.24		
		300.22	16.00		
SN-126	0.87	87.57 *	37.00	1.63E-01	1.87E-01
EU-155	0.37	86.50 *	30.90	1.96E-01	2.25E-01
		105.30	20.70		
TL-208	0.85	583.14 *	30.22	1.42E+00	5.07E-01
		860.37	4.48		
		2614.66 *	35.85	1.34E+00	4.75E-01
PB-210	0.86	46.50 *	4.25	1.05E+00	1.19E+00
BI-212	0.77	727.17 *	11.80	1.05E+00	1.07E+00
		1620.62	2.75		
PB-212	0.81	238.63 *	44.60	1.88E+00	3.66E-01
		300.09	3.41		
BI-214	0.89	609.31 *	46.30	1.08E+00	3.37E-01
		1120.29 *	15.10	1.48E+00	1.10E+00
		1764.49 *	15.80	1.82E+00	7.07E-01
		2204.22	4.98		
PB-214	0.99	295.21 *	19.19	1.16E+00	6.58E-01
		351.92 *	37.19	1.49E+00	3.79E-01
RA-226	0.99	186.21 *	3.28	6.85E+00	1.30E+01
AC-228	0.97	338.32 *	11.40	1.32E+00	8.84E-01
		911.07 *	27.70	1.66E+00	7.39E-01
		969.11 *	16.60	1.20E+00	8.08E-01
TH-230	0.54	48.44 *	16.90	2.64E-01	3.00E-01

Analysis Report for 1606040-13
CP-5025 02-05

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
TH-230	0.54	62.85	4.60		
		67.67	0.37		
NP-237	0.99	86.50 *	12.60	4.78E-01	5.49E-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	0.997	1.99E+01	3.70E+00	
GA-67	0.503	6.56E+00	1.41E+01	
? SN-126	0.870	1.63E-01	1.87E-01	
? EU-155	0.379	1.96E-01	2.25E-01	
TL-208	0.853	1.38E+00	3.47E-01	
? PB-210	0.863	1.05E+00	1.19E+00	
BI-212	0.778	1.05E+00	1.07E+00	
PB-212	0.816	1.88E+00	3.66E-01	
BI-214	0.895	1.23E+00	2.93E-01	
PB-214	0.996	1.41E+00	3.28E-01	
RA-226	0.994	6.85E+00	1.30E+01	
AC-228	0.976	1.41E+00	4.64E-01	
? TH-230	0.540	2.64E-01	3.00E-01	
? NP-237	0.997	4.78E-01	5.49E-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 1606040-13
CP-5025 02-05

UNIDENTIFIED PEAKS

Peak Locate Performed on : 6/15/2016 7:34:19PM
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 2	64.72	7.65244E-02	19.38		
m 3	76.02	2.15332E-01	9.63		
7	210.28	2.62520E-02	38.52	Tol.	CM-243
9	270.25	2.09071E-02	34.18		
11	329.21	1.08693E-02	61.57	Tol.	LA-140
m 14	518.65	5.41550E-03	57.12		
21	1145.95	4.59325E-03	59.77		
22	1211.33	1.72222E-02	37.81		
23	1376.74	5.47348E-03	26.97		
24	1439.30	5.13889E-03	36.71		
26	1510.76	4.77778E-03	31.31		
27	1531.70	2.05247E-03	45.39		
28	1576.65	1.49306E-03	67.24		
29	1755.41	1.94444E-03	37.80	Sum	
31	1972.15	1.96970E-03	61.47		

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	1.28E-02	1.52E+00	1.52E+00
+	NA-22	1274.54	99.94	6.31E-02	2.07E-01	2.07E-01

Analysis Report for 1606040-13
CP-5025 02-05

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	NA-24	1368.53	99.99	6.53E+03	3.14E+05	3.82E+05
		2754.09	99.86	-1.13E+04		3.14E+05
+	AL-26	1808.65	99.76	-3.16E-02	1.67E-01	1.67E-01
+	K-40	1460.81	* 10.67	1.99E+01	2.56E+00	2.56E+00
+	@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88	94.40	-1.46E-01	1.00E-01	1.00E-01
		78.34	96.00	3.23E-01		1.27E-01
+	SC-46	889.25	99.98	2.50E-02	1.96E-01	1.96E-01
		1120.51	99.99	2.03E-01		2.86E-01
+	V-48	983.52	99.98	1.62E-01	3.67E-01	3.67E-01
		1312.10	97.50	1.74E-01		3.96E-01
+	CR-51	320.08	9.83	-2.83E-02	1.77E+00	1.77E+00
+	MN-54	834.83	99.97	6.42E-02	2.02E-01	2.02E-01
+	CO-56	846.75	99.96	-1.87E-02	2.09E-01	2.09E-01
		1037.75	14.03	1.45E-01		1.49E+00
		1238.25	67.00	-9.45E-02		4.02E-01
		1771.40	15.51	-6.31E-01		1.46E+00
		2598.48	16.90	-3.04E-01		9.81E-01
+	CO-57	122.06	85.51	-4.96E-02	1.17E-01	1.17E-01
		136.48	10.60	-1.76E-01		9.74E-01
+	CO-58	810.76	99.40	3.89E-02	1.79E-01	1.79E-01
+	FE-59	1099.22	56.50	1.51E-01	5.09E-01	5.09E-01
		1291.56	43.20	-7.78E-02		5.47E-01
+	CO-60	1173.22	100.00	0.00E+00	1.95E-01	2.21E-01
		1332.49	100.00	-8.21E-02		1.95E-01
+	ZN-65	1115.52	50.75	8.01E-03	4.85E-01	4.85E-01
+	GA-67	93.31	* 35.70	6.56E+00	6.72E+00	6.72E+00
		208.95	2.24	8.77E+01		9.54E+01
		300.22	16.00	-5.12E-01		1.40E+01
+	SE-75	121.11	16.70	-8.82E-02	1.82E-01	6.24E-01
		136.00	59.20	-4.60E-02		1.82E-01
		264.65	59.80	1.57E-02		2.09E-01
		279.53	25.20	9.02E-02		5.23E-01
		400.65	11.40	-5.34E-01		1.23E+00
+	RB-82	776.52	13.00	-1.15E-01	1.71E+00	1.71E+00
+	RB-83	520.41	46.00	-8.19E-03	3.49E-01	3.49E-01
		529.64	30.30	1.19E-01		5.39E-01
		552.65	16.40	-3.24E-01		9.89E-01
+	KR-85	513.99	0.43	4.53E+01	4.40E+01	4.40E+01
+	SR-85	513.99	99.27	2.28E-01	2.21E-01	2.21E-01
+	Y-88	898.02	93.40	1.60E-02	1.64E-01	2.27E-01
		1836.01	99.38	2.72E-02		1.64E-01
+	NB-93M	16.57	9.43	1.02E+00	4.75E-01	4.75E-01
+	NB-94	702.63	100.00	1.06E-02	1.72E-01	1.72E-01
		871.10	100.00	1.91E-02		1.74E-01
+	NB-95	765.79	99.81	1.05E-01	2.55E-01	2.55E-01
+	NB-95M	235.69	25.00	-1.29E+00	9.80E+00	9.80E+00

Analysis Report for 1606040-13

CP-5025 02-05

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	ZR-95	724.18	43.70	-1.40E-01	3.50E-01	5.56E-01
		756.72	55.30	-3.94E-02		3.50E-01
+	MO-99	181.06	6.20	6.04E-01	3.63E+01	5.23E+01
		739.58	12.80	-3.48E+01		3.63E+01
		778.00	4.50	-2.64E+01		9.26E+01
+	RU-103	497.08	89.00	-4.67E-02	2.05E-01	2.05E-01
+	RU-106	621.84	9.80	4.09E-01	1.63E+00	1.63E+00
+	AG-108M	433.93	89.90	-8.84E-02	1.38E-01	1.38E-01
		614.37	90.40	-3.00E-02		1.88E-01
		722.95	90.50	-4.10E-02		2.25E-01
+	CD-109	88.03	3.72	1.61E-01	2.93E+00	2.93E+00
+	AG-110M	657.75	93.14	9.45E-02	2.01E-01	2.01E-01
		677.61	10.53	6.17E-01		1.65E+00
		706.67	16.46	-5.56E-02		1.06E+00
		763.93	21.98	9.03E-02		8.97E-01
		884.67	71.63	-4.52E-02		2.24E-01
		1384.27	23.94	1.26E-01		7.72E-01
+	CD-113M	263.70	0.02	-2.50E+01	4.87E+02	4.87E+02
+	SN-113	255.12	1.93	9.87E-01	2.34E-01	6.69E+00
		391.69	64.90	1.06E-01		2.34E-01
+	TE123M	159.00	84.10	5.18E-02	1.42E-01	1.42E-01
+	SB-124	602.71	97.87	7.84E-03	1.80E-01	1.80E-01
		645.85	7.26	-1.04E+00		2.26E+00
		722.78	11.10	-1.99E-01		1.93E+00
		1691.02	49.00	-1.63E-01		3.33E-01
+	I-125	35.49	6.49	4.62E-01	9.82E-01	9.82E-01
+	SB-125	176.33	6.89	-5.25E-01	4.49E-01	1.56E+00
		427.89	29.33	-1.37E-01		4.49E-01
		463.38	10.35	8.95E-01		1.53E+00
		600.56	17.80	1.13E-01		8.86E-01
		635.90	11.32	-3.39E-01		1.50E+00
+	SB-126	414.70	83.30	-2.84E-02	3.42E-01	3.51E-01
		666.33	99.60	-1.38E-01		3.42E-01
		695.00	99.60	6.00E-02		3.64E-01
		720.50	53.80	-2.11E-01		6.34E-01
+	SN-126	87.57	* 37.00	1.63E-01	3.06E-01	3.06E-01
+	SB-127	473.00	25.00	1.94E-01	4.36E+00	5.73E+00
		685.20	35.70	-3.58E+00		4.36E+00
		783.80	14.70	-4.94E+00		1.07E+01
+	I-129	29.78	57.00	-1.43E-02	8.98E-02	8.98E-02
		33.60	13.20	5.98E-02		4.04E-01
		39.58	7.52	-1.98E-01		7.35E-01
+	I-131	284.30	6.05	3.34E-01	4.74E-01	6.22E+00
		364.48	81.20	-1.46E-01		4.74E-01
		636.97	7.26	4.99E+00		7.73E+00
		722.89	1.80	-3.29E+00		3.20E+01
+	TE-132	49.72	13.10	-1.82E-01	2.27E+00	8.71E+00
		228.16	88.00	4.83E-01		2.27E+00

Analysis Report for 1606040-13
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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	BA-133	81.00	33.00	-3.57E-02	3.22E-01	3.47E-01
		302.84	17.80	8.34E-02		7.12E-01
		356.01	60.00	-4.81E-02		3.22E-01
+	I-133	529.87	86.30	1.49E+03	6.74E+03	6.74E+03
+	XE-133	81.00	38.00	-1.78E-01	1.73E+00	1.73E+00
+	CS-134	563.23	8.38	4.21E-01	2.01E-01	1.93E+00
		569.32	15.43	-2.93E-01		9.46E-01
		604.70	97.60	3.76E-03		2.01E-01
		795.84	85.40	7.05E-02		2.43E-01
		801.93	8.73	-2.77E-01		2.12E+00
+	CS-135	268.24	16.00	2.84E-01	7.70E-01	7.70E-01
+	I-135	1131.51	22.50	-6.77E+12	1.63E+14	2.30E+14
		1260.41	28.60	-8.09E+13		1.63E+14
		1678.03	9.54	-9.07E+13		4.27E+14
+	CS-136	153.22	7.46	4.60E-01	3.37E-01	2.91E+00
		163.89	4.61	1.09E+00		4.85E+00
		176.55	13.56	-5.31E-01		1.58E+00
		273.65	12.66	2.18E-02		2.03E+00
		340.57	48.50	-1.42E-02		6.33E-01
		818.50	99.70	1.24E-01		3.37E-01
		1048.07	79.60	2.26E-01		5.47E-01
		1235.34	19.70	-2.51E-01		2.44E+00
+	CS-137	661.65	85.12	7.65E-02	2.10E-01	2.10E-01
+	LA-138	788.74	34.00	-2.12E-01	2.86E-01	4.69E-01
		1435.80	66.00	1.38E-02		2.86E-01
+	CE-139	165.85	80.35	-3.09E-02	1.46E-01	1.46E-01
+	BA-140	162.64	6.70	-1.01E+00	1.11E+00	3.31E+00
		304.84	4.50	-1.93E-01		5.73E+00
		423.70	3.20	-1.54E+00		8.60E+00
		437.55	2.00	3.40E+00		1.35E+01
		537.32	25.00	-5.45E-01		1.11E+00
+	LA-140	328.77	20.50	8.09E-01	3.82E-01	1.36E+00
		487.03	45.50	-4.08E-01		5.61E-01
		815.85	23.50	-5.94E-01		1.30E+00
		1596.49	95.49	-2.93E-02		3.82E-01
+	CE-141	145.44	48.40	8.35E-02	2.82E-01	2.82E-01
+	CE-143	57.36	11.80	1.91E+01	2.94E+02	5.11E+02
		293.26	42.00	4.10E+02		2.94E+02
		664.55	5.20	-1.24E+02		2.61E+03
+	CE-144	133.54	10.80	1.64E-01	9.82E-01	9.82E-01
+	PM-144	476.78	42.00	-2.19E-02	1.52E-01	3.26E-01
		618.01	98.60	2.22E-02		1.52E-01
		696.49	99.49	-5.23E-02		1.72E-01
+	PM-145	36.85	21.70	9.48E-02	1.39E-01	2.56E-01
		37.36	39.70	-7.50E-03		1.39E-01
		42.30	15.10	2.43E-02		3.96E-01
		72.40	2.31	5.88E+00		4.98E+00
+	PM-146	453.90	39.94	-3.70E-02	3.45E-01	3.45E-01
		735.90	14.01	1.65E-01		1.26E+00

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	PM-146	747.13	13.10	7.01E-01	3.45E-01	1.41E+00
+	ND-147	91.11	28.90	1.95E+00	9.07E-01	9.07E-01
		531.02	13.10	-1.53E-01		2.50E+00
+	PM-149	285.90	3.10	-2.22E+01	2.43E+02	2.43E+02
+	EU-152	121.78	20.50	-2.00E-01	4.71E-01	4.71E-01
		244.69	5.40	-3.26E-01		2.71E+00
		344.27	19.13	-1.81E-02		6.64E-01
		778.89	9.20	-4.61E-01		1.62E+00
		964.01	10.40	2.30E-01		2.34E+00
		1085.78	7.22	1.76E-01		2.69E+00
		1112.02	9.60	2.45E-01		2.34E+00
		1407.95	14.94	6.23E-01		1.45E+00
+	GD-153	97.43	31.30	-4.39E-02	3.12E-01	3.12E-01
		103.18	22.20	-1.65E-01		4.16E-01
+	EU-154	123.07	40.50	-2.09E-01	2.38E-01	2.38E-01
		723.30	19.70	-1.89E-01		1.04E+00
		873.19	11.50	3.81E-01		1.57E+00
		996.32	10.30	0.00E+00		1.81E+00
		1004.76	17.90	1.84E-02		1.10E+00
		1274.45	35.50	1.76E-01		5.79E-01
+	EU-155	86.50	* 30.90	1.96E-01	3.68E-01	3.68E-01
		105.30	20.70	-8.05E-02		4.36E-01
+	EU-156	811.77	10.40	5.86E-01	2.72E+00	2.72E+00
		1153.47	7.20	1.46E-01		5.97E+00
		1230.71	8.90	-5.42E-01		4.73E+00
+	HO-166M	184.41	72.60	2.28E-01	1.81E-01	1.81E-01
		280.45	29.60	-2.02E-03		4.06E-01
		410.94	11.10	4.72E-01		1.29E+00
		711.69	54.10	1.94E-02		3.13E-01
+	TM-171	66.72	0.14	-3.25E+01	6.73E+01	6.73E+01
+	HF-172	81.75	4.52	-6.21E+00	9.14E-01	2.38E+00
		125.81	11.30	5.97E-01		9.14E-01
+	LU-172	181.53	20.60	2.54E-02	1.30E+00	2.32E+00
		810.06	16.63	8.03E-01		3.70E+00
		912.12	15.25	8.58E+00		7.45E+00
		1093.66	62.50	-2.54E-01		1.30E+00
+	LU-173	100.72	5.24	-1.32E+00	6.12E-01	1.68E+00
		272.11	21.20	2.27E-01		6.12E-01
+	HF-175	343.40	84.00	-4.68E-03	1.82E-01	1.82E-01
+	LU-176	88.34	13.30	9.55E-01	1.33E-01	8.25E-01
		201.83	86.00	4.26E-03		1.35E-01
		306.78	94.00	-2.38E-02		1.33E-01
+	TA-182	67.75	41.20	-3.63E-01	2.49E-01	2.49E-01
		1121.30	34.90	4.27E-01		7.75E-01
		1189.05	16.23	-2.32E-01		1.54E+00
		1221.41	26.98	-1.23E-01		9.17E-01
		1231.02	11.44	-2.50E-01		2.18E+00
+	IR-192	308.46	29.68	-9.64E-02	3.29E-01	4.65E-01
		468.07	48.10	-1.30E-01		3.29E-01

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	HG-203	279.19	77.30	3.31E-02	1.92E-01	1.92E-01
+	BI-207	569.67	97.72	-4.57E-02	1.48E-01	1.48E-01
		1063.62	74.90	-6.43E-02		2.78E-01
+	TL-208	583.14	* 30.22	1.42E+00	1.04E-01	6.98E-01
		860.37	4.48	2.18E+00		4.48E+00
		2614.66	* 35.85	1.34E+00		1.04E-01
+	BI-210M	262.00	45.00	1.08E-02	2.55E-01	2.55E-01
		300.00	23.00	6.61E-02		6.51E-01
+	PB-210	46.50	* 4.25	1.05E+00	1.96E+00	1.96E+00
+	PB-211	404.84	2.90	-1.43E+00	4.72E+00	4.72E+00
		831.96	2.90	-2.58E-01		6.58E+00
+	BI-212	727.17	* 11.80	1.05E+00	1.72E+00	1.72E+00
		1620.62	2.75	2.03E-01		5.53E+00
+	PB-212	238.63	* 44.60	1.88E+00	4.40E-01	4.40E-01
		300.09	3.41	4.46E-01		4.39E+00
+	BI-214	609.31	* 46.30	1.08E+00	1.76E-01	4.40E-01
		1120.29	* 15.10	1.48E+00		1.71E+00
		1764.49	* 15.80	1.82E+00		1.76E-01
		2204.22	4.98	2.23E-02		4.45E+00
+	PB-214	295.21	* 19.19	1.16E+00	4.72E-01	1.03E+00
		351.92	* 37.19	1.49E+00		4.72E-01
+	RN-219	401.80	6.50	-1.61E-01	2.07E+00	2.07E+00
+	RA-223	323.87	3.88	3.30E-02	3.30E+00	3.30E+00
+	RA-224	240.98	3.95	2.18E+01	5.33E+00	5.33E+00
+	RA-225	40.00	31.00	-8.95E-02	3.32E-01	3.32E-01
+	RA-226	186.21	* 3.28	6.85E+00	5.16E+00	5.16E+00
+	TH-227	50.10	8.40	-1.70E-02	8.15E-01	8.15E-01
		236.00	11.50	-2.20E-01		1.68E+00
		256.20	6.30	-8.76E-02		1.86E+00
+	AC-228	338.32	* 11.40	1.32E+00	1.09E+00	1.39E+00
		911.07	* 27.70	1.66E+00		1.09E+00
		969.11	* 16.60	1.20E+00		1.40E+00
+	TH-230	48.44	* 16.90	2.64E-01	4.92E-01	4.92E-01
		62.85	4.60	1.81E+00		1.93E+00
		67.67	0.37	-3.73E+01		2.56E+01
+	PA-231	283.67	1.60	-2.25E+00	5.49E+00	7.38E+00
		302.67	2.30	6.44E-01		5.49E+00
+	TH-231	25.64	14.70	-2.31E-01	3.41E-01	3.41E-01
		84.21	6.40	-6.44E+00		1.55E+00
+	PA-233	311.98	38.60	-4.35E-02	4.45E-01	4.45E-01
+	PA-234	131.20	20.40	2.51E-01	5.11E-01	5.11E-01
		733.99	8.80	3.29E-01		1.98E+00
		946.00	12.00	2.22E-01		1.51E+00
+	PA-234M	1001.03	0.92	3.97E+00	2.19E+01	2.19E+01
+	TH-234	63.29	3.80	2.40E+00	2.37E+00	2.37E+00
+	U-235	143.76	10.50	-3.60E-01	9.54E-01	9.54E-01
		163.35	4.70	5.31E-01		2.36E+00

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	U-235	205.31	4.70	-4.82E-02	9.54E-01	2.60E+00
+	NP-237	86.50	* 12.60	4.78E-01	8.99E-01	8.99E-01
+	NP-239	106.10	22.70	-3.61E+00	1.96E+01	1.96E+01
		228.18	10.70	1.77E+01		5.53E+01
		277.60	14.10	1.22E+01		4.25E+01
+	AM-241	59.54	35.90	-1.03E-02	2.32E-01	2.32E-01
+	AM-243	74.67	66.00	7.92E-01	1.91E-01	1.91E-01
+	CM-243	209.75	3.29	4.80E+00	8.71E-01	3.93E+00
		228.14	10.60	2.40E-01		1.13E+00
		277.60	14.00	2.51E-01		8.71E-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	1.52E+00	1.52E+00	1.28E-02	7.15E-01
	NA-22	1274.54	99.94	2.07E-01	2.07E-01	6.31E-02	9.29E-02
	NA-24	1368.53	99.99	3.82E+05	3.14E+05	6.53E+03	1.64E+05
		2754.09	99.86	3.14E+05		-1.13E+04	1.11E+05
	AL-26	1808.65	99.76	1.67E-01	1.67E-01	-3.16E-02	6.92E-02
+	K-40	1460.81	* 10.67	2.56E+00	2.56E+00	1.99E+01	1.17E+00
@	AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	TI-44	67.88	94.40	1.00E-01	1.00E-01	-1.46E-01	4.93E-02
		78.34	96.00	1.27E-01		3.23E-01	6.27E-02
	SC-46	889.25	99.98	1.96E-01	1.96E-01	2.50E-02	8.95E-02
		1120.51	99.99	2.86E-01		2.03E-01	1.33E-01
	V-48	983.52	99.98	3.67E-01	3.67E-01	1.62E-01	1.69E-01
		1312.10	97.50	3.96E-01		1.74E-01	1.79E-01

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
CR-51	320.08	9.83	1.77E+00	1.77E+00	-2.83E-02	8.46E-01
MN-54	834.83	99.97	2.02E-01	2.02E-01	6.42E-02	9.39E-02
CO-56	846.75	99.96	2.09E-01	2.09E-01	-1.87E-02	9.63E-02
	1037.75	14.03	1.49E+00		1.45E-01	6.75E-01
	1238.25	67.00	4.02E-01		-9.45E-02	1.84E-01
	1771.40	15.51	1.46E+00		-6.31E-01	6.27E-01
	2598.48	16.90	9.81E-01		-3.04E-01	3.67E-01
CO-57	122.06	85.51	1.17E-01	1.17E-01	-4.96E-02	5.69E-02
	136.48	10.60	9.74E-01		-1.76E-01	4.74E-01
CO-58	810.76	99.40	1.79E-01	1.79E-01	3.89E-02	8.17E-02
FE-59	1099.22	56.50	5.09E-01	5.09E-01	1.51E-01	2.34E-01
	1291.56	43.20	5.47E-01		-7.78E-02	2.43E-01
CO-60	1173.22	100.00	2.21E-01	1.95E-01	0.00E+00	1.01E-01
	1332.49	100.00	1.95E-01		-8.21E-02	8.65E-02
ZN-65	1115.52	50.75	4.85E-01	4.85E-01	8.01E-03	2.24E-01
+ GA-67	93.31	* 35.70	6.72E+00	6.72E+00	6.56E+00	3.31E+00
	208.95	2.24	9.54E+01		8.77E+01	4.63E+01
	300.22	16.00	1.40E+01		-5.12E-01	6.73E+00
SE-75	121.11	16.70	6.24E-01	1.82E-01	-8.82E-02	3.04E-01
	136.00	59.20	1.82E-01		-4.60E-02	8.83E-02
	264.65	59.80	2.09E-01		1.57E-02	1.00E-01
	279.53	25.20	5.23E-01		9.02E-02	2.51E-01
	400.65	11.40	1.23E+00		-5.34E-01	5.84E-01
RB-82	776.52	13.00	1.71E+00	1.71E+00	-1.15E-01	7.84E-01
RB-83	520.41	46.00	3.49E-01	3.49E-01	-8.19E-03	1.64E-01
	529.64	30.30	5.39E-01		1.19E-01	2.53E-01
	552.65	16.40	9.89E-01		-3.24E-01	4.63E-01
KR-85	513.99	0.43	4.40E+01	4.40E+01	4.53E+01	2.10E+01
SR-85	513.99	99.27	2.21E-01	2.21E-01	2.28E-01	1.05E-01
Y-88	898.02	93.40	2.27E-01	1.64E-01	1.60E-02	1.05E-01
	1836.01	99.38	1.64E-01		2.72E-02	6.64E-02
NB-93M	16.57	9.43	4.75E-01	4.75E-01	1.02E+00	2.30E-01
NB-94	702.63	100.00	1.72E-01	1.72E-01	1.06E-02	8.03E-02
	871.10	100.00	1.74E-01		1.91E-02	7.96E-02
NB-95	765.79	99.81	2.55E-01	2.55E-01	1.05E-01	1.19E-01
NB-95M	235.69	25.00	9.80E+00	9.80E+00	-1.29E+00	4.80E+00
ZR-95	724.18	43.70	5.56E-01	3.50E-01	-1.40E-01	2.62E-01
	756.72	55.30	3.50E-01		-3.94E-02	1.62E-01
MO-99	181.06	6.20	5.23E+01	3.63E+01	6.04E-01	2.54E+01
	739.58	12.80	3.63E+01		-3.48E+01	1.68E+01
	778.00	4.50	9.26E+01		-2.64E+01	4.22E+01
RU-103	497.08	89.00	2.05E-01	2.05E-01	-4.67E-02	9.64E-02
RU-106	621.84	9.80	1.63E+00	1.63E+00	4.09E-01	7.62E-01
AG-108M	433.93	89.90	1.38E-01	1.38E-01	-8.84E-02	6.47E-02
	614.37	90.40	1.88E-01		-3.00E-02	8.84E-02
	722.95	90.50	2.25E-01		-4.10E-02	1.06E-01
CD-109	88.03	3.72	2.93E+00	2.93E+00	1.61E-01	1.44E+00
AG-110M	657.75	93.14	2.01E-01	2.01E-01	9.45E-02	9.46E-02
	677.61	10.53	1.65E+00		6.17E-01	7.69E-01
	706.67	16.46	1.06E+00		-5.56E-02	4.92E-01
	763.93	21.98	8.97E-01		9.03E-02	4.18E-01
	884.67	71.63	2.24E-01		-4.52E-02	1.01E-01
	1384.27	23.94	7.72E-01		1.26E-01	3.37E-01

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
CD-113M	263.70	0.02	4.87E+02	4.87E+02	-2.50E+01	2.33E+02
SN-113	255.12	1.93	6.69E+00	2.34E-01	9.87E-01	3.22E+00
	391.69	64.90	2.34E-01		1.06E-01	1.11E-01
TE123M	159.00	84.10	1.42E-01	1.42E-01	5.18E-02	6.89E-02
SB-124	602.71	97.87	1.80E-01	1.80E-01	7.84E-03	8.41E-02
	645.85	7.26	2.26E+00		-1.04E+00	1.04E+00
	722.78	11.10	1.93E+00		-1.99E-01	9.00E-01
	1691.02	49.00	3.33E-01		-1.63E-01	1.34E-01
I-125	35.49	6.49	9.82E-01	9.82E-01	4.62E-01	4.78E-01
SB-125	176.33	6.89	1.56E+00	4.49E-01	-5.25E-01	7.57E-01
	427.89	29.33	4.49E-01		-1.37E-01	2.12E-01
	463.38	10.35	1.53E+00		8.95E-01	7.26E-01
	600.56	17.80	8.86E-01		1.13E-01	4.14E-01
	635.90	11.32	1.50E+00		-3.39E-01	7.04E-01
SB-126	414.70	83.30	3.51E-01	3.42E-01	-2.84E-02	1.67E-01
	666.33	99.60	3.42E-01		-1.38E-01	1.59E-01
	695.00	99.60	3.64E-01		6.00E-02	1.70E-01
	720.50	53.80	6.34E-01		-2.11E-01	2.94E-01
+ SN-126	87.57 *	37.00	3.06E-01	3.06E-01	1.63E-01	1.50E-01
SB-127	473.00	25.00	5.73E+00	4.36E+00	1.94E-01	2.69E+00
	685.20	35.70	4.36E+00		-3.58E+00	2.00E+00
	783.80	14.70	1.07E+01		-4.94E+00	4.88E+00
I-129	29.78	57.00	8.98E-02	8.98E-02	-1.43E-02	4.37E-02
	33.60	13.20	4.04E-01		5.98E-02	1.97E-01
	39.58	7.52	7.35E-01		-1.98E-01	3.58E-01
I-131	284.30	6.05	6.22E+00	4.74E-01	3.34E-01	2.98E+00
	364.48	81.20	4.74E-01		-1.46E-01	2.25E-01
	636.97	7.26	7.73E+00		4.99E+00	3.63E+00
	722.89	1.80	3.20E+01		-3.29E+00	1.49E+01
TE-132	49.72	13.10	8.71E+00	2.27E+00	-1.82E-01	4.26E+00
	228.16	88.00	2.27E+00		4.83E-01	1.10E+00
BA-133	81.00	33.00	3.47E-01	3.22E-01	-3.57E-02	1.70E-01
	302.84	17.80	7.12E-01		8.34E-02	3.41E-01
	356.01	60.00	3.22E-01		-4.81E-02	1.56E-01
I-133	529.87	86.30	6.74E+03	6.74E+03	1.49E+03	3.16E+03
XE-133	81.00	38.00	1.73E+00	1.73E+00	-1.78E-01	8.49E-01
CS-134	563.23	8.38	1.93E+00	2.01E-01	4.21E-01	9.07E-01
	569.32	15.43	9.46E-01		-2.93E-01	4.41E-01
	604.70	97.60	2.01E-01		3.76E-03	9.52E-02
	795.84	85.40	2.43E-01		7.05E-02	1.13E-01
	801.93	8.73	2.12E+00		-2.77E-01	9.80E-01
CS-135	268.24	16.00	7.70E-01	7.70E-01	2.84E-01	3.70E-01
I-135	1131.51	22.50	2.30E+14	1.63E+14	-6.77E+12	1.03E+14
	1260.41	28.60	1.63E+14		-8.09E+13	7.07E+13
	1678.03	9.54	4.27E+14		-9.07E+13	1.72E+14
CS-136	153.22	7.46	2.91E+00	3.37E-01	4.60E-01	1.42E+00
	163.89	4.61	4.85E+00		1.09E+00	2.36E+00
	176.55	13.56	1.58E+00		-5.31E-01	7.67E-01
	273.65	12.66	2.03E+00		2.18E-02	9.75E-01
	340.57	48.50	6.33E-01		-1.42E-02	3.04E-01
	818.50	99.70	3.37E-01		1.24E-01	1.55E-01
	1048.07	79.60	5.47E-01		2.26E-01	2.52E-01
	1235.34	19.70	2.44E+00		-2.51E-01	1.12E+00

Analysis Report for 1606040-13
CP-5025 02-05

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
CS-137	661.65	85.12	2.10E-01	2.10E-01	7.65E-02	9.85E-02
LA-138	788.74	34.00	4.69E-01	2.86E-01	-2.12E-01	2.15E-01
	1435.80	66.00	2.86E-01		1.38E-02	1.25E-01
CE-139	165.85	80.35	1.46E-01	1.46E-01	-3.09E-02	7.10E-02
BA-140	162.64	6.70	3.31E+00	1.11E+00	-1.01E+00	1.61E+00
	304.84	4.50	5.73E+00		-1.93E-01	2.74E+00
	423.70	3.20	8.60E+00		-1.54E+00	4.07E+00
	437.55	2.00	1.35E+01		3.40E+00	6.39E+00
	537.32	25.00	1.11E+00		-5.45E-01	5.17E-01
LA-140	328.77	20.50	1.36E+00	3.82E-01	8.09E-01	6.50E-01
	487.03	45.50	5.61E-01		-4.08E-01	2.62E-01
	815.85	23.50	1.30E+00		-5.94E-01	5.91E-01
	1596.49	95.49	3.82E-01		-2.93E-02	1.64E-01
CE-141	145.44	48.40	2.82E-01	2.82E-01	8.35E-02	1.37E-01
CE-143	57.36	11.80	5.11E+02	2.94E+02	1.91E+01	2.50E+02
	293.26	42.00	2.94E+02		4.10E+02	1.42E+02
	664.55	5.20	2.61E+03		-1.24E+02	1.22E+03
CE-144	133.54	10.80	9.82E-01	9.82E-01	1.64E-01	4.78E-01
PM-144	476.78	42.00	3.26E-01	1.52E-01	-2.19E-02	1.53E-01
	618.01	98.60	1.52E-01		2.22E-02	7.05E-02
	696.49	99.49	1.72E-01		-5.23E-02	8.00E-02
PM-145	36.85	21.70	2.56E-01	1.39E-01	9.48E-02	1.25E-01
	37.36	39.70	1.39E-01		-7.50E-03	6.77E-02
	42.30	15.10	3.96E-01		2.43E-02	1.93E-01
	72.40	2.31	4.98E+00		5.88E+00	2.45E+00
PM-146	453.90	39.94	3.45E-01	3.45E-01	-3.70E-02	1.63E-01
	735.90	14.01	1.26E+00		1.65E-01	5.88E-01
	747.13	13.10	1.41E+00		7.01E-01	6.59E-01
ND-147	91.11	28.90	9.07E-01	9.07E-01	1.95E+00	4.45E-01
	531.02	13.10	2.50E+00		-1.53E-01	1.17E+00
PM-149	285.90	3.10	2.43E+02	2.43E+02	-2.22E+01	1.16E+02
EU-152	121.78	20.50	4.71E-01	4.71E-01	-2.00E-01	2.30E-01
	244.69	5.40	2.71E+00		-3.26E-01	1.31E+00
	344.27	19.13	6.64E-01		-1.81E-02	3.16E-01
	778.89	9.20	1.62E+00		-4.61E-01	7.37E-01
	964.01	10.40	2.34E+00		2.30E-01	1.09E+00
	1085.78	7.22	2.69E+00		1.76E-01	1.22E+00
	1112.02	9.60	2.34E+00		2.45E-01	1.08E+00
	1407.95	14.94	1.45E+00		6.23E-01	6.48E-01
GD-153	97.43	31.30	3.12E-01	3.12E-01	-4.39E-02	1.52E-01
	103.18	22.20	4.16E-01		-1.65E-01	2.03E-01
EU-154	123.07	40.50	2.38E-01	2.38E-01	-2.09E-01	1.16E-01
	723.30	19.70	1.04E+00		-1.89E-01	4.87E-01
	873.19	11.50	1.57E+00		3.81E-01	7.21E-01
	996.32	10.30	1.81E+00		0.00E+00	8.25E-01
	1004.76	17.90	1.10E+00		1.84E-02	5.05E-01
	1274.45	35.50	5.79E-01		1.76E-01	2.60E-01
+ EU-155	86.50	* 30.90	3.68E-01	3.68E-01	1.96E-01	1.81E-01
	105.30	20.70	4.36E-01		-8.05E-02	2.12E-01
EU-156	811.77	10.40	2.72E+00	2.72E+00	5.86E-01	1.24E+00
	1153.47	7.20	5.97E+00		1.46E-01	2.74E+00
	1230.71	8.90	4.73E+00		-5.42E-01	2.15E+00
HO-166M	184.41	72.60	1.81E-01	1.81E-01	2.28E-01	8.82E-02

Analysis Report for 1606040-13
CP-5025 02-05

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
HO-166M	280.45	29.60	4.06E-01	1.81E-01	-2.02E-03	1.95E-01
	410.94	11.10	1.29E+00		4.72E-01	6.11E-01
	711.69	54.10	3.13E-01		1.94E-02	1.45E-01
TM-171	66.72	0.14	6.73E+01	6.73E+01	-3.25E+01	3.30E+01
HF-172	81.75	4.52	2.38E+00	9.14E-01	-6.21E+00	1.17E+00
	125.81	11.30	9.14E-01		5.97E-01	4.46E-01
LU-172	181.53	20.60	2.32E+00	1.30E+00	2.54E-02	1.13E+00
	810.06	16.63	3.70E+00		8.03E-01	1.69E+00
	912.12	15.25	7.45E+00		8.58E+00	3.53E+00
LU-173	1093.66	62.50	1.30E+00		-2.54E-01	5.91E-01
	100.72	5.24	1.68E+00	6.12E-01	-1.32E+00	8.16E-01
	272.11	21.20	6.12E-01		2.27E-01	2.94E-01
HF-175	343.40	84.00	1.82E-01	1.82E-01	-4.68E-03	8.68E-02
LU-176	88.34	13.30	8.25E-01	1.33E-01	9.55E-01	4.05E-01
	201.83	86.00	1.35E-01		4.26E-03	6.53E-02
	306.78	94.00	1.33E-01		-2.38E-02	6.37E-02
TA-182	67.75	41.20	2.49E-01	2.49E-01	-3.63E-01	1.22E-01
	1121.30	34.90	7.75E-01		4.27E-01	3.59E-01
	1189.05	16.23	1.54E+00		-2.32E-01	7.06E-01
	1221.41	26.98	9.17E-01		-1.23E-01	4.18E-01
	1231.02	11.44	2.18E+00		-2.50E-01	9.93E-01
IR-192	308.46	29.68	4.65E-01	3.29E-01	-9.64E-02	2.22E-01
	468.07	48.10	3.29E-01		-1.30E-01	1.55E-01
HG-203	279.19	77.30	1.92E-01	1.92E-01	3.31E-02	9.22E-02
BI-207	569.67	97.72	1.48E-01	1.48E-01	-4.57E-02	6.89E-02
	1063.62	74.90	2.78E-01		-6.43E-02	1.27E-01
+ TL-208	583.14	*	30.22	1.04E-01	1.42E+00	3.33E-01
	860.37		4.48	4.48E+00	2.18E+00	2.08E+00
	2614.66	*	35.85	1.04E-01	1.34E+00	0.00E+00
BI-210M	262.00	45.00	2.55E-01	2.55E-01	1.08E-02	1.22E-01
	300.00	23.00	6.51E-01		6.61E-02	3.14E-01
+ PB-210	46.50	*	4.25	1.96E+00	1.05E+00	9.62E-01
	404.84		2.90	4.72E+00	4.72E+00	-1.43E+00
+ BI-212	831.96		2.90	6.58E+00	-2.58E-01	3.05E+00
	727.17	*	11.80	1.72E+00	1.72E+00	1.05E+00
+ PB-212	1620.62		2.75	5.53E+00	2.03E-01	2.29E+00
	238.63	*	44.60	4.40E-01	4.40E-01	1.88E+00
+ BI-214	300.09		3.41	4.39E+00	4.46E-01	2.12E+00
	609.31	*	46.30	4.40E-01	1.76E-01	1.08E+00
+ PB-214	1120.29	*	15.10	1.71E+00	1.48E+00	7.95E-01
	1764.49	*	15.80	1.76E-01	1.82E+00	0.00E+00
	2204.22		4.98	4.45E+00	2.23E-02	1.89E+00
+ RN-219	295.21	*	19.19	1.03E+00	4.72E-01	1.16E+00
	351.92	*	37.19	4.72E-01	1.49E+00	2.28E-01
RA-223	401.80	6.50	2.07E+00	2.07E+00	-1.61E-01	9.81E-01
RA-224	323.87	3.88	3.30E+00	3.30E+00	3.30E-02	1.58E+00
RA-225	240.98	3.95	5.33E+00	5.33E+00	2.18E+01	2.61E+00
RA-226	40.00	31.00	3.32E-01	3.32E-01	-8.95E-02	1.62E-01
+ TH-227	186.21	*	3.28	5.16E+00	5.16E+00	6.85E+00
	50.10		8.40	8.15E-01	8.15E-01	-1.70E-02
+ AC-228	236.00		11.50	1.68E+00	-2.20E-01	8.22E-01
	256.20		6.30	1.86E+00	-8.76E-02	8.95E-01
	338.32	*	11.40	1.39E+00	1.09E+00	1.32E+00

Analysis Report for 1606040-13
 CP-5025 02-05

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
AC-228	911.07 *	27.70	1.09E+00	1.09E+00	1.66E+00	5.16E-01
	969.11 *	16.60	1.40E+00		1.20E+00	6.51E-01
+ TH-230	48.44 *	16.90	4.92E-01	4.92E-01	2.64E-01	2.42E-01
	62.85	4.60	1.93E+00		1.81E+00	9.46E-01
	67.67	0.37	2.56E+01		-3.73E+01	1.25E+01
PA-231	283.67	1.60	7.38E+00	5.49E+00	-2.25E+00	3.54E+00
	302.67	2.30	5.49E+00		6.44E-01	2.63E+00
TH-231	25.64	14.70	3.41E-01	3.41E-01	-2.31E-01	1.66E-01
	84.21	6.40	1.55E+00		-6.44E+00	7.58E-01
PA-233	311.98	38.60	4.45E-01	4.45E-01	-4.35E-02	2.13E-01
PA-234	131.20	20.40	5.11E-01	5.11E-01	2.51E-01	2.49E-01
	733.99	8.80	1.98E+00		3.29E-01	9.21E-01
	946.00	12.00	1.51E+00		2.22E-01	6.91E-01
PA-234M	1001.03	0.92	2.19E+01	2.19E+01	3.97E+00	1.00E+01
TH-234	63.29	3.80	2.37E+00	2.37E+00	2.40E+00	1.16E+00
U-235	143.76	10.50	9.54E-01	9.54E-01	-3.60E-01	4.64E-01
	163.35	4.70	2.36E+00		5.31E-01	1.15E+00
	205.31	4.70	2.60E+00		-4.82E-02	1.26E+00
+ NP-237	86.50 *	12.60	8.99E-01	8.99E-01	4.78E-01	4.41E-01
NP-239	106.10	22.70	1.96E+01	1.96E+01	-3.61E+00	9.53E+00
	228.18	10.70	5.53E+01		1.77E+01	2.67E+01
	277.60	14.10	4.25E+01		1.22E+01	2.04E+01
AM-241	59.54	35.90	2.32E-01	2.32E-01	-1.03E-02	1.14E-01
AM-243	74.67	66.00	1.91E-01	1.91E-01	7.92E-01	9.41E-02
CM-243	209.75	3.29	3.93E+00	8.71E-01	4.80E+00	1.91E+00
	228.14	10.60	1.13E+00		2.40E-01	5.46E-01
	277.60	14.00	8.71E-01		2.51E-01	4.18E-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

No Action Level results available for reporting purposes.

DATA REVIEW COMMENTS REPORT

Creation Date	Comment	User
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Analysis Report for 1606040-13
CP-5025 02-05

No Data Review Comments Entered.

369: 12 11 20 15 13 16 16 14

Sample Title: CP-5025 02-05

Channel	12	11	20	15	13	16	16	14
377:	13	7	16	11	10	12	18	14
385:	10	9	12	17	17	23	10	13
393:	14	14	15	8	15	16	9	9
401:	16	17	9	11	15	16	14	13
409:	21	18	11	6	15	13	9	11
417:	16	20	10	10	15	14	12	14
425:	9	8	13	15	11	5	10	11
433:	11	14	7	7	8	15	9	15
441:	9	9	9	11	8	11	10	8
449:	12	11	6	11	13	10	6	16
457:	10	13	18	6	12	19	16	17
465:	14	8	11	6	9	8	11	9
473:	13	7	11	7	7	6	8	13
481:	9	11	8	7	7	4	5	7
489:	4	14	13	10	11	12	10	9
497:	14	8	9	6	9	5	12	13
505:	9	7	11	10	18	38	29	22
513:	9	8	6	8	9	12	10	7
521:	3	11	9	11	9	8	7	11
529:	5	14	7	10	9	3	6	8
537:	9	12	4	7	7	7	10	9
545:	12	12	8	7	8	11	7	12
553:	5	6	6	10	6	11	9	11
561:	8	11	12	9	8	7	9	8
569:	7	8	8	5	6	5	10	7
577:	6	10	9	7	15	35	48	29
585:	10	8	8	3	7	5	4	3
593:	12	9	6	8	12	7	9	9
601:	9	6	7	3	11	4	18	42
609:	45	30	14	6	5	5	2	4
617:	9	5	6	7	11	8	7	4
625:	8	5	6	13	9	5	5	12
633:	6	7	7	9	7	11	9	15
641:	6	7	4	8	4	5	5	6
649:	3	7	0	5	7	8	12	8
657:	7	9	5	10	13	14	6	6
665:	6	6	4	4	5	10	10	5
673:	9	5	3	7	8	8	6	7
681:	10	6	1	1	4	3	10	5
689:	4	9	10	7	6	5	6	12
697:	3	8	7	5	8	7	9	5
705:	7	6	6	4	9	5	8	7
713:	5	9	5	2	8	9	8	3
721:	5	6	9	2	7	18	25	14
729:	5	5	7	9	8	7	4	10
737:	5	3	6	5	6	7	5	9
745:	12	11	2	6	5	6	7	2
753:	5	5	4	8	10	7	5	4
761:	12	1	5	7	6	9	14	6
769:	8	4	6	8	4	4	2	5
777:	3	2	4	8	4	4	3	3
785:	6	2	0	7	6	6	9	2
793:	5	11	10	9	6	8	9	4

801: 10 5 6 5 2 4 6 5

Sample Title: CP-5025 02-05

Channel	10	5	6	5	2	4	6	5
809:	5	3	2	3	4	5	3	2
817:	3	4	7	4	8	6	3	3
825:	5	6	7	4	4	5	5	6
833:	6	7	9	8	7	4	8	4
841:	3	7	7	8	2	6	5	4
849:	4	6	8	1	10	2	4	8
857:	5	6	6	9	5	3	10	4
865:	5	1	4	4	2	7	4	8
873:	2	3	6	4	7	3	3	8
881:	2	3	1	0	4	1	4	7
889:	4	5	2	7	5	7	6	6
897:	3	8	4	5	4	5	2	5
905:	9	3	7	4	10	27	30	18
913:	9	4	5	1	7	5	3	3
921:	4	2	2	6	2	2	2	3
929:	2	4	4	6	6	6	8	1
937:	5	3	4	3	2	5	8	5
945:	2	1	2	8	3	3	5	5
953:	2	8	5	1	4	4	7	7
961:	3	5	4	16	8	6	6	12
969:	23	13	4	1	4	4	2	4
977:	2	4	6	2	4	4	10	4
985:	6	6	3	4	3	3	2	4
993:	3	1	6	3	4	6	5	3
1001:	5	4	6	5	3	4	2	7
1009:	4	4	3	5	3	6	5	6
1017:	3	4	1	8	1	1	5	5
1025:	8	3	1	4	1	3	3	5
1033:	4	4	6	4	5	3	2	3
1041:	1	3	4	2	4	3	8	7
1049:	3	6	7	4	4	3	5	4
1057:	5	7	3	3	5	9	1	6
1065:	5	3	4	5	6	4	3	4
1073:	7	2	7	2	5	5	5	4
1081:	2	3	3	1	5	2	2	5
1089:	7	4	0	5	4	1	6	4
1097:	5	7	7	4	2	5	7	6
1105:	3	5	7	3	6	7	4	5
1113:	5	2	5	5	6	7	8	14
1121:	6	4	3	2	2	3	3	4
1129:	5	1	4	2	0	2	3	3
1137:	1	5	6	4	2	2	3	6
1145:	8	7	3	6	5	2	5	2
1153:	6	6	4	5	8	8	4	5
1161:	6	4	4	1	1	3	4	5
1169:	3	4	7	3	2	4	3	5
1177:	5	6	4	2	3	4	9	3
1185:	2	1	4	4	6	5	6	8
1193:	3	6	4	3	4	3	4	1
1201:	7	4	5	1	3	4	13	9
1209:	5	7	6	7	5	4	4	6
1217:	3	6	8	3	4	4	3	4
1225:	1	4	4	5	2	6	5	5

1233: 5 3 1 4 4 8 4 4

Sample Title: CP-5025 02-05

Channel	1	2	3	4	5	6	7	8
1241:	5	6	6	5	5	5	6	4
1249:	6	3	4	4	4	3	2	3
1257:	2	0	1	2	1	1	5	0
1265:	2	3	3	5	4	2	5	1
1273:	2	5	3	1	4	3	1	0
1281:	0	4	3	3	3	5	2	4
1289:	3	2	4	3	2	1	1	2
1297:	4	1	2	1	4	1	3	3
1305:	3	2	2	2	1	1	8	3
1313:	7	4	1	1	2	1	1	1
1321:	5	3	3	3	1	1	3	1
1329:	4	6	4	2	1	0	3	0
1337:	5	4	4	4	2	4	1	3
1345:	2	1	4	1	2	1	2	3
1353:	1	1	0	4	2	0	0	0
1361:	5	0	1	2	1	3	2	2
1369:	1	1	1	0	0	4	2	5
1377:	4	3	3	1	0	0	2	1
1385:	4	3	2	3	3	0	3	2
1393:	0	1	1	0	1	1	0	1
1401:	2	2	2	2	3	3	4	1
1409:	3	2	3	3	1	1	1	0
1417:	2	0	2	0	1	0	4	0
1425:	3	1	0	2	2	1	1	1
1433:	0	1	2	1	3	5	3	1
1441:	2	3	2	2	0	1	1	2
1449:	1	2	1	0	3	2	2	1
1457:	0	13	30	69	89	44	10	2
1465:	0	1	0	2	0	1	1	2
1473:	4	0	3	0	2	0	1	2
1481:	2	2	0	1	3	1	0	2
1489:	0	0	0	0	2	2	1	2
1497:	0	4	0	2	0	0	0	1
1505:	0	2	0	3	3	3	1	2
1513:	2	2	2	0	0	0	0	2
1521:	1	1	1	1	1	0	1	0
1529:	0	2	0	5	2	0	1	0
1537:	1	1	1	1	1	0	2	2
1545:	3	0	1	0	2	0	2	0
1553:	1	1	1	1	1	2	1	1
1561:	4	1	0	0	0	3	3	0
1569:	0	1	0	1	1	0	0	1
1577:	1	4	0	0	0	1	1	0
1585:	1	2	0	8	2	1	3	3
1593:	4	1	0	1	2	0	1	2
1601:	1	0	2	1	2	2	1	0
1609:	1	0	0	0	1	0	1	1
1617:	0	0	3	0	1	0	2	0
1625:	2	0	1	2	1	0	3	0
1633:	3	2	2	2	1	1	2	2
1641:	0	1	0	0	0	1	2	2
1649:	0	0	0	1	0	2	0	1
1657:	2	1	0	0	0	2	0	2

1665: 0 0 0 0 0 2 3 0

Sample Title: CP-5025 02-05

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

2097: 0 0 0 1 0 1 3 1

Sample Title: CP-5025 02-05

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

2529: 0 0 0 0 1 0 0 0

Sample Title: CP-5025 02-05

Channel	1	2	3	4	5	6	7	8
2537:	0	0	0	0	0	0	0	0
2545:	0	0	0	0	1	0	0	0
2553:	0	0	0	1	0	0	0	0
2561:	0	0	0	1	0	0	0	0
2569:	0	0	0	0	0	1	0	1
2577:	0	0	1	1	0	0	2	0
2585:	0	0	0	0	1	0	2	0
2593:	0	0	0	0	0	0	0	0
2601:	2	0	0	1	0	1	0	0
2609:	0	0	0	2	3	13	5	7
2617:	4	1	0	0	0	0	0	0
2625:	0	0	0	0	0	0	0	1
2633:	0	0	0	0	0	0	0	0
2641:	1	1	0	0	0	0	1	0
2649:	0	1	1	0	0	0	0	1
2657:	0	0	0	1	0	0	1	0
2665:	0	1	0	0	0	1	0	0
2673:	0	0	0	2	0	0	0	0
2681:	1	0	0	0	0	0	0	1
2689:	0	0	0	0	0	0	0	0
2697:	0	0	0	0	0	0	0	0
2705:	0	0	0	0	0	1	0	1
2713:	0	0	0	0	0	1	0	0
2721:	1	0	0	0	0	1	0	0
2729:	1	0	0	0	0	0	0	0
2737:	0	0	0	0	0	0	0	0
2745:	0	0	0	1	0	0	0	0
2753:	0	0	1	0	0	0	1	0
2761:	0	0	0	0	0	0	0	0
2769:	0	1	1	0	0	1	0	0
2777:	1	0	0	0	1	0	0	1
2785:	0	0	0	0	1	0	1	0
2793:	1	0	0	0	0	1	1	0
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	0
2825:	1	0	0	0	0	1	1	0
2833:	0	0	1	0	0	0	0	0
2841:	0	0	0	0	0	0	0	0
2849:	0	1	0	1	0	0	0	0
2857:	0	0	0	0	0	0	0	0
2865:	1	0	0	0	0	0	0	0
2873:	0	0	0	0	0	0	0	0
2881:	0	0	0	0	0	0	0	1
2889:	0	0	0	1	0	0	0	0
2897:	0	0	0	0	0	0	0	0
2905:	0	0	0	0	0	1	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	0	0	0	0
2937:	0	1	0	0	1	0	0	0
2945:	0	1	0	0	0	0	0	0
2953:	0	0	0	0	0	0	0	0

2961: 0 0 0 0 0 0 0 1 0

Sample Title: CP-5025 02-05

Channel	1	2	3	4	5	6	7	8	9
2969:	0	0	0	0	0	0	0	1	1
2977:	0	0	0	1	0	0	0	0	0
2985:	0	0	0	0	0	0	0	0	0
2993:	0	0	1	0	0	0	0	0	0
3001:	0	0	0	1	0	1	0	0	0
3009:	0	0	0	0	0	0	0	0	0
3017:	0	0	0	0	0	0	1	1	1
3025:	1	0	0	0	0	0	0	0	0
3033:	0	1	1	0	0	0	0	0	0
3041:	0	0	0	0	1	1	0	0	0
3049:	0	0	0	0	0	0	0	0	0
3057:	0	0	0	1	0	0	1	0	0
3065:	0	0	0	1	0	0	0	0	0
3073:	0	0	0	0	1	0	0	0	0
3081:	0	0	0	0	0	0	0	0	0
3089:	0	0	0	0	0	0	0	0	1
3097:	0	1	0	0	0	0	0	0	0
3105:	0	0	0	0	0	0	1	0	0
3113:	0	0	0	0	1	0	0	0	0
3121:	0	0	0	0	0	1	0	0	0
3129:	1	1	0	0	0	0	0	0	0
3137:	0	0	0	0	1	0	0	0	0
3145:	0	0	0	0	0	0	0	0	0
3153:	0	0	1	0	0	0	0	0	0
3161:	0	0	0	1	1	1	0	0	0
3169:	1	0	0	1	0	1	0	0	0
3177:	0	0	0	0	0	1	0	0	0
3185:	0	0	0	1	1	1	0	1	1
3193:	0	0	0	1	0	1	0	0	0
3201:	0	0	0	0	0	0	0	1	1
3209:	0	0	0	0	0	0	0	1	1
3217:	0	0	0	1	0	0	0	0	0
3225:	0	0	0	0	0	0	1	1	1
3233:	0	0	0	0	0	0	0	0	0
3241:	0	0	0	0	1	0	0	0	0
3249:	1	0	0	0	0	0	0	0	0
3257:	0	0	0	0	0	0	0	0	0
3265:	0	1	0	0	0	0	0	0	0
3273:	2	0	0	0	0	0	0	1	1
3281:	0	0	1	0	0	0	0	0	0
3289:	0	0	0	0	0	0	0	0	0
3297:	0	0	0	0	1	0	0	0	0
3305:	0	0	0	0	0	0	0	0	0
3313:	0	0	1	0	0	0	0	0	0
3321:	1	0	0	0	1	1	0	1	1
3329:	0	0	0	0	0	0	0	0	0
3337:	0	0	0	0	0	1	0	0	0
3345:	0	0	0	0	0	0	0	0	0
3353:	0	0	1	0	0	0	0	0	0
3361:	0	0	1	0	0	0	0	0	0
3369:	0	0	0	0	0	0	0	1	1
3377:	0	1	0	1	1	0	0	0	0
3385:	0	0	1	0	0	0	0	0	0

3393: 0 0 0 0 0 0 0 0 1

Sample Title: CP-5025 02-05

Channel	1	2	3	4	5	6	7	8	9
3401:	0	1	0	0	0	0	0	0	0
3409:	0	0	0	0	0	0	0	0	0
3417:	0	0	0	0	0	0	0	0	1
3425:	0	0	0	0	1	0	0	0	0
3433:	1	0	0	0	0	0	1	1	1
3441:	0	0	0	0	0	0	0	1	1
3449:	0	0	0	0	0	0	1	0	0
3457:	0	0	0	0	0	0	1	0	0
3465:	0	0	0	0	0	0	1	0	0
3473:	0	0	0	0	0	0	1	0	0
3481:	0	0	1	0	0	0	0	0	0
3489:	0	0	0	0	0	0	0	0	0
3497:	2	0	0	0	1	0	0	0	0
3505:	0	1	0	0	0	0	0	0	0
3513:	1	0	0	0	0	0	0	0	0
3521:	0	0	0	0	0	0	0	0	0
3529:	0	0	0	1	0	0	0	0	0
3537:	0	0	0	0	0	0	1	0	0
3545:	0	0	0	0	0	0	1	0	0
3553:	0	0	0	0	0	0	0	0	0
3561:	0	0	0	0	0	0	0	0	0
3569:	0	0	0	0	0	0	0	0	0
3577:	0	2	0	0	0	0	0	0	0
3585:	0	0	0	0	0	0	0	0	0
3593:	0	0	1	0	0	0	0	0	0
3601:	1	2	0	0	0	0	1	0	0
3609:	0	0	0	0	0	0	0	0	0
3617:	0	1	0	0	0	1	0	0	0
3625:	0	0	1	0	0	0	0	0	0
3633:	1	0	0	0	0	0	0	0	2
3641:	0	0	0	0	0	0	0	0	0
3649:	0	0	0	0	1	0	0	0	0
3657:	0	0	0	0	0	0	0	0	0
3665:	0	0	0	1	1	0	0	0	0
3673:	0	0	0	0	0	0	0	0	0
3681:	0	1	0	0	0	0	0	0	0
3689:	0	0	0	0	0	1	0	0	0
3697:	0	0	0	0	0	0	0	0	0
3705:	0	0	0	0	1	0	0	0	0
3713:	0	0	0	0	0	0	0	0	0
3721:	0	0	0	0	0	0	0	0	0
3729:	0	0	0	0	0	0	0	0	0
3737:	0	0	0	0	1	0	0	0	1
3745:	0	1	0	0	0	0	0	0	0
3753:	0	0	1	0	0	0	0	0	0
3761:	0	0	0	0	0	0	0	0	0
3769:	0	0	0	0	0	0	0	0	0
3777:	0	0	0	1	0	0	0	0	0
3785:	0	0	0	0	0	2	0	0	0
3793:	0	0	0	0	0	0	0	0	0
3801:	0	0	0	0	0	0	0	0	0
3809:	0	0	0	0	0	0	0	0	0
3817:	0	0	0	0	0	0	0	0	1

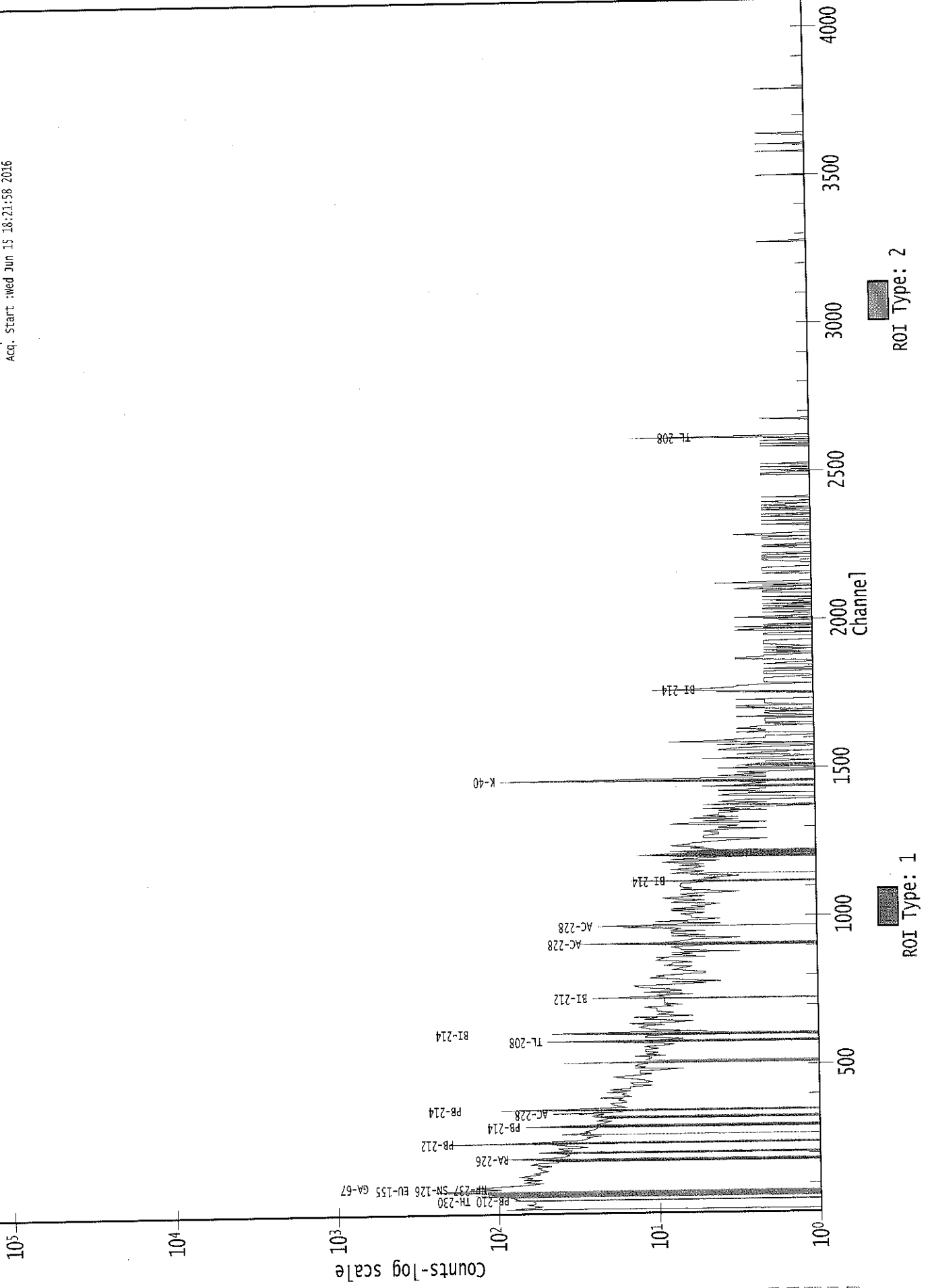
3825: 1 0 0 0 0 0 0 0 0

Sample Title: CP-5025 02-05

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

0000038953.CNF

Live Time :3600.000 sec
Real Time :3601.360 sec
Start : 1: 1.8(keV)
Stop : 4096.4093.9(keV)
Acq. Start :Wed Jun 15 18:21:58 2016



Analysis Report for 1606040-14
CP-5025 05-10

6/16

GAMMA SPECTRUM ANALYSIS

Sample Identification : 1606040-14
Sample Description : CP-5025 05-10
Sample Type : SOIL

Sample Size : 3.763E+02 grams
Facility : Countroom

Sample Taken On : 6/2/2016 1:13:25PM
Acquisition Started : 6/16/2016 6:06:53AM

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 : 38966

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
6/16/16

Analysis Report for 1606040-14
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PEAK LOCATE REPORT

Peak Locate Performed on : 6/16/2016 7:06:57AM
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	12.83	12.95	0.0000	0.00
2	46.27	46.38	0.0000	0.00
3	62.86	62.95	0.0000	0.00
4	76.02	76.10	0.0000	0.00
5	90.02	90.10	0.0000	0.00
6	92.97	93.05	0.0000	0.00
7	185.91	185.94	0.0000	0.00
8	209.04	209.05	0.0000	0.00
9	239.14	239.13	0.0000	0.00
10	270.06	270.04	0.0000	0.00
11	276.90	276.88	0.0000	0.00
12	295.17	295.14	0.0000	0.00
13	300.01	299.97	0.0000	0.00
14	338.06	338.01	0.0000	0.00
15	351.85	351.78	0.0000	0.00
16	395.04	394.95	0.0000	0.00
17	462.46	462.34	0.0000	0.00
18	511.02	510.88	0.0000	0.00
19	563.31	563.14	0.0000	0.00
20	583.12	582.94	0.0000	0.00
21	609.35	609.15	0.0000	0.00
22	704.91	704.68	0.0000	0.00
23	727.51	727.27	0.0000	0.00
24	786.61	786.33	0.0000	0.00
25	795.39	795.12	0.0000	0.00
26	904.15	903.83	0.0000	0.00
27	911.11	910.79	0.0000	0.00
28	921.91	921.58	0.0000	0.00
29	929.74	929.41	0.0000	0.00
30	969.14	968.79	0.0000	0.00
31	978.49	978.14	0.0000	0.00
32	1120.08	1119.67	0.0000	0.00
33	1155.21	1154.79	0.0000	0.00
34	1166.45	1166.03	0.0000	0.00
35	1183.39	1182.96	0.0000	0.00
36	1238.68	1238.23	0.0000	0.00
37	1333.66	1333.18	0.0000	0.00
38	1377.72	1377.22	0.0000	0.00
39	1408.39	1407.89	0.0000	0.00
40	1460.82	1460.30	0.0000	0.00
41	1508.19	1507.65	0.0000	0.00
42	1518.84	1518.30	0.0000	0.00

Analysis Report for 1606040-14
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<i>Peak No.</i>	<i>Energy (keV)</i>	<i>Centroid Channel</i>	<i>Centroid Uncertainty</i>	<i>Peak Significance</i>
43	1590.26	1589.70	0.0000	0.00
44	1622.82	1622.25	0.0000	0.00
45	1683.28	1682.70	0.0000	0.00
46	1716.96	1716.36	0.0000	0.00
47	1729.53	1728.93	0.0000	0.00
48	1737.71	1737.11	0.0000	0.00
49	1764.59	1763.98	0.0000	0.00
50	1846.71	1846.09	0.0000	0.00
51	1873.08	1872.44	0.0000	0.00
52	1926.05	1925.41	0.0000	0.00
53	2103.44	2102.76	0.0000	0.00
54	2614.13	2613.38	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1606040-14
CP-5025 05-10

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 6/16/2016 7:06:57AM

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	12.83	12 -	15	12.95	1.92E+03	120.85	1.47E+03	1.03
2	46.27	43 -	49	46.38	1.26E+02	68.49	7.64E+02	1.71
3	62.86	59 -	67	62.95	1.20E+02	103.32	1.57E+03	1.60
4	76.02	72 -	83	76.10	8.62E+02	147.59	2.29E+03	3.00
M m 5	90.02	89 -	96	90.10	1.21E+02	18.24	1.82E+02	1.11
6	92.97	89 -	96	93.05	1.89E+02	49.67	4.55E+02	1.12
7	185.91	182 -	189	185.94	1.58E+02	67.02	6.41E+02	1.33
8	209.04	206 -	212	209.05	4.95E+01	56.56	5.45E+02	1.16
9	239.14	234 -	244	239.13	9.73E+02	91.06	5.83E+02	1.84
M m 10	270.06	267 -	281	270.04	7.09E+01	32.62	1.85E+02	1.46
11	276.90	267 -	281	276.88	2.74E+01	29.53	1.95E+02	1.47
M m 12	295.17	292 -	306	295.14	2.41E+02	38.00	1.60E+02	1.50
13	300.01	292 -	306	299.97	6.95E+01	33.43	1.84E+02	1.50
14	338.06	335 -	341	338.01	1.66E+02	44.28	2.38E+02	1.35
15	351.85	348 -	355	351.78	3.59E+02	54.74	2.59E+02	1.29
16	395.04	391 -	399	394.95	4.23E+01	39.90	2.15E+02	4.68
17	462.46	459 -	465	462.34	5.30E+01	30.15	1.28E+02	2.12
18	511.02	506 -	515	510.88	1.34E+02	45.16	2.13E+02	1.71
19	563.31	558 -	567	563.14	2.96E+01	33.48	1.39E+02	1.51
20	583.12	579 -	586	582.94	2.50E+02	42.90	1.40E+02	1.40
21	609.35	605 -	612	609.15	2.80E+02	45.34	1.56E+02	1.37
22	704.91	699 -	711	704.68	4.91E+01	38.31	1.50E+02	7.06
23	727.51	723 -	734	727.27	5.97E+01	37.42	1.49E+02	2.63
24	786.61	783 -	790	786.33	2.71E+01	21.54	5.79E+01	3.52
25	795.39	791 -	799	795.12	3.42E+01	25.78	8.17E+01	1.42
M m 26	904.15	900 -	915	903.83	1.99E+01	20.95	5.29E+01	2.85
27	911.11	900 -	915	910.79	1.72E+02	28.44	2.72E+01	1.76
28	921.91	916 -	926	921.58	2.34E+01	21.55	4.91E+01	5.20
29	929.74	927 -	931	929.41	1.00E+01	10.27	1.40E+01	1.61
M m 30	969.14	965 -	981	968.79	9.86E+01	30.05	1.31E+02	1.84
31	978.49	965 -	981	978.14	2.23E+01	25.25	4.35E+01	2.42
32	1120.08	1116 -	1124	1119.67	5.53E+01	27.43	8.35E+01	1.94
33	1155.21	1151 -	1159	1154.79	3.52E+01	23.40	6.15E+01	1.78
34	1166.45	1161 -	1171	1166.03	2.91E+01	29.33	9.98E+01	8.33
35	1183.39	1179 -	1186	1182.96	2.39E+01	21.35	6.01E+01	3.88
36	1238.68	1235 -	1242	1238.23	2.06E+01	24.58	8.48E+01	1.26
37	1333.66	1329 -	1338	1333.18	1.53E+01	15.39	2.54E+01	2.63
38	1377.72	1372 -	1382	1377.22	3.92E+01	19.06	2.77E+01	3.26
39	1408.39	1404 -	1412	1407.89	1.96E+01	16.79	3.08E+01	3.76
40	1460.82	1457 -	1464	1460.30	5.00E+02	46.04	1.93E+01	2.09

Analysis Report for 1606040-14
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Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
41	1508.19	1503 -	1510	1507.65	9.24E+00	11.49	1.55E+01	1.30
42	1518.84	1516 -	1520	1518.30	1.00E+01	6.32	0.00E+00	1.90
43	1590.26	1584 -	1594	1589.70	3.33E+01	13.20	5.47E+00	6.64
44	1622.82	1616 -	1628	1622.25	2.21E+01	14.02	1.17E+01	8.96
45	1683.28	1679 -	1686	1682.70	1.10E+01	9.59	8.00E+00	3.13
46	1716.96	1713 -	1720	1716.36	1.10E+01	6.63	0.00E+00	4.72
47	1729.53	1725 -	1733	1728.93	1.31E+01	8.96	3.73E+00	4.42
48	1737.71	1735 -	1739	1737.11	4.58E+00	5.50	2.83E+00	1.84
49	1764.59	1760 -	1767	1763.98	3.62E+01	13.86	7.65E+00	2.94
50	1846.71	1843 -	1849	1846.09	7.50E+00	6.95	3.00E+00	1.43
51	1873.08	1871 -	1875	1872.44	5.29E+00	5.85	3.43E+00	1.35
52	1926.05	1922 -	1928	1925.41	9.23E+00	7.50	3.55E+00	4.48
53	2103.44	2098 -	2107	2102.76	2.10E+01	9.17	0.00E+00	3.53
54	2614.13	2609 -	2617	2613.38	7.80E+01	17.66	0.00E+00	1.96

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 7:06:57AM

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	12.83	12 -	15	1.92E+03	120.85	1.47E+03	7.93E+01
2	46.27	43 -	49	1.26E+02	68.49	7.64E+02	5.32E+01
3	62.86	59 -	67	1.20E+02	103.32	1.57E+03	8.30E+01
4	76.02	72 -	83	8.62E+02	147.59	2.29E+03	1.11E+02
M	5	89 -	96	1.21E+02	18.24	1.82E+02	2.22E+01
m	6	89 -	96	1.89E+02	49.67	4.55E+02	3.51E+01
7	185.91	182 -	189	1.58E+02	67.02	6.41E+02	5.11E+01
8	209.04	206 -	212	4.95E+01	56.56	5.45E+02	4.50E+01
9	239.14	234 -	244	9.73E+02	91.06	5.83E+02	5.45E+01
M	10	267 -	281	7.09E+01	32.62	1.85E+02	2.24E+01
m	11	267 -	281	2.74E+01	29.53	1.95E+02	2.29E+01
M	12	292 -	306	2.41E+02	38.00	1.60E+02	2.08E+01
m	13	292 -	306	6.95E+01	33.43	1.84E+02	2.23E+01
14	338.06	335 -	341	1.66E+02	44.28	2.38E+02	2.96E+01

Analysis Report for 1606040-14
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Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level	
15	351.85	348 -	355	3.59E+02	54.74	2.59E+02	3.24E+01	
16	395.04	391 -	399	4.23E+01	39.90	2.15E+02	3.10E+01	
17	462.46	459 -	465	5.30E+01	30.15	1.28E+02	2.17E+01	
18	511.02	506 -	515	1.34E+02	45.16	2.13E+02	3.18E+01	
19	563.31	558 -	567	2.96E+01	33.48	1.39E+02	2.60E+01	
20	583.12	579 -	586	2.50E+02	42.90	1.40E+02	2.38E+01	
21	609.35	605 -	612	2.80E+02	45.34	1.56E+02	2.51E+01	
22	704.91	699 -	711	4.91E+01	38.31	1.50E+02	2.93E+01	
23	727.51	723 -	734	5.97E+01	37.42	1.49E+02	2.80E+01	
24	786.61	783 -	790	2.71E+01	21.54	5.79E+01	1.55E+01	
25	795.39	791 -	799	3.42E+01	25.78	8.17E+01	1.89E+01	
M	26	904.15	900 -	915	1.99E+01	20.95	5.29E+01	1.20E+01
m	27	911.11	900 -	915	1.72E+02	28.44	2.72E+01	8.58E+00
	28	921.91	916 -	926	2.34E+01	21.55	4.91E+01	1.58E+01
	29	929.74	927 -	931	1.00E+01	10.27	1.40E+01	6.65E+00
M	30	969.14	965 -	981	9.86E+01	30.05	1.31E+02	1.88E+01
m	31	978.49	965 -	981	2.23E+01	25.25	4.35E+01	1.08E+01
	32	1120.08	1116 -	1124	5.53E+01	27.43	8.35E+01	1.90E+01
	33	1155.21	1151 -	1159	3.52E+01	23.40	6.15E+01	1.66E+01
	34	1166.45	1161 -	1171	2.91E+01	29.33	9.98E+01	2.24E+01
	35	1183.39	1179 -	1186	2.39E+01	21.35	6.01E+01	1.56E+01
	36	1238.68	1235 -	1242	2.06E+01	24.58	8.48E+01	1.88E+01
	37	1333.66	1329 -	1338	1.53E+01	15.39	2.54E+01	1.09E+01
	38	1377.72	1372 -	1382	3.92E+01	19.06	2.77E+01	1.18E+01
	39	1408.39	1404 -	1412	1.96E+01	16.79	3.08E+01	1.17E+01
	40	1460.82	1457 -	1464	5.00E+02	46.04	1.93E+01	8.95E+00
	41	1508.19	1503 -	1510	9.24E+00	11.49	1.55E+01	8.01E+00
	42	1518.84	1516 -	1520	1.00E+01	6.32	0.00E+00	0.00E+00
	43	1590.26	1584 -	1594	3.33E+01	13.20	5.47E+00	5.28E+00
	44	1622.82	1616 -	1628	2.21E+01	14.02	1.17E+01	8.54E+00
	45	1683.28	1679 -	1686	1.10E+01	9.59	8.00E+00	5.70E+00
	46	1716.96	1713 -	1720	1.10E+01	6.63	0.00E+00	0.00E+00
	47	1729.53	1725 -	1733	1.31E+01	8.96	3.73E+00	4.33E+00
	48	1737.71	1735 -	1739	4.58E+00	5.50	2.83E+00	2.84E+00
	49	1764.59	1760 -	1767	3.62E+01	13.86	7.65E+00	5.65E+00
	50	1846.71	1843 -	1849	7.50E+00	6.95	3.00E+00	3.51E+00
	51	1873.08	1871 -	1875	5.29E+00	5.85	3.43E+00	2.98E+00
	52	1926.05	1922 -	1928	9.23E+00	7.50	3.55E+00	3.62E+00
	53	2103.44	2098 -	2107	2.10E+01	9.17	0.00E+00	0.00E+00
	54	2614.13	2609 -	2617	7.80E+01	17.66	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 1606040-14
CP-5025 05-10

PEAK WITH NID REPORT

Peak Analysis Performed on : 6/16/2016 7:06:57AM

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	12.83	12 -	15	12.95	1.92E+03	120.85	1.47E+03	.....
2	46.27	43 -	49	46.38	1.26E+02	68.49	7.64E+02	PB-210
3	62.86	59 -	67	62.95	1.20E+02	103.32	1.57E+03	TH-230 TH-234
4	76.02	72 -	83	76.10	8.62E+02	147.59	2.29E+03	.....
M	5	89 -	96	90.10	1.21E+02	18.24	1.82E+02	.....
m	6	89 -	96	93.05	1.89E+02	49.67	4.55E+02	GA-67
7	185.91	182 -	189	185.94	1.58E+02	67.02	6.41E+02	RA-226
8	209.04	206 -	212	209.05	4.95E+01	56.56	5.45E+02	GA-67 CM-243
9	239.14	234 -	244	239.13	9.73E+02	91.06	5.83E+02	PB-212
M	10	267 -	281	270.04	7.09E+01	32.62	1.85E+02	.....
m	11	267 -	281	276.88	2.74E+01	29.53	1.95E+02	CM-243 NP-239
M	12	292 -	306	295.14	2.41E+02	38.00	1.60E+02	PB-214
m	13	292 -	306	299.97	6.95E+01	33.43	1.84E+02	BI-210M PB-212 GA-67
14	338.06	335 -	341	338.01	1.66E+02	44.28	2.38E+02	AC-228
15	351.85	348 -	355	351.78	3.59E+02	54.74	2.59E+02	PB-214
16	395.04	391 -	399	394.95	4.23E+01	39.90	2.15E+02	.....
17	462.46	459 -	465	462.34	5.30E+01	30.15	1.28E+02	SB-125
18	511.02	506 -	515	510.88	1.34E+02	45.16	2.13E+02	.....
19	563.31	558 -	567	563.14	2.96E+01	33.48	1.39E+02	CS-134
20	583.12	579 -	586	582.94	2.50E+02	42.90	1.40E+02	TL-208
21	609.35	605 -	612	609.15	2.80E+02	45.34	1.56E+02	BI-214
22	704.91	699 -	711	704.68	4.91E+01	38.31	1.50E+02	.....
23	727.51	723 -	734	727.27	5.97E+01	37.42	1.49E+02	BI-212
24	786.61	783 -	790	786.33	2.71E+01	21.54	5.79E+01	.....
25	795.39	791 -	799	795.12	3.42E+01	25.78	8.17E+01	CS-134
M	26	900 -	915	903.83	1.99E+01	20.95	5.29E+01	.....
m	27	900 -	915	910.79	1.72E+02	28.44	2.72E+01	AC-228
28	921.91	916 -	926	921.58	2.34E+01	21.55	4.91E+01	.....
29	929.74	927 -	931	929.41	1.00E+01	10.27	1.40E+01	.....
M	30	965 -	981	968.79	9.86E+01	30.05	1.31E+02	AC-228
m	31	965 -	981	978.14	2.23E+01	25.25	4.35E+01	.....
32	1120.08	1116 -	1124	1119.67	5.53E+01	27.43	8.35E+01	BI-214 SC-46
33	1155.21	1151 -	1159	1154.79	3.52E+01	23.40	6.15E+01	.....
34	1166.45	1161 -	1171	1166.03	2.91E+01	29.33	9.98E+01	.....
35	1183.39	1179 -	1186	1182.96	2.39E+01	21.35	6.01E+01

Analysis Report for 1606040-14
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Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
36	1238.68	1235 -	1242	1238.23	2.06E+01	24.58	8.48E+01	CO-56
37	1333.66	1329 -	1338	1333.18	1.53E+01	15.39	2.54E+01	.....
38	1377.72	1372 -	1382	1377.22	3.92E+01	19.06	2.77E+01	.....
39	1408.39	1404 -	1412	1407.89	1.96E+01	16.79	3.08E+01	EU-152
40	1460.82	1457 -	1464	1460.30	5.00E+02	46.04	1.93E+01	K-40
41	1508.19	1503 -	1510	1507.65	9.24E+00	11.49	1.55E+01	.....
42	1518.84	1516 -	1520	1518.30	1.00E+01	6.32	0.00E+00	.....
43	1590.26	1584 -	1594	1589.70	3.33E+01	13.20	5.47E+00	.....
44	1622.82	1616 -	1628	1622.25	2.21E+01	14.02	1.17E+01	.....
45	1683.28	1679 -	1686	1682.70	1.10E+01	9.59	8.00E+00	.....
46	1716.96	1713 -	1720	1716.36	1.10E+01	6.63	0.00E+00	.....
47	1729.53	1725 -	1733	1728.93	1.31E+01	8.96	3.73E+00	.....
48	1737.71	1735 -	1739	1737.11	4.58E+00	5.50	2.83E+00	.....
49	1764.59	1760 -	1767	1763.98	3.62E+01	13.86	7.65E+00	BI-214
50	1846.71	1843 -	1849	1846.09	7.50E+00	6.95	3.00E+00	.....
51	1873.08	1871 -	1875	1872.44	5.29E+00	5.85	3.43E+00	.....
52	1926.05	1922 -	1928	1925.41	9.23E+00	7.50	3.55E+00	.....
53	2103.44	2098 -	2107	2102.76	2.10E+01	9.17	0.00E+00	.....
54	2614.13	2609 -	2617	2613.38	7.80E+01	17.66	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 7:06:57AM

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty	
	1	12.83	1.92E+03	120.85	1.07E-05	1.66E-03
	2	46.27	1.26E+02	68.49	1.69E-02	1.66E-03
	3	62.86	1.20E+02	103.32	2.36E-02	1.73E-03
	4	76.02	8.62E+02	147.59	2.56E-02	2.02E-03
M	5	90.02	1.21E+02	18.24	2.60E-02	2.27E-03
m	6	92.97	1.89E+02	49.67	2.60E-02	2.27E-03
	7	185.91	1.58E+02	67.02	1.99E-02	2.40E-03
	8	209.04	4.95E+01	56.56	1.85E-02	2.36E-03
	9	239.14	9.73E+02	91.06	1.70E-02	2.31E-03
M	10	270.06	7.09E+01	32.62	1.57E-02	2.26E-03
m	11	276.90	2.74E+01	29.53	1.54E-02	2.25E-03

Analysis Report for 1606040-14
CP-5025 05-10

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
M	12	295.17	2.41E+02	38.00	1.47E-02	2.21E-03
m	13	300.01	6.95E+01	33.43	1.46E-02	2.21E-03
	14	338.06	1.66E+02	44.28	1.34E-02	2.14E-03
	15	351.85	3.59E+02	54.74	1.30E-02	2.12E-03
	16	395.04	4.23E+01	39.90	1.19E-02	2.03E-03
	17	462.46	5.30E+01	30.15	1.06E-02	1.68E-03
	18	511.02	1.34E+02	45.16	9.77E-03	1.43E-03
	19	563.31	2.96E+01	33.48	9.04E-03	1.16E-03
	20	583.12	2.50E+02	42.90	8.79E-03	1.06E-03
	21	609.35	2.80E+02	45.34	8.48E-03	9.22E-04
	22	704.91	4.91E+01	38.31	7.53E-03	7.07E-04
	23	727.51	5.97E+01	37.42	7.34E-03	7.36E-04
	24	786.61	2.71E+01	21.54	6.88E-03	8.12E-04
	25	795.39	3.42E+01	25.78	6.82E-03	8.24E-04
M	26	904.15	1.99E+01	20.95	6.13E-03	9.43E-04
m	27	911.11	1.72E+02	28.44	6.09E-03	9.29E-04
	28	921.91	2.34E+01	21.55	6.04E-03	9.07E-04
	29	929.74	1.00E+01	10.27	5.99E-03	8.91E-04
M	30	969.14	9.86E+01	30.05	5.79E-03	8.12E-04
m	31	978.49	2.23E+01	25.25	5.75E-03	7.93E-04
	32	1120.08	5.53E+01	27.43	5.15E-03	5.06E-04
	33	1155.21	3.52E+01	23.40	5.03E-03	4.35E-04
	34	1166.45	2.91E+01	29.33	4.99E-03	4.12E-04
	35	1183.39	2.39E+01	21.35	4.94E-03	3.96E-04
	36	1238.68	2.06E+01	24.58	4.77E-03	3.84E-04
	37	1333.66	1.53E+01	15.39	4.51E-03	3.63E-04
	38	1377.72	3.92E+01	19.06	4.41E-03	3.66E-04
	39	1408.39	1.96E+01	16.79	4.34E-03	3.68E-04
	40	1460.82	5.00E+02	46.04	4.23E-03	3.72E-04
	41	1508.19	9.24E+00	11.49	4.14E-03	3.76E-04
	42	1518.84	1.00E+01	6.32	4.12E-03	3.77E-04
	43	1590.26	3.33E+01	13.20	4.00E-03	3.82E-04
	44	1622.82	2.21E+01	14.02	3.96E-03	3.85E-04
	45	1683.28	1.10E+01	9.59	3.87E-03	3.89E-04
	46	1716.96	1.10E+01	6.63	3.83E-03	3.92E-04
	47	1729.53	1.31E+01	8.96	3.81E-03	3.93E-04
	48	1737.71	4.58E+00	5.50	3.80E-03	3.93E-04
	49	1764.59	3.62E+01	13.86	3.77E-03	3.96E-04
	50	1846.71	7.50E+00	6.95	3.69E-03	4.01E-04
	51	1873.08	5.29E+00	5.85	3.66E-03	4.01E-04
	52	1926.05	9.23E+00	7.50	3.62E-03	4.01E-04
	53	2103.44	2.10E+01	9.17	3.50E-03	4.01E-04
	54	2614.13	7.80E+01	17.66	3.40E-03	4.01E-04

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

Analysis Report for 1606040-14

CP-5025 05-10

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 6/16/2016 7:06:57AM

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	12.83	1.92E+03	120.85	1.02E+03	3.77E+01	9.03E+02	1.27E+02
2	46.27	1.26E+02	68.49	2.17E+01	5.74E+00	1.04E+02	6.87E+01
3	62.86	1.20E+02	103.32	2.91E+01	8.34E+00	9.07E+01	1.04E+02
4	76.02	8.62E+02	147.59			8.62E+02	1.48E+02
M	5	1.21E+02	18.24			1.21E+02	1.82E+01
m	6	1.89E+02	49.67	4.47E+01	7.30E+00	1.44E+02	5.02E+01
	7	1.58E+02	67.02	3.13E+01	6.95E+00	1.27E+02	6.74E+01
	8	4.95E+01	56.56			4.95E+01	5.66E+01
	9	9.73E+02	91.06	1.19E+01	7.10E+00	9.61E+02	9.13E+01
M	10	7.09E+01	32.62			7.09E+01	3.26E+01
m	11	2.74E+01	29.53			2.74E+01	2.95E+01
M	12	2.41E+02	38.00			2.41E+02	3.80E+01
m	13	6.95E+01	33.43			6.95E+01	3.34E+01
	14	1.66E+02	44.28			1.66E+02	4.43E+01
	15	3.59E+02	54.74	9.12E+00	4.79E+00	3.50E+02	5.49E+01
	16	4.23E+01	39.90			4.23E+01	3.99E+01
	17	5.30E+01	30.15			5.30E+01	3.01E+01
	18	1.34E+02	45.16	6.97E+01	5.00E+00	6.48E+01	4.54E+01
	19	2.96E+01	33.48			2.96E+01	3.35E+01
	20	2.50E+02	42.90	3.98E+00	3.57E+00	2.46E+02	4.30E+01
	21	2.80E+02	45.34	8.66E+00	3.90E+00	2.72E+02	4.55E+01
	22	4.91E+01	38.31			4.91E+01	3.83E+01
	23	5.97E+01	37.42			5.97E+01	3.74E+01
	24	2.71E+01	21.54			2.71E+01	2.15E+01
	25	3.42E+01	25.78			3.42E+01	2.58E+01
M	26	1.99E+01	20.95			1.99E+01	2.09E+01
m	27	1.72E+02	28.44	2.01E+00	2.72E+00	1.70E+02	2.86E+01
	28	2.34E+01	21.55			2.34E+01	2.15E+01
	29	1.00E+01	10.27			1.00E+01	1.03E+01
M	30	9.86E+01	30.05			9.86E+01	3.00E+01
m	31	2.23E+01	25.25			2.23E+01	2.53E+01
	32	5.53E+01	27.43			5.53E+01	2.74E+01
	33	3.52E+01	23.40			3.52E+01	2.34E+01
	34	2.91E+01	29.33			2.91E+01	2.93E+01
	35	2.39E+01	21.35			2.39E+01	2.14E+01
	36	2.06E+01	24.58			2.06E+01	2.46E+01
	37	1.53E+01	15.39	1.27E+00	2.37E+00	1.40E+01	1.56E+01
	38	3.92E+01	19.06			3.92E+01	1.91E+01
	39	1.96E+01	16.79			1.96E+01	1.68E+01
	40	5.00E+02	46.04			5.00E+02	4.60E+01
	41	9.24E+00	11.49			9.24E+00	1.15E+01
	42	1.00E+01	6.32			1.00E+01	6.32E+00
	43	3.33E+01	13.20			3.33E+01	1.32E+01
	44	2.21E+01	14.02			2.21E+01	1.40E+01

Analysis Report for 1606040-14

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Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
45	1683.28	1.10E+01	9.59			1.10E+01	9.59E+00
46	1716.96	1.10E+01	6.63			1.10E+01	6.63E+00
47	1729.53	1.31E+01	8.96			1.31E+01	8.96E+00
48	1737.71	4.58E+00	5.50			4.58E+00	5.50E+00
49	1764.59	3.62E+01	13.86			3.62E+01	1.39E+01
50	1846.71	7.50E+00	6.95			7.50E+00	6.95E+00
51	1873.08	5.29E+00	5.85			5.29E+00	5.85E+00
52	1926.05	9.23E+00	7.50			9.23E+00	7.50E+00
53	2103.44	2.10E+01	9.17			2.10E+01	9.17E+00
54	2614.13	7.80E+01	17.66			7.80E+01	1.77E+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 7:06:57AM
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	12.83	1.92E+03	120.85	1.02E+03	3.77E+01	9.03E+02	1.27E+02
	2	46.27	1.26E+02	68.49	2.17E+01	5.74E+00	1.04E+02	6.87E+01
	3	62.86	1.20E+02	103.32	2.91E+01	8.34E+00	9.07E+01	1.04E+02
	4	76.02	8.62E+02	147.59			8.62E+02	1.48E+02
M	5	90.02	1.21E+02	18.24			1.21E+02	1.82E+01
m	6	92.97	1.89E+02	49.67	4.47E+01	7.30E+00	1.44E+02	5.02E+01
	7	185.91	1.58E+02	67.02	3.13E+01	6.95E+00	1.27E+02	6.74E+01
	8	209.04	4.95E+01	56.56			4.95E+01	5.66E+01
	9	239.14	9.73E+02	91.06	1.19E+01	7.10E+00	9.61E+02	9.13E+01
M	10	270.06	7.09E+01	32.62			7.09E+01	3.26E+01
m	11	276.90	2.74E+01	29.53			2.74E+01	2.95E+01
M	12	295.17	2.41E+02	38.00			2.41E+02	3.80E+01
m	13	300.01	6.95E+01	33.43			6.95E+01	3.34E+01
	14	338.06	1.66E+02	44.28			1.66E+02	4.43E+01
	15	351.85	3.59E+02	54.74	9.12E+00	4.79E+00	3.50E+02	5.49E+01
	16	395.04	4.23E+01	39.90			4.23E+01	3.99E+01
	17	462.46	5.30E+01	30.15			5.30E+01	3.01E+01
	18	511.02	1.34E+02	45.16	6.97E+01	5.00E+00	6.48E+01	4.54E+01

Analysis Report for 1606040-14

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Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
19	563.31	2.96E+01	33.48			2.96E+01	3.35E+01
20	583.12	2.50E+02	42.90	3.98E+00	3.57E+00	2.46E+02	4.30E+01
21	609.35	2.80E+02	45.34	8.66E+00	3.90E+00	2.72E+02	4.55E+01
22	704.91	4.91E+01	38.31			4.91E+01	3.83E+01
23	727.51	5.97E+01	37.42			5.97E+01	3.74E+01
24	786.61	2.71E+01	21.54			2.71E+01	2.15E+01
25	795.39	3.42E+01	25.78			3.42E+01	2.58E+01
M 26	904.15	1.99E+01	20.95			1.99E+01	2.09E+01
m 27	911.11	1.72E+02	28.44	2.01E+00	2.72E+00	1.70E+02	2.86E+01
28	921.91	2.34E+01	21.55			2.34E+01	2.15E+01
29	929.74	1.00E+01	10.27			1.00E+01	1.03E+01
M 30	969.14	9.86E+01	30.05			9.86E+01	3.00E+01
m 31	978.49	2.23E+01	25.25			2.23E+01	2.53E+01
32	1120.08	5.53E+01	27.43			5.53E+01	2.74E+01
33	1155.21	3.52E+01	23.40			3.52E+01	2.34E+01
34	1166.45	2.91E+01	29.33			2.91E+01	2.93E+01
35	1183.39	2.39E+01	21.35			2.39E+01	2.14E+01
36	1238.68	2.06E+01	24.58			2.06E+01	2.46E+01
37	1333.66	1.53E+01	15.39	1.27E+00	2.37E+00	1.40E+01	1.56E+01
38	1377.72	3.92E+01	19.06			3.92E+01	1.91E+01
39	1408.39	1.96E+01	16.79			1.96E+01	1.68E+01
40	1460.82	5.00E+02	46.04			5.00E+02	4.60E+01
41	1508.19	9.24E+00	11.49			9.24E+00	1.15E+01
42	1518.84	1.00E+01	6.32			1.00E+01	6.32E+00
43	1590.26	3.33E+01	13.20			3.33E+01	1.32E+01
44	1622.82	2.21E+01	14.02			2.21E+01	1.40E+01
45	1683.28	1.10E+01	9.59			1.10E+01	9.59E+00
46	1716.96	1.10E+01	6.63			1.10E+01	6.63E+00
47	1729.53	1.31E+01	8.96			1.31E+01	8.96E+00
48	1737.71	4.58E+00	5.50			4.58E+00	5.50E+00
49	1764.59	3.62E+01	13.86			3.62E+01	1.39E+01
50	1846.71	7.50E+00	6.95			7.50E+00	6.95E+00
51	1873.08	5.29E+00	5.85			5.29E+00	5.85E+00
52	1926.05	9.23E+00	7.50			9.23E+00	7.50E+00
53	2103.44	2.10E+01	9.17			2.10E+01	9.17E+00
54	2614.13	7.80E+01	17.66			7.80E+01	1.77E+01

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

NUCLIDE IDENTIFICATION REPORT

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

IDENTIFIED NUCLIDES

Analysis Report for 1606040-14
CP-5025 05-10

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	1.000	1460.81 *	10.67	2.21E+01	2.85E+00
GA-67	0.902	93.31 *	35.70	5.74E+00	1.23E+01
		208.95 *	2.24	4.40E+01	9.34E+01
		300.22 *	16.00	1.10E+01	2.39E+01
TL-208	0.869	583.14 *	30.22	1.85E+00	3.92E-01
		860.37	4.48		
		2614.66 *	35.85	1.28E+00	3.26E-01
PB-210	0.992	46.50 *	4.25	2.90E+00	1.93E+00
BI-212	0.751	727.17 *	11.80	1.37E+00	8.73E-01
		1620.62	2.75		
PB-212	0.963	238.63 *	44.60	2.53E+00	4.19E-01
		300.09 *	3.41	2.80E+00	1.41E+00
BI-214	0.928	609.31 *	46.30	1.38E+00	2.75E-01
		1120.29 *	15.10	1.42E+00	7.17E-01
		1764.49 *	15.80	1.21E+00	4.81E-01
		2204.22	4.98		
PB-214	0.999	295.21 *	19.19	1.70E+00	3.71E-01
		351.92 *	37.19	1.45E+00	3.28E-01
RA-226	0.986	186.21 *	3.28	3.88E+00	7.41E+00
AC-228	0.998	338.32 *	11.40	2.17E+00	6.77E-01
		911.07 *	27.70	2.00E+00	4.55E-01
		969.11 *	16.60	2.05E+00	6.86E-01
TH-234	0.970	63.29 *	3.80	2.02E+00	2.31E+00
CM-243	0.326	209.75 *	3.29	1.62E+00	1.86E+00
		228.14	10.60		
		277.60 *	14.00	2.54E-01	2.76E-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 7:06:57AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
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Analysis Report for 1606040-14
CP-5025 05-10

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
1	12.83	2.50863E-01	7.01		
4	76.02	2.39444E-01	8.56		
M 5	90.02	3.36510E-02	7.53		
M 10	270.06	1.96821E-02	23.02		
16	395.04	1.17546E-02	47.15	Sum	
17	462.46	1.47198E-02	28.45	Sum	
18	511.02	1.80001E-02	35.05		
19	563.31	8.21970E-03	56.57	Tol.	CS-134
22	704.91	1.36302E-02	39.04		
24	786.61	7.51984E-03	39.78		
25	795.39	9.48889E-03	37.73	Sum	
M 26	904.15	5.53152E-03	52.59	Sum	
28	921.91	6.50752E-03	45.99	Sum	
29	929.74	2.77778E-03	51.36		
m 31	978.49	6.18551E-03	56.70		
33	1155.21	9.78535E-03	33.21	Sum	
34	1166.45	8.08017E-03	50.42	Sum	
35	1183.39	6.64866E-03	44.61	Sum	
36	1238.68	5.71869E-03	59.69		
37	1333.66	3.89460E-03	55.55		
38	1377.72	1.08753E-02	24.34		
39	1408.39	5.44048E-03	42.85	Tol.	EU-152
41	1508.19	2.56536E-03	62.20		
42	1518.84	2.77778E-03	31.62		
43	1590.26	9.23997E-03	19.84		
44	1622.82	6.15079E-03	31.65		
45	1683.28	3.05556E-03	43.60		
46	1716.96	3.05556E-03	30.15		
47	1729.53	3.64815E-03	34.10	Sum	
48	1737.71	1.27315E-03	60.00	Sum	
50	1846.71	2.08333E-03	46.31	Sum	
51	1873.08	1.46825E-03	55.36		
52	1926.05	2.56313E-03	40.64		
53	2103.44	5.83333E-03	21.82	S-Esc	

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 1606040-14
CP-5025 05-10

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	1.00	1460.81 *		10.67	2.21E+01	2.85E+00
GA-67	0.90	93.31 *		35.70	5.74E+00	1.23E+01
		208.95 *		2.24	4.40E+01	9.34E+01
		300.22 *		16.00	1.10E+01	2.39E+01
TL-208	0.86	583.14 *		30.22	1.85E+00	3.92E-01
		860.37		4.48		
		2614.66 *		35.85	1.28E+00	3.26E-01
PB-210	0.99	46.50 *		4.25	2.90E+00	1.93E+00
BI-212	0.75	727.17 *		11.80	1.37E+00	8.73E-01
		1620.62		2.75		
PB-212	0.96	238.63 *		44.60	2.53E+00	4.19E-01
		300.09 *		3.41	2.80E+00	1.41E+00
BI-214	0.92	609.31 *		46.30	1.38E+00	2.75E-01
		1120.29 *		15.10	1.42E+00	7.17E-01
		1764.49 *		15.80	1.21E+00	4.81E-01
		2204.22		4.98		
PB-214	0.99	295.21 *		19.19	1.70E+00	3.71E-01
		351.92 *		37.19	1.45E+00	3.28E-01
RA-226	0.98	186.21 *		3.28	3.88E+00	7.41E+00
AC-228	0.99	338.32 *		11.40	2.17E+00	6.77E-01
		911.07 *		27.70	2.00E+00	4.55E-01
		969.11 *		16.60	2.05E+00	6.86E-01
TH-234	0.97	63.29 *		3.80	2.02E+00	2.31E+00
CM-243	0.32	209.75 *		3.29	1.62E+00	1.86E+00
		228.14		10.60		
		277.60 *		14.00	2.54E-01	2.76E-01

* = Energy line found in the spectrum.

- = Manually added nuclide.

? = Manually edited nuclide.

@ = Energy line not used for Weighted Mean Activity

Energy Tolerance : 1.000 keV

Nuclide confidence index threshold = 0.30

Errors quoted at 2.000sigma

INTERFERENCE CORRECTED REPORT

Analysis Report for 1606040-14
CP-5025 05-10

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
K-40	1.000	2.21E+01	2.85E+00	
GA-67	0.902	5.26E+00	9.59E+00	
TL-208	0.869	1.51E+00	2.51E-01	
PB-210	0.992	2.90E+00	1.93E+00	
BI-212	0.751	1.37E+00	8.73E-01	
PB-212	0.963	2.44E+00	4.04E-01	
BI-214	0.928	1.35E+00	2.27E-01	
PB-214	0.999	1.56E+00	2.46E-01	
RA-226	0.986	3.88E+00	7.41E+00	
AC-228	0.998	2.05E+00	3.31E-01	
TH-234	0.970	2.02E+00	2.31E+00	
CM-243	0.326	2.79E-01	2.73E-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 1606040-14
CP-5025 05-10

UNIDENTIFIED PEAKS

Peak Locate Performed on : 6/16/2016 7:06:57AM
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	12.83	2.50863E-01	7.01		
4	76.02	2.39444E-01	8.56		
M 5	90.02	3.36510E-02	7.53		
M 10	270.06	1.96821E-02	23.02		
16	395.04	1.17546E-02	47.15	Sum	
17	462.46	1.47198E-02	28.45	Sum	
18	511.02	1.80001E-02	35.05		
19	563.31	8.21970E-03	56.57	Tol.	CS-134
22	704.91	1.36302E-02	39.04		
24	786.61	7.51984E-03	39.78		
25	795.39	9.48889E-03	37.73	Sum	
M 26	904.15	5.53152E-03	52.59	Sum	
28	921.91	6.50752E-03	45.99	Sum	
29	929.74	2.77778E-03	51.36		
m 31	978.49	6.18551E-03	56.70		
33	1155.21	9.78535E-03	33.21	Sum	
34	1166.45	8.08017E-03	50.42	Sum	
35	1183.39	6.64866E-03	44.61	Sum	
36	1238.68	5.71869E-03	59.69		
37	1333.66	3.89460E-03	55.55		
38	1377.72	1.08753E-02	24.34		
39	1408.39	5.44048E-03	42.85	Tol.	EU-152
41	1508.19	2.56536E-03	62.20		
42	1518.84	2.77778E-03	31.62		
43	1590.26	9.23997E-03	19.84		
44	1622.82	6.15079E-03	31.65		
45	1683.28	3.05556E-03	43.60		
46	1716.96	3.05556E-03	30.15		
47	1729.53	3.64815E-03	34.10	Sum	
48	1737.71	1.27315E-03	60.00	Sum	
50	1846.71	2.08333E-03	46.31	Sum	
51	1873.08	1.46825E-03	55.36		
52	1926.05	2.56313E-03	40.64		
53	2103.44	5.83333E-03	21.82	S-Esc	

Analysis Report for 1606040-14
CP-5025 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 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	8.39E-02	9.61E-01	9.61E-01
+	NA-22	1274.54	99.94	-2.16E-02	1.08E-01	1.08E-01
+	NA-24	1368.53	99.99	4.86E+04	1.75E+05	4.02E+05
		2754.09	99.86	-7.15E+04		1.75E+05
+	AL-26	1808.65	99.76	-2.27E-02	5.78E-02	5.78E-02
+	K-40	1460.81	* 10.67	2.21E+01	9.11E-01	9.11E-01
+	@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88	94.40	2.12E-02	7.04E-02	7.04E-02
		78.34	96.00	4.43E-01		1.09E-01
+	SC-46	889.25	99.98	1.22E-02	1.11E-01	1.11E-01
		1120.51	99.99	2.52E-01		2.04E-01
+	V-48	983.52	99.98	3.61E-02	1.87E-01	1.89E-01
		1312.10	97.50	-1.30E-01		1.87E-01
+	CR-51	320.08	9.83	3.03E-01	1.07E+00	1.07E+00
+	MN-54	834.83	99.97	-1.41E-02	1.17E-01	1.17E-01
+	CO-56	846.75	99.96	-2.20E-02	1.12E-01	1.12E-01
		1037.75	14.03	-8.14E-02		9.52E-01
		1238.25	67.00	1.48E-01		2.73E-01
		1771.40	15.51	-3.86E-02		4.15E-01
		2598.48	16.90	-7.84E-02		3.64E-01
+	CO-57	122.06	85.51	-1.45E-02	7.68E-02	7.68E-02
		136.48	10.60	5.23E-01		6.70E-01
+	CO-58	810.76	99.40	3.05E-02	1.24E-01	1.24E-01
+	FE-59	1099.22	56.50	-5.26E-02	2.46E-01	2.46E-01
		1291.56	43.20	-1.27E-01		2.91E-01
+	CO-60	1173.22	100.00	2.84E-02	1.04E-01	1.49E-01
		1332.49	100.00	3.55E-02		1.04E-01
+	ZN-65	1115.52	50.75	-2.77E-02	2.12E-01	2.12E-01
+	GA-67	93.31	* 35.70	5.74E+00	5.19E+00	5.19E+00
		208.95	* 2.24	4.40E+01		8.25E+01
		300.22	* 16.00	1.10E+01		1.83E+01
+	SE-75	121.11	16.70	-7.06E-02	1.21E-01	4.02E-01

Analysis Report for 1606040-14
CP-5025 05-10

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	SE-75	136.00	59.20	-9.94E-02	1.21E-01	1.21E-01
		264.65	59.80	5.31E-02		1.25E-01
		279.53	25.20	-2.73E-01		3.04E-01
		400.65	11.40	3.81E-01		6.96E-01
+	RB-82	776.52	13.00	-2.88E-01	1.13E+00	1.13E+00
+	RB-83	520.41	46.00	3.55E-02	1.92E-01	1.92E-01
		529.64	30.30	-1.00E-01		2.65E-01
		552.65	16.40	3.20E-02		5.37E-01
+	KR-85	513.99	0.43	-3.46E+01	2.01E+01	2.01E+01
+	SR-85	513.99	99.27	-1.75E-01	1.02E-01	1.02E-01
+	Y-88	898.02	93.40	5.70E-02	1.24E-01	1.24E-01
		1836.01	99.38	5.62E-02		1.30E-01
+	NB-93M	16.57	9.43	6.38E+01	1.23E+02	1.23E+02
+	NB-94	702.63	100.00	-2.67E-02	1.04E-01	1.05E-01
		871.10	100.00	2.04E-02		1.04E-01
+	NB-95	765.79	99.81	7.39E-02	1.56E-01	1.56E-01
+	NB-95M	235.69	25.00	-2.13E+01	6.91E+00	6.91E+00
+	ZR-95	724.18	43.70	-2.40E-04	2.10E-01	3.13E-01
		756.72	55.30	-1.96E-02		2.10E-01
+	MO-99	181.06	6.20	-5.67E+00	2.43E+01	3.59E+01
		739.58	12.80	-1.12E+01		2.43E+01
		778.00	4.50	1.94E+01		7.29E+01
+	RU-103	497.08	89.00	7.60E-03	1.03E-01	1.03E-01
+	RU-106	621.84	9.80	1.35E-01	1.05E+00	1.05E+00
+	AG-108M	433.93	89.90	6.07E-03	8.50E-02	8.50E-02
		614.37	90.40	1.75E-03		1.22E-01
		722.95	90.50	2.53E-03		1.16E-01
+	CD-109	88.03	3.72	3.48E+00	2.52E+00	2.52E+00
+	AG-110M	657.75	93.14	-5.43E-03	1.11E-01	1.11E-01
		677.61	10.53	-1.62E-01		1.00E+00
		706.67	16.46	4.07E-03		7.16E-01
		763.93	21.98	4.18E-01		5.71E-01
		884.67	71.63	-9.47E-03		1.40E-01
		1384.27	23.94	2.96E-02		4.53E-01
+	CD-113M	263.70	0.02	-1.02E+02	2.94E+02	2.94E+02
+	SN-113	255.12	1.93	-6.41E-01	1.26E-01	3.87E+00
		391.69	64.90	-6.37E-02		1.26E-01
+	TE123M	159.00	84.10	6.99E-03	8.59E-02	8.59E-02
+	SB-124	602.71	97.87	-4.66E-02	1.21E-01	1.21E-01
		645.85	7.26	1.04E-02		1.53E+00
		722.78	11.10	2.42E-02		1.11E+00
		1691.02	49.00	6.17E-03		2.06E-01
+	I-125	35.49	6.49	-2.65E-01	2.32E+00	2.32E+00
+	SB-125	176.33	6.89	6.85E-01	2.70E-01	1.04E+00
		427.89	29.33	9.68E-02		2.70E-01
		463.38	10.35	7.24E-01		9.00E-01
		600.56	17.80	-1.00E-01		5.49E-01
		635.90	11.32	-2.17E-01		8.14E-01

Analysis Report for 1606040-14
CP-5025 05-10

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	SB-126	414.70	83.30	-1.30E-02	1.93E-01	1.93E-01
		666.33	99.60	4.85E-03		2.21E-01
		695.00	99.60	1.02E-01		2.07E-01
		720.50	53.80	1.28E-02		3.95E-01
+	SN-126	87.57	37.00	3.42E-01	2.49E-01	2.49E-01
+	SB-127	473.00	25.00	-2.65E+00	3.42E+00	3.42E+00
		685.20	35.70	1.02E+00		3.50E+00
		783.80	14.70	9.39E-01		8.73E+00
+	I-129	29.78	57.00	-9.69E-02	3.85E-01	3.85E-01
		33.60	13.20	-3.83E-01		1.12E+00
		39.58	7.52	2.85E-01		1.33E+00
+	I-131	284.30	6.05	9.91E-01	2.97E-01	3.99E+00
		364.48	81.20	5.71E-02		2.97E-01
		636.97	7.26	-1.97E+00		4.01E+00
		722.89	1.80	4.16E-01		1.90E+01
+	TE-132	49.72	13.10	1.31E+00	1.57E+00	9.90E+00
		228.16	88.00	-9.59E-02		1.57E+00
+	BA-133	81.00	33.00	1.10E-02	1.13E-01	1.74E-01
		302.84	17.80	-4.66E-01		4.07E-01
		356.01	60.00	-3.34E-02		1.13E-01
+	I-133	529.87	86.30	-3.32E+02	5.12E+03	5.12E+03
+	XE-133	81.00	38.00	5.84E-02	9.26E-01	9.26E-01
+	CS-134	563.23	8.38	4.22E-01	1.23E-01	1.01E+00
		569.32	15.43	-4.55E-02		4.69E-01
		604.70	97.60	-2.16E-02		1.23E-01
		795.84	85.40	1.30E-01		1.44E-01
		801.93	8.73	-7.93E-01		1.16E+00
+	CS-135	268.24	16.00	-3.61E-02	5.08E-01	5.08E-01
+	I-135	1131.51	22.50	1.44E+14	4.19E+14	5.52E+14
		1260.41	28.60	-1.38E+14		4.19E+14
		1678.03	9.54	5.40E+13		9.41E+14
+	CS-136	153.22	7.46	4.96E-01	1.94E-01	1.93E+00
		163.89	4.61	-1.68E-01		2.89E+00
		176.55	13.56	3.12E-02		1.08E+00
		273.65	12.66	-2.05E+00		1.11E+00
		340.57	48.50	5.74E-02		3.50E-01
		818.50	99.70	-2.05E-02		1.94E-01
		1048.07	79.60	6.23E-02		2.83E-01
		1235.34	19.70	1.36E-01		1.74E+00
+	CS-137	661.65	85.12	1.63E-02	1.25E-01	1.25E-01
+	LA-138	788.74	34.00	1.97E-01	1.80E-01	3.07E-01
		1435.80	66.00	7.06E-02		1.80E-01
+	CE-139	165.85	80.35	1.87E-02	8.73E-02	8.73E-02
+	BA-140	162.64	6.70	-2.77E+00	6.60E-01	1.94E+00
		304.84	4.50	-9.17E-01		3.25E+00
		423.70	3.20	-5.98E-01		4.80E+00
		437.55	2.00	-4.56E-01		7.98E+00
		537.32	25.00	1.29E-02		6.60E-01
+	LA-140	328.77	20.50	5.67E-01	2.35E-01	8.65E-01

Analysis Report for 1606040-14
CP-5025 05-10

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	LA-140	487.03	45.50	1.20E-01	2.35E-01	3.50E-01
		815.85	23.50	-4.06E-01		7.98E-01
		1596.49	95.49	-7.70E-02		2.35E-01
+	CE-141	145.44	48.40	9.85E-02	1.89E-01	1.89E-01
+	CE-143	57.36	11.80	8.26E+01	2.59E+02	5.72E+02
		293.26	42.00	3.96E+02		2.59E+02
		664.55	5.20	3.14E+02		2.04E+03
+	CE-144	133.54	10.80	2.51E-01	6.42E-01	6.42E-01
+	PM-144	476.78	42.00	1.79E-02	9.45E-02	2.05E-01
		618.01	98.60	7.45E-02		1.14E-01
		696.49	99.49	3.84E-02		9.45E-02
+	PM-145	36.85	21.70	1.90E-01	2.98E-01	5.65E-01
		37.36	39.70	1.01E-01		2.98E-01
		42.30	15.10	-1.32E-01		5.52E-01
		72.40	2.31	-3.26E+00		2.92E+00
+	PM-146	453.90	39.94	1.56E-01	2.03E-01	2.03E-01
		735.90	14.01	-1.50E-01		7.01E-01
		747.13	13.10	-7.01E-01		7.23E-01
+	ND-147	91.11	28.90	6.43E-01	7.86E-01	7.86E-01
		531.02	13.10	2.90E-01		1.40E+00
+	PM-149	285.90	3.10	-5.01E+01	1.74E+02	1.74E+02
+	EU-152	121.78	20.50	-5.84E-02	3.10E-01	3.10E-01
		244.69	5.40	-4.14E-01		1.18E+00
		344.27	19.13	1.90E-01		3.92E-01
		778.89	9.20	5.09E-01		1.10E+00
		964.01	10.40	2.82E-01		1.32E+00
		1085.78	7.22	3.46E-01		1.68E+00
		1112.02	9.60	1.13E-01		1.17E+00
		1407.95	14.94	5.76E-01		8.82E-01
+	GD-153	97.43	31.30	1.40E-01	2.23E-01	2.23E-01
		103.18	22.20	-9.79E-02		3.02E-01
+	EU-154	123.07	40.50	4.60E-02	1.58E-01	1.58E-01
		723.30	19.70	1.17E-02		5.34E-01
		873.19	11.50	5.44E-01		9.35E-01
		996.32	10.30	-9.18E-01		8.41E-01
		1004.76	17.90	1.05E-01		6.09E-01
		1274.45	35.50	-6.04E-02		3.02E-01
+	EU-155	86.50	30.90	3.31E-01	2.80E-01	2.80E-01
		105.30	20.70	-6.77E-02		3.21E-01
+	EU-156	811.77	10.40	-1.10E-01	1.83E+00	1.83E+00
		1153.47	7.20	9.71E-01		3.83E+00
		1230.71	8.90	6.15E-01		3.14E+00
+	HO-166M	184.41	72.60	1.14E-01	1.21E-01	1.21E-01
		280.45	29.60	-2.15E-01		2.40E-01
		410.94	11.10	6.08E-02		7.21E-01
		711.69	54.10	1.48E-02		1.87E-01
+	TM-171	66.72	0.14	-1.51E+01	4.73E+01	4.73E+01
+	HF-172	81.75	4.52	-1.86E+00	5.84E-01	1.25E+00
		125.81	11.30	-1.21E+00		5.84E-01

Analysis Report for 1606040-14
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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	LU-172	181.53	20.60	1.18E-01	7.70E-01	1.39E+00
		810.06	16.63	6.58E-01		2.68E+00
		912.12	15.25	1.48E+01		5.94E+00
		1093.66	62.50	-7.89E-02		7.70E-01
+	LU-173	100.72	5.24	2.24E-01	3.98E-01	1.26E+00
		272.11	21.20	2.08E-01		3.98E-01
+	HF-175	343.40	84.00	-3.06E-02	9.70E-02	9.70E-02
+	LU-176	88.34	13.30	9.52E-01	7.16E-02	6.92E-01
		201.83	86.00	-7.47E-03		8.39E-02
		306.78	94.00	-1.01E-02		7.16E-02
+	TA-182	67.75	41.20	5.27E-02	1.75E-01	1.75E-01
		1121.30	34.90	6.77E-01		5.62E-01
		1189.05	16.23	1.02E-01		9.76E-01
		1221.41	26.98	7.94E-02		5.94E-01
		1231.02	11.44	9.27E-02		1.42E+00
+	IR-192	308.46	29.68	4.62E-02	1.83E-01	2.67E-01
		468.07	48.10	4.45E-02		1.83E-01
+	HG-203	279.19	77.30	1.93E-02	1.20E-01	1.20E-01
+	BI-207	569.67	97.72	-7.10E-03	7.33E-02	7.33E-02
		1063.62	74.90	-9.24E-02		1.29E-01
+	TL-208	583.14	* 30.22	1.85E+00	4.43E-02	3.84E-01
		860.37	4.48	4.29E-01		2.62E+00
		2614.66	* 35.85	1.28E+00		4.43E-02
+	BI-210M	262.00	45.00	-1.58E-02	1.54E-01	1.54E-01
		300.00	23.00	1.74E-01		3.66E-01
+	PB-210	46.50	* 4.25	2.90E+00	3.08E+00	3.08E+00
+	PB-211	404.84	2.90	-7.96E-01	2.47E+00	2.47E+00
		831.96	2.90	2.17E+00		3.90E+00
+	BI-212	727.17	* 11.80	1.37E+00	1.35E+00	1.35E+00
		1620.62	2.75	2.93E-01		4.31E+00
+	PB-212	238.63	* 44.60	2.53E+00	2.98E-01	2.98E-01
		300.09	* 3.41	2.80E+00		4.64E+00
+	BI-214	609.31	* 46.30	1.38E+00	2.76E-01	2.76E-01
		1120.29	* 15.10	1.42E+00		1.04E+00
		1764.49	* 15.80	1.21E+00		4.69E-01
		2204.22	4.98	1.28E+00		2.54E+00
+	PB-214	295.21	* 19.19	1.70E+00	2.85E-01	8.11E-01
		351.92	* 37.19	1.45E+00		2.85E-01
+	RN-219	401.80	6.50	7.28E-01	1.15E+00	1.15E+00
+	RA-223	323.87	3.88	-2.09E+00	1.73E+00	1.73E+00
+	RA-224	240.98	3.95	8.31E+00	3.86E+00	3.86E+00
+	RA-225	40.00	31.00	1.29E-01	5.99E-01	5.99E-01
+	RA-226	186.21	* 3.28	3.88E+00	3.27E+00	3.27E+00
+	TH-227	50.10	8.40	1.09E-01	8.24E-01	8.24E-01
		236.00	11.50	-3.32E+00		1.08E+00
		256.20	6.30	-2.19E-01		1.07E+00
+	AC-228	338.32	* 11.40	2.17E+00	5.73E-01	8.11E-01
		911.07	* 27.70	2.00E+00		5.73E-01

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	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	AC-228	969.11	*	16.60	2.05E+00	5.73E-01	1.95E+00
+	TH-230	48.44		16.90	-6.13E-01	4.20E-01	4.20E-01
		62.85		4.60	2.07E+00		1.74E+00
		67.67		0.37	5.40E+00		1.80E+01
+	PA-231	283.67		1.60	1.15E+00	3.14E+00	4.61E+00
		302.67		2.30	-3.60E+00		3.14E+00
+	TH-231	25.64		14.70	1.72E-01	9.79E-01	3.06E+00
		84.21		6.40	1.02E+00		9.79E-01
+	PA-233	311.98		38.60	8.46E-02	2.53E-01	2.53E-01
+	PA-234	131.20		20.40	3.41E-01	3.61E-01	3.61E-01
		733.99		8.80	1.31E-01		1.17E+00
		946.00		12.00	-3.15E-01		7.93E-01
+	PA-234M	1001.03		0.92	4.12E+00	1.18E+01	1.18E+01
+	TH-234	63.29	*	3.80	2.02E+00	3.79E+00	3.79E+00
+	U-235	143.76		10.50	-4.96E-02	6.43E-01	6.43E-01
		163.35		4.70	-1.88E+00		1.32E+00
		205.31		4.70	-4.32E-01		1.52E+00
+	NP-237	86.50		12.60	8.08E-01	6.83E-01	6.83E-01
+	NP-239	106.10		22.70	2.53E-01	1.70E+01	1.70E+01
		228.18		10.70	-2.42E+00		3.95E+01
		277.60		14.10	1.07E+01		3.06E+01
+	AM-241	59.54		35.90	-9.25E-02	1.88E-01	1.88E-01
+	AM-243	74.67		66.00	-6.19E-01	1.47E-01	1.47E-01
+	CM-243	209.75	*	3.29	1.62E+00	7.02E-01	3.04E+00
		228.14		10.60	-4.30E-02		7.02E-01
		277.60	*	14.00	2.54E-01		1.18E+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

: 00786

Analysis Report for 1606040-14
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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	9.61E-01	9.61E-01	8.39E-02	4.51E-01
NA-22	1274.54	99.94	1.08E-01	1.08E-01	-2.16E-02	4.82E-02
NA-24	1368.53	99.99	4.02E+05	1.75E+05	4.86E+04	1.76E+05
	2754.09	99.86	1.75E+05		-7.15E+04	5.54E+04
AL-26	1808.65	99.76	5.78E-02	5.78E-02	-2.27E-02	2.16E-02
+ K-40	1460.81	* 10.67	9.11E-01	9.11E-01	2.21E+01	3.96E-01
@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26	1.00E+20
TI-44	67.88	94.40	7.04E-02	7.04E-02	2.12E-02	3.40E-02
	78.34	96.00	1.09E-01		4.43E-01	5.34E-02
SC-46	889.25	99.98	1.11E-01	1.11E-01	1.22E-02	5.09E-02
	1120.51	99.99	2.04E-01		2.52E-01	9.62E-02
V-48	983.52	99.98	1.89E-01	1.87E-01	3.61E-02	8.58E-02
	1312.10	97.50	1.87E-01		-1.30E-01	8.24E-02
CR-51	320.08	9.83	1.07E+00	1.07E+00	3.03E-01	5.07E-01
MN-54	834.83	99.97	1.17E-01	1.17E-01	-1.41E-02	5.42E-02
CO-56	846.75	99.96	1.12E-01	1.12E-01	-2.20E-02	5.12E-02
	1037.75	14.03	9.52E-01		-8.14E-02	4.36E-01
	1238.25	67.00	2.73E-01		1.48E-01	1.27E-01
	1771.40	15.51	4.15E-01		-3.86E-02	1.55E-01
	2598.48	16.90	3.64E-01		-7.84E-02	1.29E-01
CO-57	122.06	85.51	7.68E-02	7.68E-02	-1.45E-02	3.71E-02
	136.48	10.60	6.70E-01		5.23E-01	3.24E-01
CO-58	810.76	99.40	1.24E-01	1.24E-01	3.05E-02	5.74E-02
FE-59	1099.22	56.50	2.46E-01	2.46E-01	-5.26E-02	1.12E-01
	1291.56	43.20	2.91E-01		-1.27E-01	1.29E-01
CO-60	1173.22	100.00	1.49E-01	1.04E-01	2.84E-02	6.89E-02
	1332.49	100.00	1.04E-01		3.55E-02	4.62E-02
ZN-65	1115.52	50.75	2.12E-01	2.12E-01	-2.77E-02	9.55E-02
+ GA-67	93.31	* 35.70	5.19E+00	5.19E+00	5.74E+00	2.54E+00
	208.95	* 2.24	8.25E+01		4.40E+01	4.00E+01
	300.22	* 16.00	1.83E+01		1.10E+01	8.93E+00
SE-75	121.11	16.70	4.02E-01	1.21E-01	-7.06E-02	1.94E-01
	136.00	59.20	1.21E-01		-9.94E-02	5.82E-02
	264.65	59.80	1.25E-01		5.31E-02	5.94E-02
	279.53	25.20	3.04E-01		-2.73E-01	1.45E-01
	400.65	11.40	6.96E-01		3.81E-01	3.26E-01
RB-82	776.52	13.00	1.13E+00	1.13E+00	-2.88E-01	5.21E-01
RB-83	520.41	46.00	1.92E-01	1.92E-01	3.55E-02	8.91E-02
	529.64	30.30	2.65E-01		-1.00E-01	1.22E-01
	552.65	16.40	5.37E-01		3.20E-02	2.48E-01
KR-85	513.99	0.43	2.01E+01	2.01E+01	-3.46E+01	9.42E+00
SR-85	513.99	99.27	1.02E-01	1.02E-01	-1.75E-01	4.76E-02
Y-88	898.02	93.40	1.24E-01	1.24E-01	5.70E-02	5.71E-02
	1836.01	99.38	1.30E-01		5.62E-02	5.69E-02
NB-93M	16.57	9.43	1.23E+02	1.23E+02	6.38E+01	5.98E+01
NB-94	702.63	100.00	1.05E-01	1.04E-01	-2.67E-02	4.88E-02
	871.10	100.00	1.04E-01		2.04E-02	4.76E-02
NB-95	765.79	99.81	1.56E-01	1.56E-01	7.39E-02	7.31E-02
NB-95M	235.69	25.00	6.91E+00	6.91E+00	-2.13E+01	3.37E+00
ZR-95	724.18	43.70	3.13E-01	2.10E-01	-2.40E-04	1.47E-01
	756.72	55.30	2.10E-01		-1.96E-02	9.69E-02

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)	
MO-99	181.06	6.20	3.59E+01	2.43E+01	-5.67E+00	1.72E+01	
	739.58	12.80	2.43E+01		-1.12E+01	1.12E+01	
	778.00	4.50	7.29E+01		1.94E+01	3.37E+01	
RU-103	497.08	89.00	1.03E-01	1.03E-01	7.60E-03	4.75E-02	
	RU-106	621.84	9.80	1.05E+00	1.05E+00	1.35E-01	4.91E-01
AG-108M	433.93	89.90	8.50E-02	8.50E-02	6.07E-03	3.98E-02	
	614.37	90.40	1.22E-01		1.75E-03	5.75E-02	
	722.95	90.50	1.16E-01		2.53E-03	5.39E-02	
CD-109	88.03	3.72	2.52E+00	2.52E+00	3.48E+00	1.23E+00	
AG-110M	657.75	93.14	1.11E-01	1.11E-01	-5.43E-03	5.15E-02	
	677.61	10.53	1.00E+00		-1.62E-01	4.67E-01	
	706.67	16.46	7.16E-01		4.07E-03	3.35E-01	
	763.93	21.98	5.71E-01		4.18E-01	2.68E-01	
	884.67	71.63	1.40E-01		-9.47E-03	6.38E-02	
CD-113M	1384.27	23.94	4.53E-01		2.96E-02	2.00E-01	
SN-113	263.70	0.02	2.94E+02	2.94E+02	-1.02E+02	1.40E+02	
TE123M	255.12	1.93	3.87E+00	1.26E-01	-6.41E-01	1.84E+00	
	391.69	64.90	1.26E-01		-6.37E-02	5.94E-02	
SB-124	159.00	84.10	8.59E-02	8.59E-02	6.99E-03	4.14E-02	
	602.71	97.87	1.21E-01		1.21E-01	-4.66E-02	5.66E-02
	645.85	7.26	1.53E+00		1.04E-02	7.11E-01	
I-125	722.78	11.10	1.11E+00		2.42E-02	5.14E-01	
	1691.02	49.00	2.06E-01		6.17E-03	8.62E-02	
	35.49	6.49	2.32E+00	2.32E+00	-2.65E-01	1.11E+00	
	176.33	6.89	1.04E+00	2.70E-01	6.85E-01	5.01E-01	
	427.89	29.33	2.70E-01		9.68E-02	1.27E-01	
SB-125	463.38	10.35	9.00E-01		7.24E-01	4.25E-01	
	600.56	17.80	5.49E-01		-1.00E-01	2.57E-01	
	635.90	11.32	8.14E-01		-2.17E-01	3.78E-01	
	414.70	83.30	1.93E-01	1.93E-01	-1.30E-02	9.05E-02	
	666.33	99.60	2.21E-01		4.85E-03	1.03E-01	
SB-126	695.00	99.60	2.07E-01		1.02E-01	9.59E-02	
	720.50	53.80	3.95E-01		1.28E-02	1.83E-01	
	87.57	37.00	2.49E-01	2.49E-01	3.42E-01	1.22E-01	
SN-126	473.00	25.00	3.42E+00	3.42E+00	-2.65E+00	1.58E+00	
	685.20	35.70	3.50E+00		1.02E+00	1.63E+00	
	783.80	14.70	8.73E+00		9.39E-01	4.05E+00	
I-129	29.78	57.00	3.85E-01	3.85E-01	-9.69E-02	1.84E-01	
	33.60	13.20	1.12E+00		-3.83E-01	5.36E-01	
	39.58	7.52	1.33E+00		2.85E-01	6.36E-01	
I-131	284.30	6.05	3.99E+00	2.97E-01	9.91E-01	1.90E+00	
	364.48	81.20	2.97E-01		5.71E-02	1.40E-01	
	636.97	7.26	4.01E+00		-1.97E+00	1.86E+00	
	722.89	1.80	1.90E+01		4.16E-01	8.84E+00	
TE-132	49.72	13.10	9.90E+00	1.57E+00	1.31E+00	4.74E+00	
	228.16	88.00	1.57E+00		-9.59E-02	7.50E-01	
BA-133	81.00	33.00	1.74E-01	1.13E-01	1.10E-02	8.40E-02	
	302.84	17.80	4.07E-01		-4.66E-01	1.93E-01	
	356.01	60.00	1.13E-01		-3.34E-02	5.29E-02	
I-133	529.87	86.30	5.12E+03	5.12E+03	-3.32E+02	2.37E+03	
XE-133	81.00	38.00	9.26E-01	9.26E-01	5.84E-02	4.46E-01	
CS-134	563.23	8.38	1.01E+00	1.23E-01	4.22E-01	4.68E-01	
	569.32	15.43	4.69E-01		-4.55E-02	2.15E-01	

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
CS-134	604.70	97.60	1.23E-01	1.23E-01	-2.16E-02	5.81E-02
	795.84	85.40	1.44E-01		1.30E-01	6.71E-02
	801.93	8.73	1.16E+00		-7.93E-01	5.33E-01
CS-135	268.24	16.00	5.08E-01	5.08E-01	-3.61E-02	2.43E-01
I-135	1131.51	22.50	5.52E+14	4.19E+14	1.44E+14	2.52E+14
	1260.41	28.60	4.19E+14		-1.38E+14	1.89E+14
	1678.03	9.54	9.41E+14		5.40E+13	3.97E+14
CS-136	153.22	7.46	1.93E+00	1.94E-01	4.96E-01	9.32E-01
	163.89	4.61	2.89E+00		-1.68E-01	1.39E+00
	176.55	13.56	1.08E+00		3.12E-02	5.18E-01
	273.65	12.66	1.11E+00		-2.05E+00	5.29E-01
	340.57	48.50	3.50E-01		5.74E-02	1.67E-01
	818.50	99.70	1.94E-01		-2.05E-02	8.88E-02
	1048.07	79.60	2.83E-01		6.23E-02	1.29E-01
	1235.34	19.70	1.74E+00		1.36E-01	8.13E-01
CS-137	661.65	85.12	1.25E-01	1.25E-01	1.63E-02	5.84E-02
LA-138	788.74	34.00	3.07E-01	1.80E-01	1.97E-01	1.42E-01
	1435.80	66.00	1.80E-01		7.06E-02	8.04E-02
CE-139	165.85	80.35	8.73E-02	8.73E-02	1.87E-02	4.19E-02
BA-140	162.64	6.70	1.94E+00	6.60E-01	-2.77E+00	9.29E-01
	304.84	4.50	3.25E+00		-9.17E-01	1.54E+00
	423.70	3.20	4.80E+00		-5.98E-01	2.24E+00
	437.55	2.00	7.98E+00		-4.56E-01	3.73E+00
	537.32	25.00	6.60E-01		1.29E-02	3.06E-01
LA-140	328.77	20.50	8.65E-01	2.35E-01	5.67E-01	4.12E-01
	487.03	45.50	3.50E-01		1.20E-01	1.63E-01
	815.85	23.50	7.98E-01		-4.06E-01	3.63E-01
	1596.49	95.49	2.35E-01		-7.70E-02	1.02E-01
CE-141	145.44	48.40	1.89E-01	1.89E-01	9.85E-02	9.11E-02
CE-143	57.36	11.80	5.72E+02	2.59E+02	8.26E+01	2.76E+02
	293.26	42.00	2.59E+02		3.96E+02	1.25E+02
	664.55	5.20	2.04E+03		3.14E+02	9.55E+02
CE-144	133.54	10.80	6.42E-01	6.42E-01	2.51E-01	3.10E-01
PM-144	476.78	42.00	2.05E-01	9.45E-02	1.79E-02	9.59E-02
	618.01	98.60	1.14E-01		7.45E-02	5.37E-02
	696.49	99.49	9.45E-02		3.84E-02	4.36E-02
PM-145	36.85	21.70	5.65E-01	2.98E-01	1.90E-01	2.71E-01
	37.36	39.70	2.98E-01		1.01E-01	1.43E-01
	42.30	15.10	5.52E-01		-1.32E-01	2.64E-01
	72.40	2.31	2.92E+00		-3.26E+00	1.41E+00
PM-146	453.90	39.94	2.03E-01	2.03E-01	1.56E-01	9.50E-02
	735.90	14.01	7.01E-01		-1.50E-01	3.24E-01
	747.13	13.10	7.23E-01		-7.01E-01	3.33E-01
ND-147	91.11	28.90	7.86E-01	7.86E-01	6.43E-01	3.84E-01
	531.02	13.10	1.40E+00		2.90E-01	6.47E-01
PM-149	285.90	3.10	1.74E+02	1.74E+02	-5.01E+01	8.27E+01
EU-152	121.78	20.50	3.10E-01	3.10E-01	-5.84E-02	1.49E-01
	244.69	5.40	1.18E+00		-4.14E-01	5.61E-01
	344.27	19.13	3.92E-01		1.90E-01	1.85E-01
	778.89	9.20	1.10E+00		5.09E-01	5.10E-01
	964.01	10.40	1.32E+00		2.82E-01	6.15E-01
	1085.78	7.22	1.68E+00		3.46E-01	7.71E-01
	1112.02	9.60	1.17E+00		1.13E-01	5.28E-01

Analysis Report for 1606040-14
CP-5025 05-10

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
EU-152	1407.95	14.94	8.82E-01	3.10E-01	5.76E-01	3.99E-01
GD-153	97.43	31.30	2.23E-01	2.23E-01	1.40E-01	1.08E-01
	103.18	22.20	3.02E-01		-9.79E-02	1.46E-01
EU-154	123.07	40.50	1.58E-01	1.58E-01	4.60E-02	7.63E-02
	723.30	19.70	5.34E-01		1.17E-02	2.48E-01
	873.19	11.50	9.35E-01		5.44E-01	4.30E-01
	996.32	10.30	8.41E-01		-9.18E-01	3.74E-01
	1004.76	17.90	6.09E-01		1.05E-01	2.77E-01
	1274.45	35.50	3.02E-01		-6.04E-02	1.35E-01
EU-155	86.50	30.90	2.80E-01	2.80E-01	3.31E-01	1.37E-01
	105.30	20.70	3.21E-01		-6.77E-02	1.55E-01
EU-156	811.77	10.40	1.83E+00	1.83E+00	-1.10E-01	8.44E-01
	1153.47	7.20	3.83E+00		9.71E-01	1.78E+00
	1230.71	8.90	3.14E+00		6.15E-01	1.45E+00
HO-166M	184.41	72.60	1.21E-01	1.21E-01	1.14E-01	5.89E-02
	280.45	29.60	2.40E-01		-2.15E-01	1.14E-01
	410.94	11.10	7.21E-01		6.08E-02	3.39E-01
	711.69	54.10	1.87E-01		1.48E-02	8.67E-02
TM-171	66.72	0.14	4.73E+01	4.73E+01	-1.51E+01	2.28E+01
HF-172	81.75	4.52	1.25E+00	5.84E-01	-1.86E+00	6.01E-01
	125.81	11.30	5.84E-01		-1.21E+00	2.82E-01
LU-172	181.53	20.60	1.39E+00	7.70E-01	1.18E-01	6.69E-01
	810.06	16.63	2.68E+00		6.58E-01	1.24E+00
	912.12	15.25	5.94E+00		1.48E+01	2.85E+00
	1093.66	62.50	7.70E-01		-7.89E-02	3.51E-01
LU-173	100.72	5.24	1.26E+00	3.98E-01	2.24E-01	6.08E-01
	272.11	21.20	3.98E-01		2.08E-01	1.91E-01
HF-175	343.40	84.00	9.70E-02	9.70E-02	-3.06E-02	4.57E-02
LU-176	88.34	13.30	6.92E-01	7.16E-02	9.52E-01	3.38E-01
	201.83	86.00	8.39E-02		-7.47E-03	4.03E-02
	306.78	94.00	7.16E-02		-1.01E-02	3.38E-02
TA-182	67.75	41.20	1.75E-01	1.75E-01	5.27E-02	8.48E-02
	1121.30	34.90	5.62E-01		6.77E-01	2.65E-01
	1189.05	16.23	9.76E-01		1.02E-01	4.51E-01
	1221.41	26.98	5.94E-01		7.94E-02	2.74E-01
	1231.02	11.44	1.42E+00		9.27E-02	6.57E-01
IR-192	308.46	29.68	2.67E-01	1.83E-01	4.62E-02	1.26E-01
	468.07	48.10	1.83E-01		4.45E-02	8.52E-02
HG-203	279.19	77.30	1.20E-01	1.20E-01	1.93E-02	5.71E-02
BI-207	569.67	97.72	7.33E-02	7.33E-02	-7.10E-03	3.36E-02
	1063.62	74.90	1.29E-01		-9.24E-02	5.77E-02
+ TL-208	583.14	* 30.22	3.84E-01	4.43E-02	1.85E+00	1.82E-01
	860.37	4.48	2.62E+00		4.29E-01	1.21E+00
	2614.66	* 35.85	4.43E-02		1.28E+00	0.00E+00
BI-210M	262.00	45.00	1.54E-01	1.54E-01	-1.58E-02	7.33E-02
	300.00	23.00	3.66E-01		1.74E-01	1.75E-01
+ PB-210	46.50	* 4.25	3.08E+00	3.08E+00	2.90E+00	1.50E+00
PB-211	404.84	2.90	2.47E+00	2.47E+00	-7.96E-01	1.15E+00
	831.96	2.90	3.90E+00		2.17E+00	1.81E+00
+ BI-212	727.17	* 11.80	1.35E+00	1.35E+00	1.37E+00	6.46E-01
	1620.62	2.75	4.31E+00		2.93E-01	1.91E+00
+ PB-212	238.63	* 44.60	2.98E-01	2.98E-01	2.53E+00	1.45E-01
	300.09	* 3.41	4.64E+00		2.80E+00	2.27E+00

Analysis Report for 1606040-14
CP-5025 05-10

	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	2.76E-01	2.76E-01	1.38E+00	1.31E-01
		1120.29	*	15.10	1.04E+00		1.42E+00	4.86E-01
		1764.49	*	15.80	4.69E-01		1.21E+00	1.89E-01
		2204.22		4.98	2.54E+00		1.28E+00	1.11E+00
+	PB-214	295.21	*	19.19	8.11E-01	2.85E-01	1.70E+00	3.96E-01
		351.92	*	37.19	2.85E-01		1.45E+00	1.37E-01
	RN-219	401.80		6.50	1.15E+00	1.15E+00	7.28E-01	5.40E-01
	RA-223	323.87		3.88	1.73E+00	1.73E+00	-2.09E+00	8.14E-01
	RA-224	240.98		3.95	3.86E+00	3.86E+00	8.31E+00	1.89E+00
	RA-225	40.00		31.00	5.99E-01	5.99E-01	1.29E-01	2.87E-01
+	RA-226	186.21	*	3.28	3.27E+00	3.27E+00	3.88E+00	1.60E+00
	TH-227	50.10		8.40	8.24E-01	8.24E-01	1.09E-01	3.95E-01
		236.00		11.50	1.08E+00		-3.32E+00	5.25E-01
		256.20		6.30	1.07E+00		-2.19E-01	5.09E-01
+	AC-228	338.32	*	11.40	8.11E-01	5.73E-01	2.17E+00	3.88E-01
		911.07	*	27.70	5.73E-01		2.00E+00	2.70E-01
		969.11	*	16.60	1.95E+00		2.05E+00	9.47E-01
	TH-230	48.44		16.90	4.20E-01	4.20E-01	-6.13E-01	2.01E-01
		62.85		4.60	1.74E+00		2.07E+00	8.43E-01
		67.67		0.37	1.80E+01		5.40E+00	8.70E+00
	PA-231	283.67		1.60	4.61E+00	3.14E+00	1.15E+00	2.19E+00
		302.67		2.30	3.14E+00		-3.60E+00	1.49E+00
	TH-231	25.64		14.70	3.06E+00	9.79E-01	1.72E-01	1.46E+00
		84.21		6.40	9.79E-01		1.02E+00	4.73E-01
	PA-233	311.98		38.60	2.53E-01	2.53E-01	8.46E-02	1.20E-01
	PA-234	131.20		20.40	3.61E-01	3.61E-01	3.41E-01	1.75E-01
		733.99		8.80	1.17E+00		1.31E-01	5.42E-01
		946.00		12.00	7.93E-01		-3.15E-01	3.58E-01
	PA-234M	1001.03		0.92	1.18E+01	1.18E+01	4.12E+00	5.36E+00
+	TH-234	63.29	*	3.80	3.79E+00	3.79E+00	2.02E+00	1.87E+00
	U-235	143.76		10.50	6.43E-01	6.43E-01	-4.96E-02	3.10E-01
		163.35		4.70	1.32E+00		-1.88E+00	6.31E-01
		205.31		4.70	1.52E+00		-4.32E-01	7.30E-01
	NP-237	86.50		12.60	6.83E-01	6.83E-01	8.08E-01	3.33E-01
	NP-239	106.10		22.70	1.70E+01	1.70E+01	2.53E-01	8.22E+00
		228.18		10.70	3.95E+01		-2.42E+00	1.89E+01
		277.60		14.10	3.06E+01		1.07E+01	1.46E+01
	AM-241	59.54		35.90	1.88E-01	1.88E-01	-9.25E-02	9.09E-02
	AM-243	74.67		66.00	1.47E-01	1.47E-01	-6.19E-01	7.20E-02
+	CM-243	209.75	*	3.29	3.04E+00	7.02E-01	1.62E+00	1.48E+00
		228.14		10.60	7.02E-01		-4.30E-02	3.36E-01
		277.60	*	14.00	1.18E+00		2.54E-01	5.77E-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 1606040-14
CP-5025 05-10

No Action Level results available for reporting purposes.

DATA REVIEW COMMENTS REPORT

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

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

Sample Title: CP-5025 05-10

Elapsed Live time: 3600
 Elapsed Real Time: 3601

Channel	1	9	17	25	33	41	49	57	65	73	81	89	97	105	113	121	129	137	145	153	161	169	177	185	193	201	209	217	225	233	241	249	257	265	273	281	289	297	305	313	321	329	337	345	353	361	
	0	1084	117	65	63	50	46	74	89	123	81	64	65	81	60	45	110	48	48	39	37	38	38	71	42	34	82	25	37	34	108	28	23	30	22	24	29	32	20	18	27	25	31	18	34	13	
	0	704	95	60	51	48	68	87	91	161	76	178	74	65	49	49	62	54	35	67	40	45	56	147	31	52	49	32	31	26	126	24	29	23	20	26	19	29	23	20	16	14	17	128	26	16	23
	0	328	105	51	41	55	70	77	85	402	67	83	69	61	77	50	48	66	47	61	39	40	40	62	36	36	37	33	37	20	25	22	22	22	26	28	27	27	18	19	24	24	25	57	15	13	20
	0	434	90	55	60	64	71	80	99	118	124	130	64	71	48	59	53	42	43	50	35	38	47	42	37	44	39	40	31	26	27	25	23	27	18	26	15	19	24	14	22	12	19	18	17		
	0	1998	63	48	60	53	73	97	106	527	97	231	54	71	55	59	62	62	44	43	36	31	42	36	34	37	38	25	42	21	35	36	36	44	26	19	19	17	12	19	16	15	21	12			
	0	129	57	52	59	100	61	103	92	182	68	111	58	56	43	41	45	45	45	46	54	42	42	41	49	42	47	34	40	28	21	17	70	26	33	33	23	23	27	24	17	13	21	18	9	18	
	82	94	56	50	58	128	68	161	101	100	204	73	56	56	49	48	52	63	48	40	45	38	44	27	47	33	28	25	37	446	24	27	42	26	23	181	22	24	19	30	17	20	104	23	18		
	821	140	63	55	60	62	71	124	90	81	123	55	47	48	57	61	59	66	44	60	37	55	35	38	34	40	38	41	40	33	26	24	24	23	21	27	51	27	13	28	42	24	16	270	21	10	

369: 13 19 17 13 20 13 14 18

Sample Title: CP-5025 05-10

Channel	17	11	10	13	17	14	16	17
377:	17	11	10	13	17	14	16	17
385:	18	9	15	14	18	14	14	19
393:	16	21	24	18	10	19	9	12
401:	19	22	14	12	11	16	18	13
409:	26	19	13	15	15	18	17	14
417:	11	17	16	12	13	14	11	13
425:	17	14	21	12	11	21	15	7
433:	15	15	19	17	9	12	14	14
441:	15	11	18	12	16	11	10	6
449:	12	16	6	14	19	17	10	16
457:	10	4	10	9	16	23	33	18
465:	8	14	12	12	13	15	15	5
473:	16	6	14	16	22	14	10	13
481:	20	11	10	14	10	14	8	10
489:	17	11	3	5	11	4	12	10
497:	8	13	8	9	13	7	8	5
505:	15	9	12	13	21	48	77	21
513:	18	15	7	12	12	15	10	6
521:	15	12	7	11	9	14	10	7
529:	10	8	11	15	9	10	9	11
537:	12	9	13	14	9	14	10	9
545:	10	13	7	12	12	10	10	7
553:	15	10	10	7	11	8	12	11
561:	9	9	12	11	16	7	4	6
569:	8	7	15	12	15	8	12	16
577:	10	5	13	6	17	45	163	59
585:	10	7	10	8	8	16	6	11
593:	7	16	8	13	11	14	6	8
601:	9	15	7	8	15	14	10	37
609:	182	71	17	12	4	14	12	16
617:	14	6	13	13	13	8	7	9
625:	8	12	6	11	6	14	6	9
633:	13	5	11	10	7	5	5	10
641:	11	8	10	7	10	5	5	10
649:	12	6	9	14	5	3	6	11
657:	8	11	11	4	12	12	15	7
665:	9	10	5	10	10	10	5	4
673:	17	10	8	11	7	10	10	7
681:	7	12	15	7	4	7	7	15
689:	8	9	7	9	11	3	9	8
697:	6	7	4	2	16	14	10	9
705:	8	12	16	10	9	8	6	6
713:	9	9	10	4	8	6	8	8
721:	14	1	8	7	5	17	25	22
729:	9	8	8	9	9	7	8	9
737:	6	6	5	9	8	7	13	9
745:	5	2	8	7	8	6	13	11
753:	10	10	11	7	3	5	4	2
761:	9	11	10	12	11	12	9	8
769:	9	6	5	11	11	4	7	5
777:	7	4	11	8	9	5	4	4
785:	12	11	11	8	3	3	3	3
793:	5	13	24	5	6	8	8	4

801: 7 7 10 3 6 12 11 7

Sample Title: CP-5025 05-10

Channel	1	2	3	4	5	6	7	8
809:	7	8	8	9	2	5	4	4
817:	4	10	5	4	7	7	9	12
825:	7	7	5	1	7	9	8	5
833:	5	10	11	10	3	11	9	8
841:	4	6	7	10	6	4	5	3
849:	5	9	6	7	10	5	9	7
857:	5	3	11	19	12	4	2	6
865:	7	5	3	2	7	10	6	2
873:	7	8	7	5	4	2	5	5
881:	7	4	4	5	4	7	4	6
889:	5	5	7	3	5	5	10	7
897:	9	4	5	1	6	7	4	13
905:	9	3	6	5	6	57	90	27
913:	4	3	3	2	3	4	6	3
921:	6	6	9	6	1	2	2	3
929:	5	7	0	2	3	13	6	3
937:	3	10	8	4	8	5	2	2
945:	2	3	5	7	9	6	4	7
953:	9	4	7	5	5	7	6	4
961:	8	6	6	18	17	2	7	47
969:	56	17	9	8	10	3	5	5
977:	6	13	5	4	2	2	4	6
985:	8	8	8	4	6	6	4	5
993:	4	5	2	2	3	4	2	8
1001:	9	3	5	5	6	3	5	5
1009:	3	5	7	6	5	8	8	7
1017:	4	6	3	8	4	4	7	5
1025:	4	5	5	7	5	5	4	5
1033:	10	1	8	5	5	5	11	6
1041:	4	6	4	5	6	5	5	3
1049:	4	6	5	3	4	11	6	5
1057:	5	6	6	3	1	2	3	5
1065:	6	5	9	4	6	3	3	4
1073:	2	3	3	9	6	3	6	4
1081:	5	5	7	3	6	5	6	8
1089:	6	4	7	4	5	6	4	6
1097:	5	4	8	2	4	4	7	5
1105:	7	5	5	4	8	7	3	5
1113:	2	2	5	2	6	5	24	35
1121:	14	3	4	4	7	3	4	9
1129:	4	7	5	1	4	9	7	3
1137:	6	5	1	4	7	5	3	2
1145:	5	4	4	6	8	4	4	7
1153:	7	12	17	4	4	8	3	3
1161:	5	8	5	9	4	11	8	11
1169:	5	9	4	6	11	6	10	8
1177:	9	5	2	6	6	11	5	11
1185:	8	5	3	13	3	8	11	8
1193:	6	9	8	5	8	6	9	11
1201:	6	5	6	6	4	6	5	8
1209:	6	3	5	5	13	1	7	6
1217:	8	6	4	10	7	8	5	10
1225:	5	7	8	5	6	11	5	10

1233: 6 8 5 8 9 18 7 5

Sample Title: CP-5025 05-10

Channel	1	2	3	4	5	6	7	8	9
1241:	8	3	6	3	6	6	8	7	
1249:	7	7	3	4	5	4	4	5	
1257:	2	5	6	4	4	6	3	9	
1265:	4	4	4	3	4	4	4	5	
1273:	1	2	3	2	6	2	6	6	
1281:	4	7	6	3	5	6	4	6	
1289:	4	1	1	4	4	0	4	4	
1297:	2	1	8	0	5	3	3	3	
1305:	1	3	5	5	2	2	1	6	
1313:	4	2	2	3	7	2	6	4	
1321:	2	0	4	3	3	1	1	0	
1329:	1	2	0	5	6	5	1	2	
1337:	4	2	2	4	2	0	4	1	
1345:	2	4	4	0	2	1	0	5	
1353:	3	2	5	2	5	8	0	3	
1361:	3	6	4	3	1	3	2	2	
1369:	8	1	0	1	1	3	4	8	
1377:	10	11	5	5	4	1	3	0	
1385:	4	4	3	2	3	2	0	3	
1393:	4	2	3	1	3	2	3	2	
1401:	6	1	2	2	4	3	7	7	
1409:	3	5	2	2	1	4	3	3	
1417:	0	3	1	0	5	2	1	2	
1425:	2	2	0	2	3	1	3	4	
1433:	4	2	6	5	0	3	0	4	
1441:	2	3	1	1	2	3	4	2	
1449:	2	7	0	2	1	0	1	3	
1457:	0	11	69	226	166	37	1	0	
1465:	2	0	1	0	2	3	1	1	
1473:	2	1	2	3	3	1	4	3	
1481:	5	3	1	1	1	3	1	1	
1489:	1	0	1	0	2	1	4	2	
1497:	1	1	2	2	2	1	2	2	
1505:	1	1	1	7	3	0	1	3	
1513:	4	1	0	0	2	3	5	0	
1521:	0	2	0	1	2	4	0	3	
1529:	2	0	0	1	1	0	3	2	
1537:	2	1	2	0	4	3	2	1	
1545:	1	2	0	5	1	1	0	1	
1553:	1	0	1	1	2	1	2	0	
1561:	1	0	1	1	1	0	1	1	
1569:	2	0	3	1	0	2	1	1	
1577:	1	4	2	2	1	2	0	1	
1585:	1	1	4	6	5	6	4	3	
1593:	5	0	0	3	1	2	1	1	
1601:	3	2	1	0	1	2	2	2	
1609:	1	1	2	0	1	1	2	0	
1617:	2	2	5	2	4	3	1	1	
1625:	1	4	3	0	0	4	3	1	
1633:	1	3	1	2	0	2	2	1	
1641:	0	0	0	0	0	3	0	0	
1649:	0	3	1	0	0	1	3	2	
1657:	1	1	1	0	1	3	1	1	

1665: 2 3 0 1 0 0 2 0

Sample Title: CP-5025 05-10

Channel	1	2	3	4	5	6	7	8
1673:	2	2	1	2	0	0	1	1
1681:	1	4	3	4	1	0	1	0
1689:	0	1	0	2	3	2	3	1
1697:	2	1	0	0	1	2	0	3
1705:	0	1	1	0	0	0	0	0
1713:	0	2	1	3	2	2	1	0
1721:	0	4	0	0	1	2	0	4
1729:	3	2	1	2	0	0	0	1
1737:	3	2	0	1	1	2	1	1
1745:	1	0	0	1	0	0	0	0
1753:	2	2	0	1	1	2	1	1
1761:	0	3	11	12	12	1	0	0
1769:	0	0	1	0	0	0	2	0
1777:	1	2	1	1	0	1	1	1
1785:	1	0	1	0	0	0	1	1
1793:	1	0	0	0	2	1	0	1
1801:	0	1	0	1	0	0	1	0
1809:	1	0	0	0	1	1	1	0
1817:	0	1	0	3	0	0	1	2
1825:	1	0	1	0	2	1	0	3
1833:	1	1	4	1	2	3	2	0
1841:	1	1	0	2	0	4	2	1
1849:	0	0	1	3	2	1	0	1
1857:	1	2	1	0	2	3	0	0
1865:	0	0	1	4	0	0	0	4
1873:	2	1	0	1	0	2	2	0
1881:	0	0	2	1	0	1	1	1
1889:	0	1	0	0	1	0	0	1
1897:	1	1	0	0	1	1	0	0
1905:	0	1	1	1	0	0	2	1
1913:	0	1	1	0	1	2	0	1
1921:	0	0	2	1	2	2	4	0
1929:	1	0	1	1	1	0	1	0
1937:	1	2	1	0	0	1	1	3
1945:	0	2	0	1	0	1	2	2
1953:	1	2	2	1	0	1	2	3
1961:	4	2	1	0	0	1	0	0
1969:	0	0	1	0	1	1	3	0
1977:	1	0	0	1	2	1	2	0
1985:	1	1	1	0	0	1	2	1
1993:	1	0	0	1	3	1	1	2
2001:	1	1	0	0	1	0	1	2
2009:	2	0	1	0	0	0	0	1
2017:	1	1	0	0	0	0	0	2
2025:	1	0	0	0	2	0	1	0
2033:	1	1	1	1	2	0	2	0
2041:	0	1	1	0	0	1	1	0
2049:	4	0	1	2	1	1	1	1
2057:	2	0	1	1	1	0	0	1
2065:	0	2	1	0	3	0	1	1
2073:	0	0	2	0	0	0	0	2
2081:	0	1	2	0	0	1	1	0
2089:	1	2	0	2	0	0	0	0

2097: 0 0 1 1 2 5 5 4

Sample Title: CP-5025 05-10

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

2529: 0 0 0 0 0 0 0 1 0

Sample Title: CP-5025 05-10

Channel	-----	-----	-----	-----	-----	-----	-----	-----
2537:	0	0	0	0	1	0	0	0
2545:	0	0	1	0	0	0	4	1
2553:	0	2	1	0	0	0	0	0
2561:	0	0	1	0	0	1	1	0
2569:	1	0	0	0	0	0	1	1
2577:	0	1	0	0	2	0	0	0
2585:	0	0	0	0	2	0	1	0
2593:	0	0	0	0	0	1	0	0
2601:	0	1	1	1	0	0	0	0
2609:	0	2	2	10	32	18	10	4
2617:	0	0	0	0	0	0	0	0
2625:	0	0	1	0	0	0	0	0
2633:	0	1	0	0	0	0	1	0
2641:	1	1	0	1	0	0	0	0
2649:	0	2	0	0	0	0	1	0
2657:	0	0	0	0	0	1	0	0
2665:	0	0	0	0	0	0	0	0
2673:	0	0	0	1	0	0	0	0
2681:	1	0	0	0	0	0	1	0
2689:	1	1	0	1	0	0	0	1
2697:	1	1	0	0	0	0	2	0
2705:	1	0	0	0	0	0	1	0
2713:	0	1	0	0	0	0	1	0
2721:	0	0	0	0	0	0	1	0
2729:	0	1	1	0	1	0	0	0
2737:	0	0	0	0	1	0	0	1
2745:	0	0	0	0	0	0	0	0
2753:	0	1	0	0	0	1	2	0
2761:	0	0	0	2	0	1	0	0
2769:	1	0	0	0	1	2	0	1
2777:	0	0	4	0	1	0	0	0
2785:	0	0	0	1	0	0	0	0
2793:	0	0	0	1	0	0	0	0
2801:	0	1	0	0	0	1	0	0
2809:	0	0	0	0	0	1	1	0
2817:	0	0	0	0	0	1	0	0
2825:	0	1	0	0	3	0	0	0
2833:	0	0	0	0	0	0	0	1
2841:	1	0	1	0	0	0	0	1
2849:	0	1	0	0	0	0	0	0
2857:	1	0	1	0	0	0	0	0
2865:	0	1	0	1	0	0	1	0
2873:	0	1	0	0	0	1	0	0
2881:	0	0	0	0	0	0	0	0
2889:	0	1	0	0	0	0	0	0
2897:	0	0	0	0	0	1	0	1
2905:	0	0	1	0	0	0	0	1
2913:	0	0	1	1	0	1	0	1
2921:	2	0	2	0	0	0	0	1
2929:	0	0	0	0	0	0	0	0
2937:	1	1	0	1	0	0	0	0
2945:	0	0	0	0	0	0	0	0
2953:	0	0	0	0	1	0	0	0

2961: 0 0 0 0 0 1 0 0

Sample Title: CP-5025 05-10

Channel	1	2	3	4	5	6	7	8	9
2969:	1	0	0	0	0	0	1	0	0
2977:	0	2	0	0	0	0	0	0	0
2985:	0	1	0	1	0	0	0	0	0
2993:	0	0	1	0	0	1	0	0	0
3001:	0	0	0	0	0	0	0	0	0
3009:	0	0	1	0	0	0	0	0	1
3017:	0	0	0	0	0	0	0	0	0
3025:	0	0	1	0	0	0	0	0	0
3033:	1	0	0	0	0	0	0	0	2
3041:	0	0	0	0	0	0	0	0	0
3049:	1	0	0	0	0	1	0	0	0
3057:	0	0	0	0	0	0	0	0	0
3065:	0	0	0	0	0	0	0	0	0
3073:	0	1	0	0	0	2	1	0	0
3081:	0	1	0	0	0	0	0	0	0
3089:	0	0	1	0	1	1	0	0	0
3097:	0	0	1	0	0	0	0	0	0
3105:	0	0	0	0	0	1	0	0	0
3113:	0	0	1	0	1	0	0	0	0
3121:	0	1	0	1	0	0	0	0	0
3129:	0	0	0	0	0	0	0	0	0
3137:	0	0	0	0	1	0	0	0	1
3145:	0	0	0	1	0	1	0	0	0
3153:	0	0	0	0	0	0	1	0	0
3161:	0	0	0	0	0	0	0	0	0
3169:	0	0	0	0	0	0	0	0	0
3177:	0	0	0	1	0	0	0	0	0
3185:	0	0	0	0	0	0	0	0	0
3193:	2	0	0	0	1	0	0	0	0
3201:	0	0	0	0	1	0	0	0	0
3209:	0	0	2	1	0	0	0	0	0
3217:	0	1	0	0	0	1	0	0	0
3225:	0	0	0	0	0	2	0	0	0
3233:	1	0	0	0	0	0	0	0	0
3241:	0	0	0	0	0	0	0	0	0
3249:	0	1	0	0	3	0	0	0	0
3257:	0	0	1	0	0	0	0	0	1
3265:	0	1	0	0	0	0	0	0	0
3273:	0	0	0	0	0	0	0	0	1
3281:	0	0	1	0	0	0	0	0	0
3289:	0	0	0	0	1	0	0	0	0
3297:	0	0	0	0	0	1	1	0	0
3305:	0	0	0	0	0	0	0	0	0
3313:	0	0	0	0	0	0	0	0	1
3321:	0	0	1	0	0	0	0	0	0
3329:	0	0	0	0	0	1	0	0	0
3337:	0	0	0	1	0	0	0	0	0
3345:	0	1	0	0	0	0	0	0	0
3353:	1	0	0	0	0	0	0	0	0
3361:	0	0	0	0	0	1	0	0	0
3369:	0	0	0	0	0	1	0	0	0
3377:	0	0	0	0	0	0	0	0	0
3385:	0	1	0	0	0	0	0	0	0

3393: 0 0 0 0 0 2 0 0

Sample Title: CP-5025 05-10

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

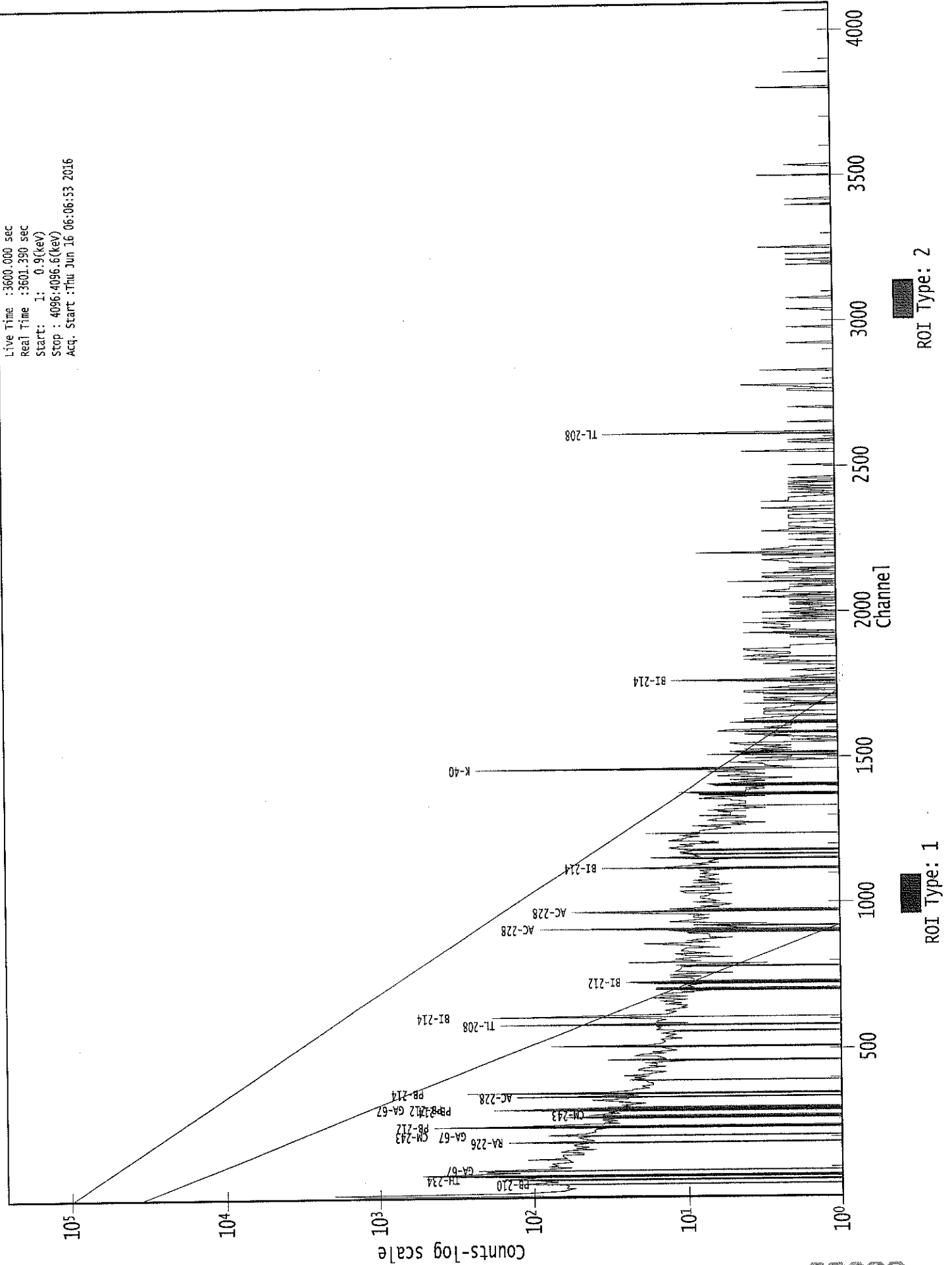
3825: 0 0 1 0 0 1 0 0

Sample Title: CP-5025 05-10

Channel	1	2	3	4	5	6	7	8	9
3833:	1	0	0	0	0	0	0	0	0
3841:	0	1	0	0	0	0	0	0	0
3849:	0	0	0	0	2	0	0	0	0
3857:	0	0	0	0	0	0	0	0	0
3865:	0	1	0	0	0	0	0	0	0
3873:	0	0	0	0	0	0	0	0	0
3881:	0	1	0	0	0	0	0	0	0
3889:	0	0	0	0	1	0	1	0	0
3897:	0	0	0	1	0	0	0	0	0
3905:	0	0	0	1	1	1	0	0	0
3913:	0	0	0	1	0	0	0	0	0
3921:	0	0	0	0	0	0	0	0	0
3929:	0	1	0	0	1	0	0	0	0
3937:	0	0	1	0	1	0	0	0	0
3945:	0	1	1	0	0	0	0	0	0
3953:	1	1	0	0	0	0	0	0	0
3961:	0	0	0	0	0	1	0	0	0
3969:	0	0	0	1	0	0	0	0	0
3977:	0	1	0	0	0	0	1	0	0
3985:	0	1	0	0	0	1	0	0	0
3993:	0	0	0	0	0	0	0	0	0
4001:	0	0	1	0	0	0	0	0	0
4009:	0	0	0	1	0	0	0	0	0
4017:	1	0	0	0	0	1	0	0	0
4025:	0	1	1	0	0	1	0	0	0
4033:	1	0	0	0	0	1	1	0	0
4041:	0	0	0	0	0	0	0	0	0
4049:	0	0	0	0	0	0	0	0	0
4057:	0	0	0	0	0	0	0	0	0
4065:	2	0	0	0	0	0	0	0	0
4073:	0	0	1	0	0	0	0	0	0
4081:	0	0	1	0	0	0	0	0	0
4089:	0	0	0	0	0	0	0	0	0

0000038966.CNF

Live Time : 3600.000 sec
Real Time : 3601.350 sec
Start : 1: 0.9(keV)
Stop : 4096.4096.6(keV)
Acq. Start : Thu Jun 16 06:06:53 2016



Analysis Report for 1606040-15
CP-5025 10-15

✓
6/16

GAMMA SPECTRUM ANALYSIS

Sample Identification : 1606040-15
Sample Description : CP-5025 10-15
Sample Type : SOIL

Sample Size : 3.024E+02 grams
Facility : Countroom

Sample Taken On : 6/2/2016 1:13:50PM
Acquisition Started : 6/16/2016 6:07:32AM

Procedure : GAS-1402 pCi
Operator : Administrator
Detector Name : GE4
Geometry : GAS-1402
Live Time : 3600.0 seconds
Real Time : 3601.2 seconds

Dead Time : 0.03 %

Peak Locate Threshold : 2.50
Peak Locate Range (in channels) : 1 - 4096
Peak Area Range (in channels) : 15 - 4096
Identification Energy Tolerance : 1.000 keV

Energy Calibration Used Done On : 10/25/2014
Efficiency Calibration Used Done On : 11/8/2014
Efficiency Calibration Description :

Sample Number : 38969

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AC
6/16/16

Analysis Report for 1606040-15
CP-5025 10-15

PEAK LOCATE REPORT

Peak Locate Performed on : 6/16/2016 7:07:35AM
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	45.24	44.50	0.0000	0.00
2	63.40	62.66	0.0000	0.00
3	76.25	75.52	0.0000	0.00
4	86.83	86.10	0.0000	0.00
5	93.31	92.59	0.0000	0.00
6	129.37	128.66	0.0000	0.00
7	185.95	185.26	0.0000	0.00
8	199.01	198.33	0.0000	0.00
9	239.38	238.71	0.0000	0.00
10	295.66	295.02	0.0000	0.00
11	338.48	337.86	0.0000	0.00
12	352.01	351.40	0.0000	0.00
13	451.83	451.26	0.0000	0.00
14	466.02	465.46	0.0000	0.00
15	510.41	509.87	0.0000	0.00
16	536.74	536.21	0.0000	0.00
17	582.97	582.47	0.0000	0.00
18	608.91	608.41	0.0000	0.00
19	785.64	785.24	0.0000	0.00
20	794.83	794.43	0.0000	0.00
21	862.19	861.82	0.0000	0.00
22	911.34	911.00	0.0000	0.00
23	968.88	968.57	0.0000	0.00
24	1052.36	1052.10	0.0000	0.00
25	1094.12	1093.88	0.0000	0.00
26	1119.89	1119.66	0.0000	0.00
27	1374.95	1374.87	0.0000	0.00
28	1460.49	1460.47	0.0000	0.00
29	1763.60	1763.76	0.0000	0.00
30	2516.30	2517.00	0.0000	0.00
31	2614.10	2614.87	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.00sigma

Analysis Report for 1606040-15
CP-5025 10-15

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 6/16/2016 7:07:35AM

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	45.24	40 -	48	44.50	1.51E+02	74.74	7.69E+02	3.28
2	63.40	60 -	65	62.66	1.26E+02	62.19	6.75E+02	2.75
3	76.25	69 -	80	75.52	5.62E+02	124.23	1.64E+03	4.23
4	86.83	81 -	95	86.10	1.77E+02	84.56	9.73E+02	3.78
5	93.31	81 -	95	92.59	2.08E+02	76.34	7.24E+02	2.75
6	129.37	125 -	131	128.66	5.99E+01	56.05	5.26E+02	1.55
7	185.95	181 -	188	185.26	8.28E+01	54.99	4.50E+02	2.92
8	199.01	195 -	201	198.33	4.19E+01	45.53	3.34E+02	3.64
9	239.38	232 -	244	238.71	5.16E+02	78.74	4.83E+02	3.12
10	295.66	289 -	298	295.02	4.41E+01	51.92	3.60E+02	2.09
11	338.48	334 -	341	337.86	9.12E+01	37.89	1.76E+02	2.44
12	352.01	344 -	356	351.40	1.98E+02	53.79	2.48E+02	2.47
13	451.83	448 -	455	451.26	2.80E+01	23.32	7.20E+01	2.71
14	466.02	456 -	478	465.46	6.37E+01	61.92	2.69E+02	17.21
15	510.41	503 -	517	509.87	9.41E+01	47.99	2.04E+02	2.73
16	536.74	534 -	539	536.21	1.53E+01	17.44	4.95E+01	2.00
17	582.97	577 -	586	582.47	1.41E+02	31.37	5.93E+01	2.46
18	608.91	603 -	614	608.41	1.05E+02	37.84	1.28E+02	2.94
19	785.64	781 -	790	785.24	3.15E+01	21.86	5.09E+01	4.28
20	794.83	790 -	798	794.43	3.48E+01	21.42	4.83E+01	4.69
21	862.19	853 -	873	861.82	4.19E+01	40.11	1.14E+02	11.18
22	911.34	906 -	915	911.00	6.96E+01	28.91	7.88E+01	3.21
23	968.88	963 -	973	968.57	5.44E+01	27.37	6.92E+01	2.25
24	1052.36	1047 -	1056	1052.10	2.15E+01	18.19	3.50E+01	3.93
25	1094.12	1088 -	1100	1093.88	2.50E+01	22.09	4.61E+01	6.68
26	1119.89	1115 -	1125	1119.66	2.46E+01	25.91	7.49E+01	2.14
27	1374.95	1371 -	1378	1374.87	1.11E+01	10.77	1.18E+01	5.34
28	1460.49	1453 -	1465	1460.47	2.41E+02	34.37	2.41E+01	2.59
29	1763.60	1757 -	1768	1763.76	2.50E+01	10.00	0.00E+00	2.71
30	2516.30	2514 -	2519	2517.00	5.00E+00	4.47	0.00E+00	1.50
31	2614.10	2611 -	2618	2614.87	2.10E+01	11.49	8.00E+00	2.12

M
m

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CP-5025 10-15

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

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 6/16/2016 7:07:35AM

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	45.24	40 -	48	1.51E+02	74.74	7.69E+02	5.80E+01
2	63.40	60 -	65	1.26E+02	62.19	6.75E+02	4.77E+01
3	76.25	69 -	80	5.62E+02	124.23	1.64E+03	9.44E+01
M	4	81 -	95	1.77E+02	84.56	9.73E+02	5.13E+01
m	5	81 -	95	2.08E+02	76.34	7.24E+02	4.42E+01
6	129.37	125 -	131	5.99E+01	56.05	5.26E+02	4.43E+01
7	185.95	181 -	188	8.28E+01	54.99	4.50E+02	4.27E+01
8	199.01	195 -	201	4.19E+01	45.53	3.34E+02	3.59E+01
9	239.38	232 -	244	5.16E+02	78.74	4.83E+02	5.29E+01
10	295.66	289 -	298	4.41E+01	51.92	3.60E+02	4.13E+01
11	338.48	334 -	341	9.12E+01	37.89	1.76E+02	2.69E+01
12	352.01	344 -	356	1.98E+02	53.79	2.48E+02	3.77E+01
13	451.83	448 -	455	2.80E+01	23.32	7.20E+01	1.71E+01
14	466.02	456 -	478	6.37E+01	61.92	2.69E+02	4.92E+01
15	510.41	503 -	517	9.41E+01	47.99	2.04E+02	3.61E+01
16	536.74	534 -	539	1.53E+01	17.44	4.95E+01	1.28E+01
17	582.97	577 -	586	1.41E+02	31.37	5.93E+01	1.68E+01
18	608.91	603 -	614	1.05E+02	37.84	1.28E+02	2.62E+01
19	785.64	781 -	790	3.15E+01	21.86	5.09E+01	1.54E+01
20	794.83	790 -	798	3.48E+01	21.42	4.83E+01	1.47E+01
21	862.19	853 -	873	4.19E+01	40.11	1.14E+02	3.12E+01
22	911.34	906 -	915	6.96E+01	28.91	7.88E+01	1.94E+01
23	968.88	963 -	973	5.44E+01	27.37	6.92E+01	1.90E+01
24	1052.36	1047 -	1056	2.15E+01	18.19	3.50E+01	1.29E+01
25	1094.12	1088 -	1100	2.50E+01	22.09	4.61E+01	1.62E+01
26	1119.89	1115 -	1125	2.46E+01	25.91	7.49E+01	2.37E+01
27	1374.95	1371 -	1378	1.11E+01	10.77	1.18E+01	6.96E+00
28	1460.49	1453 -	1465	2.41E+02	34.37	2.41E+01	1.21E+01
29	1763.60	1757 -	1768	2.50E+01	10.00	0.00E+00	0.00E+00
30	2516.30	2514 -	2519	5.00E+00	4.47	0.00E+00	0.00E+00
31	2614.10	2611 -	2618	2.10E+01	11.49	8.00E+00	5.70E+00

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

PEAK WITH NID REPORT

Peak Analysis Performed on : 6/16/2016 7:07:35AM

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	45.24	40 -	48	44.50	1.51E+02	74.74	7.69E+02	.....
2	63.40	60 -	65	62.66	1.26E+02	62.19	6.75E+02	TH-234
								TH-230
3	76.25	69 -	80	75.52	5.62E+02	124.23	1.64E+03	.....
M 4	86.83	81 -	95	86.10	1.77E+02	84.56	9.73E+02	NP-237
								EU-155
								SN-126
m 5	93.31	81 -	95	92.59	2.08E+02	76.34	7.24E+02	GA-67
6	129.37	125 -	131	128.66	5.99E+01	56.05	5.26E+02	.....
7	185.95	181 -	188	185.26	8.28E+01	54.99	4.50E+02	RA-226
8	199.01	195 -	201	198.33	4.19E+01	45.53	3.34E+02	.....
9	239.38	232 -	244	238.71	5.16E+02	78.74	4.83E+02	PB-212
10	295.66	289 -	298	295.02	4.41E+01	51.92	3.60E+02	PB-214
11	338.48	334 -	341	337.86	9.12E+01	37.89	1.76E+02	AC-228
12	352.01	344 -	356	351.40	1.98E+02	53.79	2.48E+02	PB-214
13	451.83	448 -	455	451.26	2.80E+01	23.32	7.20E+01	.....
14	466.02	456 -	478	465.46	6.37E+01	61.92	2.69E+02	.....
15	510.41	503 -	517	509.87	9.41E+01	47.99	2.04E+02	.....
16	536.74	534 -	539	536.21	1.53E+01	17.44	4.95E+01	BA-140
17	582.97	577 -	586	582.47	1.41E+02	31.37	5.93E+01	TL-208
18	608.91	603 -	614	608.41	1.05E+02	37.84	1.28E+02	BI-214
19	785.64	781 -	790	785.24	3.15E+01	21.86	5.09E+01	.....
20	794.83	790 -	798	794.43	3.48E+01	21.42	4.83E+01	.....
21	862.19	853 -	873	861.82	4.19E+01	40.11	1.14E+02	.....
22	911.34	906 -	915	911.00	6.96E+01	28.91	7.88E+01	AC-228
								LU-172
23	968.88	963 -	973	968.57	5.44E+01	27.37	6.92E+01	AC-228
24	1052.36	1047 -	1056	1052.10	2.15E+01	18.19	3.50E+01	.....
25	1094.12	1088 -	1100	1093.88	2.50E+01	22.09	4.61E+01	LU-172
26	1119.89	1115 -	1125	1119.66	2.46E+01	25.91	7.49E+01	BI-214

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Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
								SC-46
27	1374.95	1371 -	1378	1374.87	1.11E+01	10.77	1.18E+01	.....
28	1460.49	1453 -	1465	1460.47	2.41E+02	34.37	2.41E+01	K-40
29	1763.60	1757 -	1768	1763.76	2.50E+01	10.00	0.00E+00	BI-214
30	2516.30	2514 -	2519	2517.00	5.00E+00	4.47	0.00E+00	.....
31	2614.10	2611 -	2618	2614.87	2.10E+01	11.49	8.00E+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 7:07:35AM

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty	
M	1	45.24	1.51E+02	74.74	2.65E-02	1.78E-03
	2	63.40	1.26E+02	62.19	2.32E-02	1.76E-03
	3	76.25	5.62E+02	124.23	2.12E-02	1.69E-03
m	4	86.83	1.77E+02	84.56	1.98E-02	1.64E-03
	5	93.31	2.08E+02	76.34	1.90E-02	1.62E-03
	6	129.37	5.99E+01	56.05	1.53E-02	1.47E-03
	7	185.95	8.28E+01	54.99	1.16E-02	1.15E-03
	8	199.01	4.19E+01	45.53	1.10E-02	1.11E-03
	9	239.38	5.16E+02	78.74	9.39E-03	9.85E-04
	10	295.66	4.41E+01	51.92	7.77E-03	8.43E-04
	11	338.48	9.12E+01	37.89	6.86E-03	7.95E-04
	12	352.01	1.98E+02	53.79	6.61E-03	7.80E-04
	13	451.83	2.80E+01	23.32	5.20E-03	6.48E-04
	14	466.02	6.37E+01	61.92	5.04E-03	6.27E-04
	15	510.41	9.41E+01	47.99	4.61E-03	5.62E-04
	16	536.74	1.53E+01	17.44	4.39E-03	5.23E-04
	17	582.97	1.41E+02	31.37	4.05E-03	4.56E-04
	18	608.91	1.05E+02	37.84	3.88E-03	4.18E-04
	19	785.64	3.15E+01	21.86	3.02E-03	2.71E-04
	20	794.83	3.48E+01	21.42	2.98E-03	2.66E-04
	21	862.19	4.19E+01	40.11	2.75E-03	2.28E-04
	22	911.34	6.96E+01	28.91	2.61E-03	2.06E-04
	23	968.88	5.44E+01	27.37	2.46E-03	1.99E-04
	24	1052.36	2.15E+01	18.19	2.27E-03	1.88E-04

Analysis Report for 1606040-15
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Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
25	1094.12	2.50E+01	22.09	2.19E-03	1.83E-04
26	1119.89	2.46E+01	25.91	2.14E-03	1.79E-04
27	1374.95	1.11E+01	10.77	1.78E-03	2.07E-04
28	1460.49	2.41E+02	34.37	1.68E-03	1.89E-04
29	1763.60	2.50E+01	10.00	1.44E-03	1.26E-04
30	2516.30	5.00E+00	4.47	1.10E-03	1.11E-04
31	2614.10	2.10E+01	11.49	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 7:07:35AM

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	45.24	1.51E+02	74.74		1.51E+02	7.47E+01
	2	63.40	1.26E+02	62.19	3.84E+01	8.73E+01	6.26E+01
	3	76.25	5.62E+02	124.23		5.62E+02	1.24E+02
M	4	86.83	1.77E+02	84.56		1.77E+02	8.46E+01
m	5	93.31	2.08E+02	76.34	5.93E+01	1.48E+02	7.69E+01
	6	129.37	5.99E+01	56.05		5.99E+01	5.61E+01
	7	185.95	8.28E+01	54.99	2.90E+01	5.38E+01	5.55E+01
	8	199.01	4.19E+01	45.53		4.19E+01	4.55E+01
	9	239.38	5.16E+02	78.74	7.10E+00	5.09E+02	7.89E+01
	10	295.66	4.41E+01	51.92		4.41E+01	5.19E+01
	11	338.48	9.12E+01	37.89		9.12E+01	3.79E+01
	12	352.01	1.98E+02	53.79	1.61E+00	1.96E+02	5.40E+01
	13	451.83	2.80E+01	23.32		2.80E+01	2.33E+01
	14	466.02	6.37E+01	61.92		6.37E+01	6.19E+01
	15	510.41	9.41E+01	47.99	4.57E+01	4.84E+01	4.83E+01
	16	536.74	1.53E+01	17.44		1.53E+01	1.74E+01
	17	582.97	1.41E+02	31.37	2.37E+00	1.39E+02	3.16E+01
	18	608.91	1.05E+02	37.84		1.05E+02	3.78E+01
	19	785.64	3.15E+01	21.86		3.15E+01	2.19E+01
	20	794.83	3.48E+01	21.42		3.48E+01	2.14E+01
	21	862.19	4.19E+01	40.11		4.19E+01	4.01E+01
	22	911.34	6.96E+01	28.91		6.96E+01	2.89E+01
	23	968.88	5.44E+01	27.37		5.44E+01	2.74E+01

Analysis Report for 1606040-15
CP-5025 10-15

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
24	1052.36	2.15E+01	18.19			2.15E+01	1.82E+01
25	1094.12	2.50E+01	22.09			2.50E+01	2.21E+01
26	1119.89	2.46E+01	25.91			2.46E+01	2.59E+01
27	1374.95	1.11E+01	10.77			1.11E+01	1.08E+01
28	1460.49	2.41E+02	34.37	9.79E-01	1.85E+00	2.40E+02	3.44E+01
29	1763.60	2.50E+01	10.00			2.50E+01	1.00E+01
30	2516.30	5.00E+00	4.47			5.00E+00	4.47E+00
31	2614.10	2.10E+01	11.49			2.10E+01	1.15E+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 7:07:35AM
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	45.24	1.51E+02	74.74			1.51E+02	7.47E+01
2	63.40	1.26E+02	62.19	3.84E+01	6.93E+00	8.73E+01	6.26E+01
3	76.25	5.62E+02	124.23			5.62E+02	1.24E+02
M	4	86.83	1.77E+02	84.56		1.77E+02	8.46E+01
m	5	93.31	2.08E+02	76.34	5.93E+01	9.62E+00	1.48E+02
6	129.37	5.99E+01	56.05			5.99E+01	5.61E+01
7	185.95	8.28E+01	54.99	2.90E+01	7.24E+00	5.38E+01	5.55E+01
8	199.01	4.19E+01	45.53			4.19E+01	4.55E+01
9	239.38	5.16E+02	78.74	7.10E+00	5.46E+00	5.09E+02	7.89E+01
10	295.66	4.41E+01	51.92			4.41E+01	5.19E+01
11	338.48	9.12E+01	37.89			9.12E+01	3.79E+01
12	352.01	1.98E+02	53.79	1.61E+00	4.34E+00	1.96E+02	5.40E+01
13	451.83	2.80E+01	23.32			2.80E+01	2.33E+01
14	466.02	6.37E+01	61.92			6.37E+01	6.19E+01
15	510.41	9.41E+01	47.99	4.57E+01	5.07E+00	4.84E+01	4.83E+01
16	536.74	1.53E+01	17.44			1.53E+01	1.74E+01
17	582.97	1.41E+02	31.37	2.37E+00	3.72E+00	1.39E+02	3.16E+01
18	608.91	1.05E+02	37.84			1.05E+02	3.78E+01
19	785.64	3.15E+01	21.86			3.15E+01	2.19E+01
20	794.83	3.48E+01	21.42			3.48E+01	2.14E+01

Analysis Report for 1606040-15
CP-5025 10-15

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
21	862.19	4.19E+01	40.11			4.19E+01	4.01E+01
22	911.34	6.96E+01	28.91			6.96E+01	2.89E+01
23	968.88	5.44E+01	27.37			5.44E+01	2.74E+01
24	1052.36	2.15E+01	18.19			2.15E+01	1.82E+01
25	1094.12	2.50E+01	22.09			2.50E+01	2.21E+01
26	1119.89	2.46E+01	25.91			2.46E+01	2.59E+01
27	1374.95	1.11E+01	10.77			1.11E+01	1.08E+01
28	1460.49	2.41E+02	34.37	9.79E-01	1.85E+00	2.40E+02	3.44E+01
29	1763.60	2.50E+01	10.00			2.50E+01	1.00E+01
30	2516.30	5.00E+00	4.47			5.00E+00	4.47E+00
31	2614.10	2.10E+01	11.49			2.10E+01	1.15E+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	0.984	1460.81 *	10.67	3.32E+01	6.08E+00
GA-67	0.551	93.31 *	35.70	1.01E+01	2.19E+01
		208.95	2.24		
		300.22	16.00		
SN-126	0.916	87.57 *	37.00	6.01E-01	2.91E-01
EU-155	0.371	86.50 *	30.90	7.23E-01	3.51E-01
		105.30	20.70		
TL-208	0.860	583.14 *	30.22	2.82E+00	7.15E-01
		860.37	4.48		
		2614.66 *	35.85	1.36E+00	7.55E-01
PB-212	0.817	238.63 *	44.60	3.02E+00	5.65E-01
		300.09	3.41		
BI-214	0.893	609.31 *	46.30	1.45E+00	5.46E-01
		1120.29 *	15.10	1.88E+00	1.99E+00
		1764.49 *	15.80	2.74E+00	1.12E+00
		2204.22	4.98		
PB-214	0.988	295.21 *	19.19	7.33E-01	8.68E-01
		351.92 *	37.19	1.98E+00	5.93E-01
RA-226	0.989	186.21 *	3.28	3.50E+00	7.36E+00
AC-228	0.991	338.32 *	11.40	2.90E+00	1.25E+00

Analysis Report for 1606040-15
CP-5025 10-15

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
AC-228	0.991	911.07 *	27.70	2.39E+00	1.01E+00
		969.11 *	16.60	3.31E+00	1.69E+00
TH-234	0.998	63.29 *	3.80	2.45E+00	1.77E+00
NP-237	0.983	86.50 *	12.60	1.76E+00	8.55E-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 7:07:35AM
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	45.24	4.20621E-02	24.68		
3	76.25	1.56186E-01	11.05		
6	129.37	1.66280E-02	46.82		
8	199.01	1.16467E-02	54.30		
13	451.83	7.77778E-03	41.65		
14	466.02	1.76992E-02	48.59		
15	510.41	1.34440E-02	49.85		
16	536.74	4.23611E-03	57.17	Tol.	BA-140
19	785.64	8.75731E-03	34.67		
20	794.83	9.67985E-03	30.73	Sum	
21	862.19	1.16372E-02	47.87		
24	1052.36	5.97578E-03	42.29		
25	1094.12	6.93576E-03	44.23	Tol.	LU-172
27	1374.95	3.08007E-03	48.57		
30	2516.30	1.38889E-03	44.72		

M = First peak in a multiplet region

m = Other peak in a multiplet region

F = Fitted singlet

Errors quoted at 2.000sigma

Analysis Report for 1606040-15
CP-5025 10-15

NUCLIDE IDENTIFICATION REPORT

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

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.98	1460.81	*	10.67	3.32E+01	6.08E+00
GA-67	0.55	93.31	*	35.70	1.01E+01	2.19E+01
		208.95		2.24		
		300.22		16.00		
SN-126	0.91	87.57	*	37.00	6.01E-01	2.91E-01
EU-155	0.37	86.50	*	30.90	7.23E-01	3.51E-01
		105.30		20.70		
TL-208	0.86	583.14	*	30.22	2.82E+00	7.15E-01
		860.37		4.48		
		2614.66	*	35.85	1.36E+00	7.55E-01
PB-212	0.81	238.63	*	44.60	3.02E+00	5.65E-01
		300.09		3.41		
BI-214	0.89	609.31	*	46.30	1.45E+00	5.46E-01
		1120.29	*	15.10	1.88E+00	1.99E+00
		1764.49	*	15.80	2.74E+00	1.12E+00
		2204.22		4.98		
PB-214	0.98	295.21	*	19.19	7.33E-01	8.68E-01
		351.92	*	37.19	1.98E+00	5.93E-01
RA-226	0.98	186.21	*	3.28	3.50E+00	7.36E+00
AC-228	0.99	338.32	*	11.40	2.90E+00	1.25E+00
		911.07	*	27.70	2.39E+00	1.01E+00
		969.11	*	16.60	3.31E+00	1.69E+00
TH-234	0.99	63.29	*	3.80	2.45E+00	1.77E+00
NP-237	0.98	86.50	*	12.60	1.76E+00	8.55E-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 1606040-15
CP-5025 10-15

INTERFERENCE CORRECTED REPORT

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
K-40	0.984	3.32E+01	6.08E+00	
GA-67	0.551	1.01E+01	2.19E+01	
? SN-126	0.916	6.01E-01	2.91E-01	
? EU-155	0.371	7.23E-01	3.51E-01	
TL-208	0.860	2.13E+00	5.19E-01	
PB-212	0.817	3.02E+00	5.65E-01	
BI-214	0.893	1.71E+00	4.77E-01	
PB-214	0.988	1.59E+00	4.90E-01	
RA-226	0.989	3.50E+00	7.36E+00	
AC-228	0.991	2.72E+00	7.12E-01	
TH-234	0.998	2.45E+00	1.77E+00	
? NP-237	0.983	1.76E+00	8.55E-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 1606040-15
CP-5025 10-15

UNIDENTIFIED PEAKS

Peak Locate Performed on : 6/16/2016 7:07:35AM
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	45.24	4.20621E-02	24.68		
3	76.25	1.56186E-01	11.05		
6	129.37	1.66280E-02	46.82		
8	199.01	1.16467E-02	54.30		
13	451.83	7.77778E-03	41.65		
14	466.02	1.76992E-02	48.59		
15	510.41	1.34440E-02	49.85		
16	536.74	4.23611E-03	57.17	Tol.	BA-140
19	785.64	8.75731E-03	34.67		
20	794.83	9.67985E-03	30.73	Sum	
21	862.19	1.16372E-02	47.87		
24	1052.36	5.97578E-03	42.29		
25	1094.12	6.93576E-03	44.23	Tol.	LU-172
27	1374.95	3.08007E-03	48.57		
30	2516.30	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	2.36E-01	2.42E+00	2.42E+00
+	NA-22	1274.54	99.94	-2.51E-02	3.60E-01	3.60E-01

Analysis Report for 1606040-15
CP-5025 10-15

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	NA-24	1368.53	99.99	-3.22E+05	7.20E+05	9.46E+05
		2754.09	99.86	9.78E+04		7.20E+05
+	AL-26	1808.65	99.76	-1.51E-02	2.95E-01	2.95E-01
+	K-40	1460.81	* 10.67	3.32E+01	3.78E+00	3.78E+00
+	@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88	94.40	-2.99E-02	1.46E-01	1.46E-01
		78.34	96.00	4.13E-01		1.95E-01
+	SC-46	889.25	99.98	-2.92E-02	3.15E-01	3.15E-01
		1120.51	99.99	2.79E-01		4.95E-01
+	V-48	983.52	99.98	1.03E-01	5.60E-01	5.90E-01
		1312.10	97.50	-1.88E-01		5.60E-01
+	CR-51	320.08	9.83	-3.94E-01	2.72E+00	2.72E+00
+	MN-54	834.83	99.97	3.88E-02	3.18E-01	3.18E-01
+	CO-56	846.75	99.96	8.72E-02	3.32E-01	3.32E-01
		1037.75	14.03	-3.09E-03		2.37E+00
		1238.25	67.00	1.71E-01		6.47E-01
		1771.40	15.51	-5.68E-01		1.78E+00
		2598.48	16.90	-6.68E-01		1.43E+00
+	CO-57	122.06	85.51	7.45E-02	1.78E-01	1.78E-01
		136.48	10.60	-8.32E-01		1.44E+00
+	CO-58	810.76	99.40	-3.12E-02	3.38E-01	3.38E-01
+	FE-59	1099.22	56.50	-1.66E-02	7.02E-01	7.02E-01
		1291.56	43.20	3.03E-01		1.00E+00
+	CO-60	1173.22	100.00	-4.86E-03	3.28E-01	3.43E-01
		1332.49	100.00	3.29E-02		3.28E-01
+	ZN-65	1115.52	50.75	4.92E-03	8.02E-01	8.02E-01
+	GA-67	93.31	* 35.70	1.01E+01	1.30E+01	1.30E+01
		208.95	2.24	1.58E+02		1.60E+02
		300.22	16.00	7.91E+00		2.45E+01
+	SE-75	121.11	16.70	1.57E-01	2.68E-01	9.41E-01
		136.00	59.20	-8.63E-02		2.68E-01
		264.65	59.80	-9.93E-02		3.38E-01
		279.53	25.20	3.95E-02		8.03E-01
		400.65	11.40	1.13E+00		2.09E+00
+	RB-82	776.52	13.00	-1.14E+00	2.92E+00	2.92E+00
+	RB-83	520.41	46.00	9.04E-02	5.39E-01	5.39E-01
		529.64	30.30	-9.97E-02		7.18E-01
		552.65	16.40	-4.54E-01		1.55E+00
+	KR-85	513.99	0.43	7.66E+01	7.23E+01	7.23E+01
+	SR-85	513.99	99.27	3.87E-01	3.65E-01	3.65E-01
+	Y-88	898.02	93.40	-9.81E-02	2.36E-01	3.23E-01
		1836.01	99.38	5.90E-02		2.36E-01
+	NB-93M	16.57	9.43	1.86E+00	7.99E-01	7.99E-01
+	NB-94	702.63	100.00	6.22E-02	2.60E-01	3.01E-01
		871.10	100.00	5.46E-03		2.60E-01
+	NB-95	765.79	99.81	1.23E-01	4.06E-01	4.06E-01
+	NB-95M	235.69	25.00	3.67E+01	1.66E+01	1.66E+01

Analysis Report for 1606040-15
CP-5025 10-15

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	ZR-95	724.18	43.70	6.05E-02	5.65E-01	7.25E-01
		756.72	55.30	1.37E-01		5.65E-01
+	MO-99	181.06	6.20	-1.09E+01	5.59E+01	8.31E+01
		739.58	12.80	-1.47E+01		5.59E+01
		778.00	4.50	-5.49E+01		1.74E+02
+	RU-103	497.08	89.00	-3.73E-02	2.97E-01	2.97E-01
+	RU-106	621.84	9.80	-7.63E-01	2.37E+00	2.37E+00
+	AG-108M	433.93	89.90	-5.27E-02	2.07E-01	2.07E-01
		614.37	90.40	8.14E-02		3.35E-01
		722.95	90.50	-1.08E-02		2.93E-01
+	CD-109	88.03	3.72	6.05E-01	4.56E+00	4.56E+00
+	AG-110M	657.75	93.14	5.05E-02	2.89E-01	2.89E-01
		677.61	10.53	-2.64E-01		2.57E+00
		706.67	16.46	4.83E-01		1.88E+00
		763.93	21.98	-1.44E-01		1.34E+00
		884.67	71.63	2.21E-01		4.26E-01
		1384.27	23.94	-1.41E-01		1.34E+00
+	CD-113M	263.70	0.02	-4.99E+02	7.88E+02	7.88E+02
+	SN-113	255.12	1.93	-1.99E+00	3.16E-01	9.72E+00
		391.69	64.90	-2.29E-01		3.16E-01
+	TE123M	159.00	84.10	7.67E-02	2.09E-01	2.09E-01
+	SB-124	602.71	97.87	-4.78E-03	2.75E-01	2.75E-01
		645.85	7.26	8.28E-01		4.14E+00
		722.78	11.10	-3.87E-01		2.69E+00
		1691.02	49.00	-9.99E-02		3.71E-01
+	I-125	35.49	6.49	-2.29E-01	1.51E+00	1.51E+00
+	SB-125	176.33	6.89	-3.91E-01	6.66E-01	2.24E+00
		427.89	29.33	-7.34E-02		6.66E-01
		463.38	10.35	9.95E-01		2.25E+00
		600.56	17.80	1.72E-02		1.26E+00
		635.90	11.32	-3.72E-01		2.06E+00
+	SB-126	414.70	83.30	-1.24E-02	5.44E-01	5.75E-01
		666.33	99.60	-2.53E-01		5.44E-01
		695.00	99.60	-1.28E-02		5.77E-01
		720.50	53.80	-7.63E-01		9.61E-01
+	SN-126	87.57	* 37.00	6.01E-01	6.55E-01	6.55E-01
+	SB-127	473.00	25.00	-3.81E-01	8.72E+00	9.97E+00
		685.20	35.70	1.25E+00		8.72E+00
		783.80	14.70	-3.13E+00		2.35E+01
+	I-129	29.78	57.00	-1.23E-02	1.44E-01	1.44E-01
		33.60	13.20	1.04E-01		6.28E-01
		39.58	7.52	-1.78E-01		1.18E+00
+	I-131	284.30	6.05	2.45E+00	8.01E-01	1.04E+01
		364.48	81.20	6.57E-02		8.01E-01
		636.97	7.26	-2.40E+00		1.04E+01
		722.89	1.80	-6.65E+00		4.62E+01
+	TE-132	49.72	13.10	-1.20E+00	3.76E+00	1.52E+01
		228.16	88.00	1.66E-01		3.76E+00

Analysis Report for 1606040-15
CP-5025 10-15

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)		
+	BA-133	81.00	33.00	-2.98E-01	4.70E-01	5.30E-01		
		302.84	17.80	8.08E-01		1.17E+00		
		356.01	60.00	-3.92E-02		4.70E-01		
+	I-133	529.87	86.30	-1.83E+03	1.32E+04	1.32E+04		
+	XE-133	81.00	38.00	-1.59E+00	2.82E+00	2.82E+00		
+		CS-134	563.23	8.38		1.28E+00	2.94E-01	2.88E+00
			569.32	15.43		2.15E-01	1.46E+00	
			604.70	97.60		-3.15E-02	2.94E-01	
			795.84	85.40		1.52E-01	3.74E-01	
	801.93	8.73	-1.13E+00	3.02E+00				
+	CS-135	268.24	16.00	4.13E-01	1.22E+00	1.22E+00		
+	I-135	1131.51	22.50	2.08E+14	1.20E+15	1.55E+15		
		1260.41	28.60	1.76E+14		1.20E+15		
		1678.03	9.54	1.35E+15		2.91E+15		
+	CS-136	153.22	7.46	-6.24E-01	6.25E-01	4.36E+00		
		163.89	4.61	-1.11E+00		7.18E+00		
		176.55	13.56	-4.06E-01		2.33E+00		
		273.65	12.66	6.14E-01		3.20E+00		
		340.57	48.50	-3.16E-02		1.03E+00		
		818.50	99.70	1.61E-01		6.25E-01		
		1048.07	79.60	1.17E-02		7.82E-01		
		1235.34	19.70	1.59E+00		4.06E+00		
+		CS-137	661.65	85.12		6.62E-02	3.17E-01	3.17E-01
+		LA-138	788.74	34.00		-3.63E-01	3.99E-01	8.97E-01
	1435.80		66.00	-7.13E-02	3.99E-01			
+	CE-139	165.85	80.35	2.13E-02	2.16E-01	2.16E-01		
+	BA-140	162.64	6.70	-1.46E-01	1.80E+00	5.06E+00		
		304.84	4.50	6.26E+00		9.46E+00		
		423.70	3.20	-3.04E+00		1.30E+01		
		437.55	2.00	-6.94E+00		1.93E+01		
		537.32	25.00	-8.89E-02		1.80E+00		
+	LA-140	328.77	20.50	5.78E-01	6.60E-01	2.12E+00		
		487.03	45.50	-1.68E-02		9.96E-01		
		815.85	23.50	6.31E-01		2.77E+00		
		1596.49	95.49	1.60E-01		6.60E-01		
+	CE-141	145.44	48.40	-2.00E-02	4.22E-01	4.22E-01		
+	CE-143	57.36	11.80	-3.99E+02	5.43E+02	9.69E+02		
		293.26	42.00	2.92E+02		5.43E+02		
		664.55	5.20	3.69E+02		5.30E+03		
+	CE-144	133.54	10.80	-7.14E-01	1.45E+00	1.45E+00		
+	PM-144	476.78	42.00	1.54E-02	2.50E-01	5.12E-01		
		618.01	98.60	1.10E-02		2.50E-01		
		696.49	99.49	-5.05E-02		2.74E-01		
+	PM-145	36.85	21.70	-8.33E-02	2.12E-01	3.86E-01		
		37.36	39.70	-5.43E-02		2.12E-01		
		42.30	15.10	-1.17E-01		6.55E-01		
		72.40	2.31	1.38E+01		7.59E+00		
+	PM-146	453.90	39.94	-4.57E-02	4.96E-01	4.96E-01		
		735.90	14.01	-5.95E-01		1.51E+00		

Analysis Report for 1606040-15
CP-5025 10-15

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	PM-146	747.13	13.10	-2.80E-02	4.96E-01	2.04E+00
+	ND-147	91.11	28.90	2.52E+00	1.43E+00	1.43E+00
		531.02	13.10	7.31E-01		3.58E+00
+	PM-149	285.90	3.10	1.53E+02	4.57E+02	4.57E+02
+	EU-152	121.78	20.50	3.00E-01	7.18E-01	7.18E-01
		244.69	5.40	-3.69E-01		4.08E+00
		344.27	19.13	-3.93E-02		1.00E+00
		778.89	9.20	-8.49E-01		2.69E+00
		964.01	10.40	-4.48E-01		3.72E+00
		1085.78	7.22	9.33E-01		3.98E+00
		1112.02	9.60	7.77E-01		3.68E+00
		1407.95	14.94	4.63E-01		2.15E+00
+	GD-153	97.43	31.30	-2.53E-01	4.78E-01	4.78E-01
		103.18	22.20	-1.79E-01		6.15E-01
+	EU-154	123.07	40.50	1.10E-01	3.65E-01	3.65E-01
		723.30	19.70	-4.96E-02		1.35E+00
		873.19	11.50	-5.31E-02		2.21E+00
		996.32	10.30	1.37E-01		2.97E+00
		1004.76	17.90	6.45E-01		1.86E+00
		1274.45	35.50	-7.02E-02		1.01E+00
+	EU-155	86.50	* 30.90	7.23E-01	6.47E-01	7.88E-01
		105.30	20.70	-4.37E-02		6.47E-01
+	EU-156	811.77	10.40	-4.17E-01	5.29E+00	5.29E+00
		1153.47	7.20	-4.75E-01		9.47E+00
		1230.71	8.90	-5.71E+00		7.49E+00
+	HO-166M	184.41	72.60	2.08E-01	2.56E-01	2.56E-01
		280.45	29.60	1.53E-01		6.48E-01
		410.94	11.10	-3.36E-01		1.96E+00
		711.69	54.10	-1.45E-01		4.96E-01
+	TM-171	66.72	0.14	-2.03E+01	1.00E+02	1.00E+02
+	HF-172	81.75	4.52	-1.00E+01	1.39E+00	3.66E+00
		125.81	11.30	5.54E-03		1.39E+00
+	LU-172	181.53	20.60	5.57E-02	2.35E+00	3.42E+00
		810.06	16.63	-6.73E-01		7.30E+00
		912.12	15.25	1.61E+01		1.30E+01
		1093.66	62.50	1.13E+00		2.35E+00
+	LU-173	100.72	5.24	-2.61E+00	9.49E-01	2.57E+00
		272.11	21.20	2.37E-01		9.49E-01
+	HF-175	343.40	84.00	-1.02E-02	2.73E-01	2.73E-01
+	LU-176	88.34	13.30	7.53E-01	2.04E-01	1.26E+00
		201.83	86.00	-1.69E-02		2.10E-01
		306.78	94.00	-2.76E-02		2.04E-01
+	TA-182	67.75	41.20	-7.44E-02	3.63E-01	3.63E-01
		1121.30	34.90	5.83E-01		1.34E+00
		1189.05	16.23	-5.84E-01		2.17E+00
		1221.41	26.98	-2.70E-02		1.80E+00
		1231.02	11.44	-2.58E+00		3.38E+00
+	IR-192	308.46	29.68	-8.39E-02	4.99E-01	7.15E-01
		468.07	48.10	-1.65E-01		4.99E-01

Analysis Report for 1606040-15
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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	HG-203	279.19	77.30	1.46E-02	2.96E-01	2.96E-01
+	BI-207	569.67	97.72	3.36E-02	2.28E-01	2.28E-01
		1063.62	74.90	5.77E-02		3.76E-01
+	TL-208	583.14	* 30.22	2.82E+00	7.57E-01	7.57E-01
		860.37	4.48	3.63E+00		7.28E+00
		2614.66	* 35.85	1.36E+00		9.11E-01
+	BI-210M	262.00	45.00	-9.08E-02	3.99E-01	3.99E-01
		300.00	23.00	1.24E-01		1.01E+00
+	PB-210	46.50	4.25	-4.63E-01	2.48E+00	2.48E+00
+	PB-211	404.84	2.90	-3.94E+00	7.25E+00	7.25E+00
		831.96	2.90	-2.70E+00		1.05E+01
+	BI-212	727.17	11.80	2.00E+00	2.47E+00	2.47E+00
		1620.62	2.75	3.24E+00		8.80E+00
+	PB-212	238.63	* 44.60	3.02E+00	6.47E-01	6.47E-01
		300.09	3.41	8.35E-01		6.79E+00
+	BI-214	609.31	* 46.30	1.45E+00	2.96E-01	7.61E-01
		1120.29	* 15.10	1.88E+00		3.85E+00
		1764.49	* 15.80	2.74E+00		2.96E-01
		2204.22	4.98	2.62E+00		7.20E+00
+	PB-214	295.21	* 19.19	7.33E-01	7.94E-01	1.42E+00
		351.92	* 37.19	1.98E+00		7.94E-01
+	RN-219	401.80	6.50	1.36E+00	3.36E+00	3.36E+00
+	RA-223	323.87	3.88	9.95E-01	5.26E+00	5.26E+00
+	RA-224	240.98	3.95	3.27E+01	8.27E+00	8.27E+00
+	RA-225	40.00	31.00	-8.24E-02	5.45E-01	5.45E-01
+	RA-226	186.21	* 3.28	3.50E+00	5.91E+00	5.91E+00
+	TH-227	50.10	8.40	-1.01E-01	1.29E+00	1.29E+00
		236.00	11.50	5.73E+00		2.59E+00
		256.20	6.30	-1.12E+00		2.74E+00
+	AC-228	338.32	* 11.40	2.90E+00	1.43E+00	1.80E+00
		911.07	* 27.70	2.39E+00		1.43E+00
		969.11	* 16.60	3.31E+00		2.47E+00
+	TH-230	48.44	16.90	4.71E-02	6.40E-01	6.40E-01
		62.85	4.60	1.78E+00		2.85E+00
		67.67	0.37	-7.62E+00		3.71E+01
+	PA-231	283.67	1.60	-1.65E+00	8.99E+00	1.18E+01
		302.67	2.30	6.23E+00		8.99E+00
+	TH-231	25.64	14.70	-2.82E-01	5.51E-01	5.51E-01
		84.21	6.40	-6.69E+00		2.45E+00
+	PA-233	311.98	38.60	-4.17E-01	6.45E-01	6.45E-01
+	PA-234	131.20	20.40	-6.57E-02	7.63E-01	7.63E-01
		733.99	8.80	-7.97E-01		2.54E+00
		946.00	12.00	-3.29E-01		2.28E+00
+	PA-234M	1001.03	0.92	2.72E+01	3.84E+01	3.84E+01
+	TH-234	63.29	* 3.80	2.45E+00	2.84E+00	2.84E+00
+	U-235	143.76	10.50	-1.96E-01	1.44E+00	1.44E+00
		163.35	4.70	-5.28E-01		3.41E+00

Analysis Report for 1606040-15
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	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	U-235	205.31		4.70	1.58E-01	1.44E+00	3.83E+00
+	NP-237	86.50	*	12.60	1.76E+00	1.92E+00	1.92E+00
+	NP-239	106.10		22.70	-2.26E+00	3.35E+01	3.35E+01
		228.18		10.70	-1.79E+01		9.22E+01
		277.60		14.10	-9.86E+00		7.66E+01
+	AM-241	59.54		35.90	-4.94E-02	3.50E-01	3.50E-01
+	AM-243	74.67		66.00	9.79E-01	2.85E-01	2.85E-01
+	CM-243	209.75		3.29	4.88E+00	1.36E+00	5.90E+00
		228.14		10.60	7.46E-02		1.69E+00
		277.60		14.00	-1.75E-01		1.36E+00

- + = Nuclide identified during the nuclide identification
 * = Energy line found in the spectrum
 > = MDA value not calculated
 @ = Half-life too short to be able to perform the decay correction
 ? = CAUTION: MDA value is inconsistent with Currie MDA at 95% confidence level

NUCLIDE MDA REPORT

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

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	BE-7	477.59		10.42	2.42E+00	2.42E+00	2.36E-01	1.13E+00
	NA-22	1274.54		99.94	3.60E-01	3.60E-01	-2.51E-02	1.62E-01
	NA-24	1368.53		99.99	9.46E+05	7.20E+05	-3.22E+05	3.96E+05
		2754.09		99.86	7.20E+05		9.78E+04	2.28E+05
	AL-26	1808.65		99.76	2.95E-01	2.95E-01	-1.51E-02	1.24E-01
+	K-40	1460.81	*	10.67	3.78E+00	3.78E+00	3.32E+01	1.70E+00
@	AR-41	1293.64		99.16	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	TI-44	67.88		94.40	1.46E-01	1.46E-01	-2.99E-02	7.13E-02
		78.34		96.00	1.95E-01		4.13E-01	9.56E-02
	SC-46	889.25		99.98	3.15E-01	3.15E-01	-2.92E-02	1.43E-01
		1120.51		99.99	4.95E-01		2.79E-01	2.30E-01
	V-48	983.52		99.98	5.90E-01	5.60E-01	1.03E-01	2.70E-01
		1312.10		97.50	5.60E-01		-1.88E-01	2.46E-01

Analysis Report for 1606040-15
CP-5025 10-15

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
CR-51	320.08	9.83	2.72E+00	2.72E+00	-3.94E-01	1.29E+00
MN-54	834.83	99.97	3.18E-01	3.18E-01	3.88E-02	1.47E-01
CO-56	846.75	99.96	3.32E-01	3.32E-01	8.72E-02	1.53E-01
	1037.75	14.03	2.37E+00		-3.09E-03	1.07E+00
	1238.25	67.00	6.47E-01		1.71E-01	2.95E-01
	1771.40	15.51	1.78E+00		-5.68E-01	7.20E-01
	2598.48	16.90	1.43E+00		-6.68E-01	5.07E-01
CO-57	122.06	85.51	1.78E-01	1.78E-01	7.45E-02	8.66E-02
	136.48	10.60	1.44E+00		-8.32E-01	6.96E-01
CO-58	810.76	99.40	3.38E-01	3.38E-01	-3.12E-02	1.56E-01
FE-59	1099.22	56.50	7.02E-01	7.02E-01	-1.66E-02	3.18E-01
	1291.56	43.20	1.00E+00		3.03E-01	4.49E-01
CO-60	1173.22	100.00	3.43E-01	3.28E-01	-4.86E-03	1.55E-01
	1332.49	100.00	3.28E-01		3.29E-02	1.46E-01
ZN-65	1115.52	50.75	8.02E-01	8.02E-01	4.92E-03	3.69E-01
+ GA-67	93.31	* 35.70	1.30E+01	1.30E+01	1.01E+01	6.41E+00
	208.95	2.24	1.60E+02		1.58E+02	7.76E+01
	300.22	16.00	2.45E+01		7.91E+00	1.17E+01
SE-75	121.11	16.70	9.41E-01	2.68E-01	1.57E-01	4.57E-01
	136.00	59.20	2.68E-01		-8.63E-02	1.30E-01
	264.65	59.80	3.38E-01		-9.93E-02	1.62E-01
	279.53	25.20	8.03E-01		3.95E-02	3.84E-01
	400.65	11.40	2.09E+00		1.13E+00	9.89E-01
RB-82	776.52	13.00	2.92E+00	2.92E+00	-1.14E+00	1.34E+00
RB-83	520.41	46.00	5.39E-01	5.39E-01	9.04E-02	2.52E-01
	529.64	30.30	7.18E-01		-9.97E-02	3.31E-01
	552.65	16.40	1.55E+00		-4.54E-01	7.20E-01
KR-85	513.99	0.43	7.23E+01	7.23E+01	7.66E+01	3.44E+01
SR-85	513.99	99.27	3.65E-01	3.65E-01	3.87E-01	1.74E-01
Y-88	898.02	93.40	3.23E-01	2.36E-01	-9.81E-02	1.47E-01
	1836.01	99.38	2.36E-01		5.90E-02	9.15E-02
NB-93M	16.57	9.43	7.99E-01	7.99E-01	1.86E+00	3.88E-01
NB-94	702.63	100.00	3.01E-01	2.60E-01	6.22E-02	1.40E-01
	871.10	100.00	2.60E-01		5.46E-03	1.18E-01
NB-95	765.79	99.81	4.06E-01	4.06E-01	1.23E-01	1.89E-01
NB-95M	235.69	25.00	1.66E+01	1.66E+01	3.67E+01	8.10E+00
ZR-95	724.18	43.70	7.25E-01	5.65E-01	6.05E-02	3.35E-01
	756.72	55.30	5.65E-01		1.37E-01	2.60E-01
MO-99	181.06	6.20	8.31E+01	5.59E+01	-1.09E+01	4.01E+01
	739.58	12.80	5.59E+01		-1.47E+01	2.53E+01
	778.00	4.50	1.74E+02		-5.49E+01	7.92E+01
RU-103	497.08	89.00	2.97E-01	2.97E-01	-3.73E-02	1.39E-01
RU-106	621.84	9.80	2.37E+00	2.37E+00	-7.63E-01	1.09E+00
AG-108M	433.93	89.90	2.07E-01	2.07E-01	-5.27E-02	9.65E-02
	614.37	90.40	3.35E-01		8.14E-02	1.58E-01
	722.95	90.50	2.93E-01		-1.08E-02	1.35E-01
CD-109	88.03	3.72	4.56E+00	4.56E+00	6.05E-01	2.23E+00
AG-110M	657.75	93.14	2.89E-01	2.89E-01	5.05E-02	1.34E-01
	677.61	10.53	2.57E+00		-2.64E-01	1.19E+00
	706.67	16.46	1.88E+00		4.83E-01	8.78E-01
	763.93	21.98	1.34E+00		-1.44E-01	6.16E-01
	884.67	71.63	4.26E-01		2.21E-01	1.95E-01
	1384.27	23.94	1.34E+00		-1.41E-01	5.85E-01

Analysis Report for 1606040-15
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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
CD-113M	263.70	0.02	7.88E+02	7.88E+02	-4.99E+02	3.77E+02
SN-113	255.12	1.93	9.72E+00	3.16E-01	-1.99E+00	4.65E+00
	391.69	64.90	3.16E-01		-2.29E-01	1.48E-01
TE123M	159.00	84.10	2.09E-01	2.09E-01	7.67E-02	1.01E-01
SB-124	602.71	97.87	2.75E-01	2.75E-01	-4.78E-03	1.27E-01
	645.85	7.26	4.14E+00		8.28E-01	1.92E+00
	722.78	11.10	2.69E+00		-3.87E-01	1.23E+00
	1691.02	49.00	3.71E-01		-9.99E-02	1.31E-01
I-125	35.49	6.49	1.51E+00	1.51E+00	-2.29E-01	7.35E-01
SB-125	176.33	6.89	2.24E+00	6.66E-01	-3.91E-01	1.08E+00
	427.89	29.33	6.66E-01		-7.34E-02	3.12E-01
	463.38	10.35	2.25E+00		9.95E-01	1.06E+00
	600.56	17.80	1.26E+00		1.72E-02	5.83E-01
	635.90	11.32	2.06E+00		-3.72E-01	9.50E-01
SB-126	414.70	83.30	5.75E-01	5.44E-01	-1.24E-02	2.72E-01
	666.33	99.60	5.44E-01		-2.53E-01	2.51E-01
	695.00	99.60	5.77E-01		-1.28E-02	2.67E-01
	720.50	53.80	9.61E-01		-7.63E-01	4.40E-01
+ SN-126	87.57	* 37.00	6.55E-01	6.55E-01	6.01E-01	3.23E-01
SB-127	473.00	25.00	9.97E+00	8.72E+00	-3.81E-01	4.67E+00
	685.20	35.70	8.72E+00		1.25E+00	4.04E+00
	783.80	14.70	2.35E+01		-3.13E+00	1.09E+01
I-129	29.78	57.00	1.44E-01	1.44E-01	-1.23E-02	6.99E-02
	33.60	13.20	6.28E-01		1.04E-01	3.05E-01
	39.58	7.52	1.18E+00		-1.78E-01	5.73E-01
I-131	284.30	6.05	1.04E+01	8.01E-01	2.45E+00	4.95E+00
	364.48	81.20	8.01E-01		6.57E-02	3.79E-01
	636.97	7.26	1.04E+01		-2.40E+00	4.80E+00
	722.89	1.80	4.62E+01		-6.65E+00	2.12E+01
TE-132	49.72	13.10	1.52E+01	3.76E+00	-1.20E+00	7.43E+00
	228.16	88.00	3.76E+00		1.66E-01	1.81E+00
BA-133	81.00	33.00	5.30E-01	4.70E-01	-2.98E-01	2.60E-01
	302.84	17.80	1.17E+00		8.08E-01	5.58E-01
	356.01	60.00	4.70E-01		-3.92E-02	2.26E-01
I-133	529.87	86.30	1.32E+04	1.32E+04	-1.83E+03	6.10E+03
XE-133	81.00	38.00	2.82E+00	2.82E+00	-1.59E+00	1.38E+00
CS-134	563.23	8.38	2.88E+00	2.94E-01	1.28E+00	1.34E+00
	569.32	15.43	1.46E+00		2.15E-01	6.78E-01
	604.70	97.60	2.94E-01		-3.15E-02	1.38E-01
	795.84	85.40	3.74E-01		1.52E-01	1.74E-01
	801.93	8.73	3.02E+00		-1.13E+00	1.38E+00
CS-135	268.24	16.00	1.22E+00	1.22E+00	4.13E-01	5.88E-01
I-135	1131.51	22.50	1.55E+15	1.20E+15	2.08E+14	7.06E+14
	1260.41	28.60	1.20E+15		1.76E+14	5.37E+14
	1678.03	9.54	2.91E+15		1.35E+15	1.22E+15
CS-136	153.22	7.46	4.36E+00	6.25E-01	-6.24E-01	2.11E+00
	163.89	4.61	7.18E+00		-1.11E+00	3.47E+00
	176.55	13.56	2.33E+00		-4.06E-01	1.12E+00
	273.65	12.66	3.20E+00		6.14E-01	1.53E+00
	340.57	48.50	1.03E+00		-3.16E-02	4.95E-01
	818.50	99.70	6.25E-01		1.61E-01	2.88E-01
	1048.07	79.60	7.82E-01		1.17E-02	3.53E-01
	1235.34	19.70	4.06E+00		1.59E+00	1.85E+00

Analysis Report for 1606040-15
CP-5025 10-15

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
CS-137	661.65	85.12	3.17E-01	3.17E-01	6.62E-02	1.47E-01
LA-138	788.74	34.00	8.97E-01	3.99E-01	-3.63E-01	4.15E-01
	1435.80	66.00	3.99E-01		-7.13E-02	1.70E-01
CE-139	165.85	80.35	2.16E-01	2.16E-01	2.13E-02	1.05E-01
BA-140	162.64	6.70	5.06E+00	1.80E+00	-1.46E-01	2.45E+00
	304.84	4.50	9.46E+00		6.26E+00	4.52E+00
	423.70	3.20	1.30E+01		-3.04E+00	6.10E+00
	437.55	2.00	1.93E+01		-6.94E+00	8.99E+00
	537.32	25.00	1.80E+00		-8.89E-02	8.37E-01
LA-140	328.77	20.50	2.12E+00	6.60E-01	5.78E-01	1.01E+00
	487.03	45.50	9.96E-01		-1.68E-02	4.66E-01
	815.85	23.50	2.77E+00		6.31E-01	1.28E+00
	1596.49	95.49	6.60E-01		1.60E-01	2.83E-01
CE-141	145.44	48.40	4.22E-01	4.22E-01	-2.00E-02	2.05E-01
CE-143	57.36	11.80	9.69E+02	5.43E+02	-3.99E+02	4.73E+02
	293.26	42.00	5.43E+02		2.92E+02	2.61E+02
	664.55	5.20	5.30E+03		3.69E+02	2.47E+03
CE-144	133.54	10.80	1.45E+00	1.45E+00	-7.14E-01	7.04E-01
PM-144	476.78	42.00	5.12E-01	2.50E-01	1.54E-02	2.39E-01
	618.01	98.60	2.50E-01		1.10E-02	1.16E-01
	696.49	99.49	2.74E-01		-5.05E-02	1.27E-01
PM-145	36.85	21.70	3.86E-01	2.12E-01	-8.33E-02	1.88E-01
	37.36	39.70	2.12E-01		-5.43E-02	1.03E-01
	42.30	15.10	6.55E-01		-1.17E-01	3.19E-01
	72.40	2.31	7.59E+00		1.38E+01	3.73E+00
PM-146	453.90	39.94	4.96E-01	4.96E-01	-4.57E-02	2.31E-01
	735.90	14.01	1.51E+00		-5.95E-01	6.81E-01
	747.13	13.10	2.04E+00		-2.80E-02	9.38E-01
ND-147	91.11	28.90	1.43E+00	1.43E+00	2.52E+00	7.00E-01
	531.02	13.10	3.58E+00		7.31E-01	1.65E+00
PM-149	285.90	3.10	4.57E+02	4.57E+02	1.53E+02	2.18E+02
EU-152	121.78	20.50	7.18E-01	7.18E-01	3.00E-01	3.49E-01
	244.69	5.40	4.08E+00		-3.69E-01	1.97E+00
	344.27	19.13	1.00E+00		-3.93E-02	4.74E-01
	778.89	9.20	2.69E+00		-8.49E-01	1.22E+00
	964.01	10.40	3.72E+00		-4.48E-01	1.73E+00
	1085.78	7.22	3.98E+00		9.33E-01	1.78E+00
	1112.02	9.60	3.68E+00		7.77E-01	1.68E+00
	1407.95	14.94	2.15E+00		4.63E-01	9.45E-01
GD-153	97.43	31.30	4.78E-01	4.78E-01	-2.53E-01	2.33E-01
	103.18	22.20	6.15E-01		-1.79E-01	2.99E-01
EU-154	123.07	40.50	3.65E-01	3.65E-01	1.10E-01	1.77E-01
	723.30	19.70	1.35E+00		-4.96E-02	6.23E-01
	873.19	11.50	2.21E+00		-5.31E-02	9.97E-01
	996.32	10.30	2.97E+00		1.37E-01	1.35E+00
	1004.76	17.90	1.86E+00		6.45E-01	8.50E-01
	1274.45	35.50	1.01E+00		-7.02E-02	4.54E-01
+ EU-155	86.50	* 30.90	7.88E-01	6.47E-01	7.23E-01	3.88E-01
	105.30	20.70	6.47E-01		-4.37E-02	3.14E-01
EU-156	811.77	10.40	5.29E+00	5.29E+00	-4.17E-01	2.44E+00
	1153.47	7.20	9.47E+00		-4.75E-01	4.32E+00
	1230.71	8.90	7.49E+00		-5.71E+00	3.38E+00
HO-166M	184.41	72.60	2.56E-01	2.56E-01	2.08E-01	1.24E-01

Analysis Report for 1606040-15
CP-5025 10-15

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
HO-166M	280.45	29.60	6.48E-01	2.56E-01	1.53E-01	3.10E-01
	410.94	11.10	1.96E+00		-3.36E-01	9.27E-01
	711.69	54.10	4.96E-01		-1.45E-01	2.29E-01
TM-171	66.72	0.14	1.00E+02	1.00E+02	-2.03E+01	4.91E+01
HF-172	81.75	4.52	3.66E+00	1.39E+00	-1.00E+01	1.79E+00
	125.81	11.30	1.39E+00		5.54E-03	6.76E-01
LU-172	181.53	20.60	3.42E+00	2.35E+00	5.57E-02	1.66E+00
	810.06	16.63	7.30E+00		-6.73E-01	3.36E+00
	912.12	15.25	1.30E+01		1.61E+01	6.13E+00
LU-173	1093.66	62.50	2.35E+00	9.49E-01	1.13E+00	1.07E+00
	100.72	5.24	2.57E+00		-2.61E+00	1.25E+00
	272.11	21.20	9.49E-01		2.37E-01	4.55E-01
HF-175	343.40	84.00	2.73E-01	2.73E-01	-1.02E-02	1.30E-01
LU-176	88.34	13.30	1.26E+00	2.04E-01	7.53E-01	6.16E-01
	201.83	86.00	2.10E-01		-1.69E-02	1.02E-01
	306.78	94.00	2.04E-01		-2.76E-02	9.74E-02
TA-182	67.75	41.20	3.63E-01	3.63E-01	-7.44E-02	1.77E-01
	1121.30	34.90	1.34E+00		5.83E-01	6.23E-01
	1189.05	16.23	2.17E+00		-5.84E-01	9.72E-01
	1221.41	26.98	1.80E+00		-2.70E-02	8.32E-01
	1231.02	11.44	3.38E+00		-2.58E+00	1.53E+00
IR-192	308.46	29.68	7.15E-01	4.99E-01	-8.39E-02	3.40E-01
	468.07	48.10	4.99E-01		-1.65E-01	2.34E-01
HG-203	279.19	77.30	2.96E-01	2.96E-01	1.46E-02	1.42E-01
BI-207	569.67	97.72	2.28E-01	2.28E-01	3.36E-02	1.06E-01
	1063.62	74.90	3.76E-01		5.77E-02	1.68E-01
+ TL-208	583.14	* 30.22	7.57E-01	7.57E-01	2.82E+00	3.51E-01
	860.37	4.48	7.28E+00		3.63E+00	3.37E+00
	2614.66	* 35.85	9.11E-01		1.36E+00	3.68E-01
BI-210M	262.00	45.00	3.99E-01	3.99E-01	-9.08E-02	1.91E-01
	300.00	23.00	1.01E+00		1.24E-01	4.85E-01
PB-210	46.50	4.25	2.48E+00	2.48E+00	-4.63E-01	1.21E+00
PB-211	404.84	2.90	7.25E+00	7.25E+00	-3.94E+00	3.43E+00
	831.96	2.90	1.05E+01		-2.70E+00	4.84E+00
BI-212	727.17	11.80	2.47E+00	2.47E+00	2.00E+00	1.15E+00
	1620.62	2.75	8.80E+00		3.24E+00	3.61E+00
+ PB-212	238.63	* 44.60	6.47E-01	6.47E-01	3.02E+00	3.16E-01
	300.09	3.41	6.79E+00		8.35E-01	3.27E+00
+ BI-214	609.31	* 46.30	7.61E-01	2.96E-01	1.45E+00	3.62E-01
	1120.29	* 15.10	3.85E+00		1.88E+00	1.82E+00
	1764.49	* 15.80	2.96E-01		2.74E+00	0.00E+00
	2204.22	4.98	7.20E+00		2.62E+00	3.04E+00
+ PB-214	295.21	* 19.19	1.42E+00	7.94E-01	7.33E-01	6.87E-01
	351.92	* 37.19	7.94E-01		1.98E+00	3.83E-01
RN-219	401.80	6.50	3.36E+00	3.36E+00	1.36E+00	1.59E+00
RA-223	323.87	3.88	5.26E+00	5.26E+00	9.95E-01	2.51E+00
RA-224	240.98	3.95	8.27E+00	8.27E+00	3.27E+01	4.04E+00
RA-225	40.00	31.00	5.45E-01	5.45E-01	-8.24E-02	2.65E-01
+ RA-226	186.21	* 3.28	5.91E+00	5.91E+00	3.50E+00	2.87E+00
	50.10	8.40	1.29E+00		1.29E+00	-1.01E-01	6.27E-01
+ AC-228	236.00	11.50	2.59E+00	1.43E+00	5.73E+00	1.26E+00
	256.20	6.30	2.74E+00		-1.12E+00	1.31E+00
	338.32	* 11.40	1.80E+00		2.90E+00	8.55E-01

Analysis Report for 1606040-15
CP-5025 10-15

Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
AC-228	911.07	*	27.70	1.43E+00	1.43E+00	2.39E+00	6.67E-01
	969.11	*	16.60	2.47E+00		3.31E+00	1.15E+00
TH-230	48.44		16.90	6.40E-01	6.40E-01	4.71E-02	3.12E-01
	62.85		4.60	2.85E+00		1.78E+00	1.39E+00
	67.67		0.37	3.71E+01		-7.62E+00	1.82E+01
PA-231	283.67		1.60	1.18E+01	8.99E+00	-1.65E+00	5.64E+00
	302.67		2.30	8.99E+00		6.23E+00	4.30E+00
TH-231	25.64		14.70	5.51E-01	5.51E-01	-2.82E-01	2.68E-01
	84.21		6.40	2.45E+00		-6.69E+00	1.20E+00
PA-233	311.98		38.60	6.45E-01	6.45E-01	-4.17E-01	3.06E-01
PA-234	131.20		20.40	7.63E-01	7.63E-01	-6.57E-02	3.71E-01
	733.99		8.80	2.54E+00		-7.97E-01	1.15E+00
	946.00		12.00	2.28E+00		-3.29E-01	1.03E+00
PA-234M	1001.03		0.92	3.84E+01	3.84E+01	2.72E+01	1.77E+01
+ TH-234	63.29	*	3.80	2.84E+00	2.84E+00	2.45E+00	1.38E+00
U-235	143.76		10.50	1.44E+00	1.44E+00	-1.96E-01	6.98E-01
	163.35		4.70	3.41E+00		-5.28E-01	1.65E+00
	205.31		4.70	3.83E+00		1.58E-01	1.85E+00
+ NP-237	86.50	*	12.60	1.92E+00	1.92E+00	1.76E+00	9.48E-01
NP-239	106.10		22.70	3.35E+01	3.35E+01	-2.26E+00	1.63E+01
	228.18		10.70	9.22E+01		-1.79E+01	4.43E+01
	277.60		14.10	7.66E+01		-9.86E+00	3.66E+01
AM-241	59.54		35.90	3.50E-01	3.50E-01	-4.94E-02	1.71E-01
AM-243	74.67		66.00	2.85E-01	2.85E-01	9.79E-01	1.40E-01
CM-243	209.75		3.29	5.90E+00	1.36E+00	4.88E+00	2.85E+00
	228.14		10.60	1.69E+00		7.46E-02	8.11E-01
	277.60		14.00	1.36E+00		-1.75E-01	6.50E-01

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

No Action Level results available for reporting purposes.

DATA REVIEW COMMENTS REPORT

Creation Date

Comment

User

Analysis Report for 1606040-15
CP-5025 10-15

No Data Review Comments Entered.

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

Sample Title: CP-5025 10-15

Elapsed Live time: 3600
 Elapsed Real Time: 3601

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	9	79
17:	97	72	60	54	38	61	43	46
25:	53	47	42	50	40	38	51	45
33:	47	39	44	50	48	42	36	42
41:	46	59	58	66	83	79	62	41
49:	51	49	55	75	51	52	52	64
57:	61	76	65	44	73	101	110	88
65:	47	68	62	81	73	79	80	79
73:	106	188	169	199	180	100	77	53
81:	68	71	98	82	73	105	90	91
89:	82	67	76	104	102	85	38	44
97:	55	47	48	43	40	44	50	34
105:	35	46	44	51	44	50	39	37
113:	45	40	38	32	45	43	41	52
121:	40	46	45	39	39	41	42	52
129:	71	46	32	41	34	35	30	39
137:	35	44	39	33	37	30	42	36
145:	30	38	39	38	34	35	33	36
153:	44	38	31	39	31	39	33	36
161:	33	41	31	22	30	39	34	37
169:	32	31	27	30	25	34	25	19
177:	24	33	24	26	25	25	30	53
185:	46	68	39	22	39	29	26	23
193:	36	32	33	19	41	36	31	35
201:	14	22	28	34	29	34	29	33
209:	36	31	37	32	31	23	23	21
217:	22	16	29	30	22	25	34	27
225:	15	22	21	17	23	28	25	22
233:	21	21	27	36	115	170	135	87
241:	49	44	20	11	17	23	16	21
249:	22	22	12	23	12	17	23	19
257:	19	14	17	16	24	24	18	14
265:	20	15	19	27	24	31	23	18
273:	16	20	11	20	22	21	17	17
281:	24	13	15	19	13	19	22	22
289:	15	13	13	18	14	37	55	38
297:	13	8	27	20	19	24	15	18
305:	20	19	7	18	9	12	13	16
313:	11	18	9	16	12	14	13	16
321:	18	11	18	15	15	15	24	23
329:	13	11	12	17	15	12	13	17
337:	46	41	27	16	7	11	13	11
345:	11	13	15	15	21	32	70	69
353:	31	16	13	5	9	10	12	11
361:	12	16	7	17	12	13	9	12

369: 12 17 9 12 8 11 15 11

Sample Title: CP-5025 10-15

Channel	1	2	3	4	5	6	7	8
377:	10	7	10	10	12	11	11	7
385:	11	17	10	9	11	10	7	11
393:	8	9	9	12	12	18	9	12
401:	14	9	10	15	10	7	12	10
409:	17	15	12	8	6	16	11	12
417:	16	10	10	8	15	7	8	9
425:	7	5	10	11	4	9	11	9
433:	5	9	4	8	7	8	8	9
441:	5	5	11	7	7	10	3	6
449:	8	7	13	11	9	4	6	3
457:	7	8	8	11	11	15	16	9
465:	10	6	5	11	4	12	9	8
473:	11	4	4	9	13	4	10	7
481:	9	9	5	6	7	6	12	9
489:	8	9	7	9	6	10	11	7
497:	4	4	7	8	6	6	6	9
505:	5	14	7	15	21	34	29	16
513:	8	6	7	12	7	8	7	7
521:	10	8	2	5	1	3	8	7
529:	8	7	3	7	4	2	6	12
537:	10	5	5	5	8	8	8	6
545:	8	4	8	11	6	8	5	7
553:	7	5	3	9	6	5	16	7
561:	5	3	8	10	2	4	10	4
569:	6	3	14	7	5	4	5	3
577:	2	5	13	6	8	45	50	27
585:	12	3	4	6	3	4	7	9
593:	3	13	4	9	5	7	8	7
601:	3	2	2	6	8	9	9	35
609:	39	34	8	4	10	5	12	7
617:	5	5	3	5	3	9	4	5
625:	8	5	5	5	3	12	7	7
633:	2	3	8	4	5	5	6	7
641:	2	7	6	3	13	6	4	9
649:	7	4	8	3	6	4	5	3
657:	5	11	4	11	7	5	6	7
665:	4	4	8	9	5	3	11	6
673:	6	4	9	6	3	6	4	7
681:	8	3	4	11	4	4	3	8
689:	8	4	6	5	2	7	6	5
697:	8	8	6	5	6	5	10	12
705:	7	8	9	6	5	3	6	5
713:	8	6	3	3	5	8	3	3
721:	2	4	6	5	8	5	12	6
729:	3	8	5	2	4	3	4	1
737:	2	3	4	5	1	4	8	6
745:	7	5	6	2	4	5	2	5
753:	6	7	6	7	3	8	2	1
761:	4	5	4	8	5	6	9	7
769:	11	5	7	9	3	0	6	5
777:	9	3	3	2	2	5	7	4
785:	9	11	7	5	4	3	3	8
793:	9	11	9	8	5	3	1	6

801: 7 2 6 4 4 4 5 7

Sample Title: CP-5025 10-15

Channel	1	2	3	4	5	6	7	8
809:	6	1	9	5	4	6	4	8
817:	7	5	4	7	5	3	0	2
825:	8	6	5	6	6	6	4	7
833:	2	5	4	8	7	6	6	3
841:	4	5	4	1	6	5	7	6
849:	3	6	4	3	3	4	6	5
857:	3	6	9	9	7	6	2	5
865:	3	5	2	5	6	5	3	2
873:	3	2	3	3	2	1	4	3
881:	4	3	5	4	4	7	4	5
889:	3	1	4	2	5	2	5	6
897:	4	4	4	3	3	2	8	5
905:	3	7	2	6	6	26	23	20
913:	13	4	2	4	5	5	5	5
921:	4	3	7	3	1	5	5	3
929:	3	3	2	5	5	3	3	4
937:	3	1	3	6	2	3	1	5
945:	5	2	2	0	3	8	6	3
953:	2	5	3	7	2	3	5	2
961:	1	6	3	5	9	6	6	21
969:	16	10	5	7	1	3	4	3
977:	4	3	4	6	4	4	4	7
985:	2	3	5	4	5	3	3	4
993:	1	2	3	2	4	6	3	8
1001:	5	3	2	4	10	0	3	4
1009:	4	3	0	1	7	3	2	1
1017:	2	4	3	8	2	4	3	3
1025:	4	3	2	4	3	7	3	1
1033:	3	4	3	2	2	5	3	2
1041:	4	3	2	3	3	2	1	2
1049:	4	2	6	6	7	6	3	2
1057:	2	1	6	2	1	1	4	1
1065:	1	4	4	1	1	6	6	8
1073:	1	1	2	5	0	5	1	1
1081:	1	3	4	3	2	3	2	1
1089:	4	2	3	6	8	3	6	3
1097:	3	7	1	1	3	3	3	5
1105:	2	3	3	3	4	6	1	7
1113:	4	4	3	4	4	6	12	14
1121:	6	6	3	3	1	6	6	2
1129:	3	6	3	5	2	4	3	3
1137:	5	2	6	3	4	2	2	1
1145:	2	3	5	5	3	2	4	4
1153:	1	6	6	6	4	4	3	5
1161:	4	1	2	2	1	1	1	3
1169:	4	3	5	3	2	3	1	7
1177:	2	6	7	1	6	9	2	5
1185:	5	6	3	1	3	0	0	2
1193:	6	2	1	5	3	2	4	3
1201:	9	7	2	5	6	2	1	4
1209:	2	2	5	5	2	6	4	8
1217:	7	6	5	7	4	6	4	5
1225:	6	9	6	1	1	6	3	5

1233: 1 3 4 8 2 5 5 4

Sample Title: CP-5025 10-15

Channel	1	3	4	8	2	5	5	4
1241:	2	2	2	6	1	5	4	1
1249:	3	2	4	1	3	3	2	4
1257:	6	3	1	2	3	3	2	2
1265:	3	4	0	4	4	3	3	2
1273:	2	3	1	3	8	3	4	6
1281:	2	3	4	0	3	3	3	4
1289:	4	3	3	3	1	4	1	3
1297:	1	2	1	3	5	1	2	1
1305:	4	4	2	0	2	3	2	2
1313:	2	1	4	2	2	2	3	0
1321:	2	3	2	2	1	2	2	1
1329:	4	5	2	1	3	0	3	2
1337:	2	0	5	0	3	3	1	6
1345:	4	0	2	1	2	2	1	1
1353:	2	2	2	2	2	1	1	2
1361:	1	3	2	2	1	0	0	1
1369:	1	0	0	4	0	1	2	6
1377:	4	0	3	3	1	0	4	1
1385:	2	3	2	1	2	2	2	0
1393:	1	0	3	0	0	2	0	1
1401:	2	2	2	4	0	0	4	1
1409:	3	2	0	4	2	0	1	2
1417:	2	1	0	1	1	2	4	0
1425:	0	1	4	2	0	2	4	3
1433:	1	2	0	0	1	2	1	1
1441:	1	2	1	0	0	2	1	0
1449:	3	1	2	0	1	2	1	2
1457:	2	8	33	69	85	39	7	4
1465:	0	3	3	1	1	0	1	0
1473:	1	0	1	1	0	0	1	2
1481:	1	1	1	1	0	3	0	0
1489:	2	1	2	1	0	0	1	1
1497:	1	1	0	1	1	1	1	1
1505:	2	4	0	1	2	1	1	1
1513:	1	1	3	0	1	1	1	0
1521:	0	1	1	2	1	0	2	0
1529:	0	0	0	1	0	0	0	1
1537:	1	1	1	1	0	2	1	0
1545:	0	2	0	0	2	0	0	0
1553:	0	1	2	0	1	0	1	1
1561:	1	1	1	0	0	1	2	0
1569:	1	0	1	1	0	1	0	0
1577:	0	0	1	1	0	1	1	2
1585:	1	1	1	1	1	3	2	0
1593:	5	0	1	0	2	0	0	2
1601:	2	0	0	1	1	0	0	1
1609:	1	0	0	3	3	0	1	0
1617:	0	2	0	1	0	0	2	2
1625:	0	0	0	0	0	2	2	1
1633:	1	1	1	0	1	0	2	0
1641:	0	1	0	0	0	1	3	0
1649:	1	0	1	0	1	2	0	0
1657:	1	0	0	0	1	1	1	0

1665: 0 0 1 0 1 0 0 1

Sample Title: CP-5025 10-15

Channel	1	2	3	4	5	6	7	8	9
1673:	0	2	1	0	1	1	1	1	1
1681:	1	1	0	0	0	0	0	0	0
1689:	1	0	0	0	0	1	0	0	1
1697:	1	1	1	1	0	3	1	1	1
1705:	1	0	1	0	0	0	1	1	1
1713:	0	1	0	0	0	0	1	0	0
1721:	0	0	0	2	2	0	1	1	1
1729:	2	1	0	0	1	1	2	0	0
1737:	3	0	0	1	2	1	0	1	1
1745:	2	1	2	0	2	0	1	0	0
1753:	0	0	0	0	0	1	1	0	0
1761:	0	1	7	7	4	2	2	0	0
1769:	0	1	1	0	1	0	0	0	0
1777:	1	1	1	0	0	0	0	0	1
1785:	0	0	0	0	1	0	0	0	0
1793:	0	1	1	1	1	0	2	0	0
1801:	2	5	0	2	1	0	1	1	1
1809:	0	2	0	0	2	0	0	0	0
1817:	0	1	0	1	1	0	0	0	2
1825:	1	0	1	0	0	1	0	0	2
1833:	0	0	1	0	1	0	0	0	0
1841:	0	0	0	0	1	2	1	0	0
1849:	0	1	0	0	0	0	1	0	0
1857:	0	0	0	0	0	0	0	0	0
1865:	0	0	0	0	1	1	0	0	0
1873:	1	0	0	0	0	0	0	0	1
1881:	0	1	0	0	3	0	0	0	1
1889:	1	1	0	0	1	2	1	0	0
1897:	0	0	4	0	1	3	0	0	0
1905:	0	0	0	1	0	1	0	0	0
1913:	0	0	0	1	1	1	1	0	0
1921:	0	1	2	1	0	0	1	0	0
1929:	0	0	1	0	0	0	3	0	0
1937:	0	1	0	0	0	0	0	0	0
1945:	1	0	1	1	0	0	2	1	1
1953:	1	0	0	0	0	2	1	1	1
1961:	1	1	0	0	0	1	1	0	0
1969:	1	2	0	0	1	0	1	1	1
1977:	1	0	0	1	0	2	3	0	0
1985:	3	0	0	0	0	1	0	1	1
1993:	0	0	1	1	1	3	1	0	0
2001:	0	0	1	1	2	0	2	0	0
2009:	2	0	1	1	0	0	1	0	0
2017:	1	1	0	2	0	1	1	2	2
2025:	1	0	2	2	1	0	0	0	0
2033:	3	0	0	0	1	1	0	1	1
2041:	0	1	0	1	0	0	0	1	1
2049:	0	2	0	0	0	2	2	0	0
2057:	0	0	0	1	0	0	0	0	0
2065:	0	0	2	1	0	0	0	1	1
2073:	1	0	1	0	1	1	0	2	2
2081:	1	0	1	1	1	0	0	1	1
2089:	0	0	0	0	1	0	0	2	2

2097: 1 1 0 2 0 0 2 1

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

2529: 1 0 0 0 0 0 0 1 1

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Channel	1	2	3	4	5	6	7	8	9
2537:	1	1	0	0	0	0	0	0	0
2545:	0	1	0	1	0	0	0	0	0
2553:	0	1	0	0	1	2	0	0	0
2561:	0	1	1	0	1	0	0	0	0
2569:	0	2	0	0	0	0	0	0	1
2577:	0	0	0	0	0	0	0	0	0
2585:	0	0	0	0	1	0	1	0	0
2593:	1	0	0	0	0	0	0	0	0
2601:	0	2	0	0	0	0	1	0	0
2609:	1	1	0	0	2	7	10	4	1
2617:	2	0	1	1	0	1	0	1	0
2625:	0	0	0	0	0	0	0	0	0
2633:	0	0	0	0	2	0	0	1	0
2641:	2	0	1	1	0	0	0	0	0
2649:	0	0	0	0	0	0	0	0	0
2657:	1	0	0	0	0	0	0	0	0
2665:	0	0	0	0	0	0	0	0	0
2673:	0	0	1	0	0	0	0	0	0
2681:	0	0	1	0	0	0	0	0	0
2689:	1	0	0	0	0	0	0	0	0
2697:	0	0	1	0	0	0	0	0	0
2705:	0	0	1	0	0	0	1	1	0
2713:	0	0	0	0	0	0	0	0	0
2721:	0	0	0	0	0	0	0	0	0
2729:	0	0	0	0	0	0	2	0	0
2737:	0	1	0	0	0	0	0	1	0
2745:	0	1	0	0	0	0	0	0	0
2753:	0	0	0	1	0	0	0	0	0
2761:	0	0	0	1	0	0	0	0	0
2769:	0	0	0	0	0	0	0	0	0
2777:	0	0	0	0	0	0	0	1	0
2785:	0	0	0	0	0	0	0	3	0
2793:	0	0	1	0	0	0	0	0	0
2801:	0	1	0	0	0	0	0	0	0
2809:	0	0	0	0	0	0	1	0	0
2817:	0	0	0	0	0	1	0	0	0
2825:	0	1	0	0	0	0	0	0	0
2833:	0	0	0	0	0	0	0	0	0
2841:	0	1	1	0	0	0	1	0	0
2849:	0	0	0	0	0	0	0	0	0
2857:	0	0	0	0	0	0	1	0	0
2865:	0	0	0	0	0	1	0	0	0
2873:	1	0	0	0	0	0	1	1	0
2881:	1	0	0	0	0	0	0	1	0
2889:	0	0	0	0	0	0	0	0	0
2897:	0	0	0	0	0	0	0	0	0
2905:	0	0	0	0	1	0	0	1	0
2913:	0	0	0	0	0	0	0	0	0
2921:	0	0	2	0	0	0	1	0	0
2929:	0	0	1	0	0	0	0	0	0
2937:	1	0	1	1	0	0	0	1	0
2945:	0	1	0	0	0	0	0	0	0
2953:	0	0	0	0	1	0	0	0	0

2961: 0 0 0 0 0 0 0 0

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Channel	1	2	3	4	5	6	7	8
2969:	0	0	1	0	0	0	0	0
2977:	0	0	2	0	1	0	0	0
2985:	0	0	0	0	0	1	0	0
2993:	0	0	0	0	0	0	0	0
3001:	0	0	0	0	1	0	0	1
3009:	0	0	1	0	0	0	0	0
3017:	0	0	1	0	0	0	0	0
3025:	0	0	0	1	0	1	1	0
3033:	0	1	0	1	0	0	0	0
3041:	0	0	0	0	0	0	0	0
3049:	0	1	0	1	2	0	0	0
3057:	1	0	0	0	0	0	0	0
3065:	0	0	0	1	0	0	0	0
3073:	0	0	0	0	0	0	1	0
3081:	0	0	0	0	0	0	1	0
3089:	0	0	0	0	1	1	0	0
3097:	0	1	0	0	0	0	0	0
3105:	0	0	0	0	0	0	0	0
3113:	0	0	0	1	0	0	0	0
3121:	0	0	1	0	1	0	0	0
3129:	0	0	1	0	0	0	0	0
3137:	0	0	0	0	0	0	0	0
3145:	0	0	1	0	1	0	0	0
3153:	0	0	0	0	0	0	0	0
3161:	0	0	1	0	0	0	1	0
3169:	0	0	0	0	0	0	0	0
3177:	0	0	0	0	0	0	0	0
3185:	0	0	0	1	0	0	0	0
3193:	0	0	1	0	1	0	0	0
3201:	0	0	0	0	0	0	0	0
3209:	0	0	0	0	0	0	0	0
3217:	0	0	0	0	0	1	0	0
3225:	0	0	0	0	1	0	0	0
3233:	0	0	0	0	0	0	0	0
3241:	0	1	0	0	0	0	0	0
3249:	0	0	1	0	0	0	0	0
3257:	0	0	0	0	0	0	0	1
3265:	0	0	0	0	0	0	0	0
3273:	0	0	1	0	0	0	0	0
3281:	0	0	0	0	0	0	0	1
3289:	1	1	0	2	0	0	0	0
3297:	0	0	2	0	0	0	0	1
3305:	0	0	0	0	0	0	0	1
3313:	1	0	0	0	0	0	0	1
3321:	0	0	1	1	0	0	0	0
3329:	0	0	0	0	0	0	0	0
3337:	0	0	0	0	0	0	0	0
3345:	0	0	0	0	0	0	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	1	0	0
3377:	0	0	0	0	0	0	0	0
3385:	1	0	0	0	0	0	0	0

3393: 0 0 0 0 0 0 0 0 0

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Channel	1	2	3	4	5	6	7	8	9
3401:	0	0	0	0	0	0	0	0	0
3409:	0	0	0	0	0	0	0	0	0
3417:	0	0	0	0	0	1	0	1	0
3425:	0	0	0	0	0	0	0	0	0
3433:	0	0	0	0	3	0	0	0	0
3441:	0	0	0	2	1	0	0	0	0
3449:	0	0	0	0	0	0	0	0	0
3457:	0	0	0	0	0	0	0	0	0
3465:	1	0	0	0	1	0	0	0	0
3473:	0	0	0	0	0	0	0	0	0
3481:	0	0	0	1	0	0	2	0	0
3489:	0	0	1	0	0	0	0	0	0
3497:	1	0	1	0	0	0	0	0	0
3505:	0	0	0	0	0	0	0	1	0
3513:	0	1	0	0	0	0	0	0	0
3521:	0	0	0	1	0	0	0	0	0
3529:	0	0	0	0	0	0	0	0	0
3537:	0	0	0	1	0	0	0	0	0
3545:	0	0	0	0	0	0	0	0	0
3553:	0	0	0	0	0	0	0	0	0
3561:	0	0	0	0	0	0	1	0	0
3569:	0	0	0	0	1	0	0	0	0
3577:	0	0	1	0	0	0	0	0	0
3585:	0	0	0	0	1	0	0	0	0
3593:	0	0	0	0	0	0	0	0	0
3601:	0	0	0	0	0	0	0	0	0
3609:	0	0	0	0	1	0	0	0	0
3617:	0	0	0	0	0	0	0	0	0
3625:	0	1	0	0	0	0	0	0	0
3633:	1	0	0	0	0	1	0	0	0
3641:	0	0	0	0	0	0	0	1	0
3649:	0	0	0	0	0	0	0	0	0
3657:	0	0	1	0	0	0	0	0	0
3665:	1	0	0	0	0	1	0	1	0
3673:	0	0	0	0	0	0	0	0	0
3681:	0	0	0	0	0	0	0	0	0
3689:	1	0	0	0	0	0	1	0	0
3697:	0	0	0	0	0	0	0	0	0
3705:	0	0	0	0	0	0	0	0	0
3713:	0	0	0	0	0	0	0	0	0
3721:	0	0	0	0	1	0	0	0	0
3729:	0	0	0	0	0	0	0	0	0
3737:	0	0	0	1	0	0	0	0	0
3745:	0	0	1	0	0	0	0	0	0
3753:	0	0	0	0	0	0	0	0	0
3761:	0	0	1	0	0	0	0	0	0
3769:	0	0	1	0	0	0	0	0	0
3777:	0	0	0	0	0	0	0	0	0
3785:	0	0	0	1	0	0	0	0	0
3793:	0	1	0	0	0	0	0	1	0
3801:	0	0	0	0	0	1	0	0	0
3809:	0	0	0	0	0	0	0	1	0
3817:	0	3	0	0	0	0	0	0	0

3825: 0 0 0 0 0 0 0 0

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

 ***** GENIE QUALITY ASSURANCE *****

Last Results Report
 6/15/16 5:59:19 AM

6115

QA File: \\OR-GAMMA1\ApexRoot\Countroom\QA\D000000001B.QCK

Detector: GE1
 Geometry: <None>
 Certificate: <None>
 Sample ID: QA Background Ch
 Sample Desc: QA Count
 Sample Quantity: 1.0000E+000
 Sample Date: 6/15/16 5:44:03 AM
 Measurement Date: 6/15/16 5:44:05 AM
 Elapsed Live Time: 900.0 seconds
 Elapsed Real Time: 900.1 seconds

Parameter Description	Value	Deviation/Flags
[Mean +/- Std. Dev.]		< LU : SD : UD : BS >
DAILY BKG CT RATE GE1	2.3322E+000	3.3982E-002
[SD: 2.2815E+000+/- 1.494]		< : : : >
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
 6/15/16 5:59:29 AM

✓
 6115

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: 6/15/16 5:44:10 AM
 Measurement Date: 6/15/16 5:44:14 AM
 Elapsed Live Time: 900.0 seconds
 Elapsed Real Time: 900.2 seconds

Parameter Description	Value	Deviation/Flags
[Mean +/- Std. Dev.]		< LU : SD : UD : BS >
DAILY BKG CT RATE GE2	3.4856E+000	3.7878E-002
[SD:-2.4410E+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)

 ***** GENIE QUALITY ASSURANCE *****

Last Results Report
 6/15/16 5:59:38 AM

←
 6115

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: 6/15/16 5:44:20 AM
 Measurement Date: 6/15/16 5:44:22 AM
 Elapsed Live Time: 900.0 seconds
 Elapsed Real Time: 903.3 seconds

Parameter Description	Value	Deviation/Flags
[Mean +/- Std. Dev.]		< LU : SD : UD : BS >
DAILY BKG CT RATE GE3	4.0190E+003	1.3068E+000
[SD: 2.2343E+003+/-1365.7]		< : : : >

Flags Key: LU = Lower/Upper Bounds Test (Ab = Above, Be = Below)
 SD = Sample Driven N-Sigma Test (In = Investigate, Ac = Action)
 UD = User Driven N-Sigma Test (In = Investigate, Ac = Action)
 BS = Measurement Bias Test (In = Investigate, Ac = Action)

```

*****
*****      G E N I E    Q U A L I T Y    A S S U R A N C E      *****
*****

```

Last Results Report
6/15/16 5:59:46 AM

blls

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:  6/15/16 5:44:27 AM
Measurement Date: 6/15/16 5:44:29 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 [SD: 9.5569E+000+/-157.29]	1.5989E+000	-5.0594E-002 < : : : >
Trend Test: The last	9 samples exhibit a bias trend.	

```

Flags Key:  LU = Lower/Upper Bounds Test      (Ab = Above, Be = Below)
            SD = Sample Driven N-Sigma Test  (In = Investigate, Ac = Action)
            UD = User Driven N-Sigma Test    (In = Investigate, Ac = Action)
            BS = Measurement Bias Test        (In = Investigate, Ac = Action)

```

 ***** GENIE QUALITY ASSURANCE *****

Last Results Report
 6/15/16 7:31:30 AM

6/15/16

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: 6/15/16 7:15:59 AM
 Elapsed Live Time: 900.0 seconds
 Elapsed Real Time: 918.0 seconds

Parameter Description [Mean +/- Std. Dev.]	Value	Deviation/Flags < LU : SD : UD : BS >			
Peak centroid 59.54 keV	6.0473E+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 keV	1.3333E+003				
Boundary Limits: [1.331E+003, 1.334E+003]		<	:	:	>
Trend Test: The last 9 samples exhibit a bias trend.					
Trend Test: The last 9 samples exhibit a monotonic trend.					
Peak centroid 1836.01 keV	1.8366E+003				
Boundary Limits: [1.834E+003, 1.838E+003]		<	:	:	>
Peak FWHM Am-241	8.8956E-001				
Boundary Limits: [5.000E-001, 3.000E+000]		<	:	:	>
Trend Test: The last 9 samples exhibit a bias trend.					
Peak FWHM Cs-137	2.0442E+000				
Boundary Limits: [5.000E-001, 3.000E+000]		<	:	:	>
Peak FWHM Co-60	2.1488E+000				
Boundary Limits: [5.000E-001, 3.000E+000]		<	:	:	>
Peak FWHM Y-90	2.3985E+000				
Boundary Limits: [5.000E-001, 3.000E+000]		<	:	:	>
Decay corrected activity	1.6745E+004				
Boundary Limits: [1.170E-002, 1.754E-002]		<	:	:	>
Trend Test: The last 9 samples exhibit a bias trend.					

Decay corrected activity 6.0068E+003
Boundary Limits: [4.716E-003, 7.075E-003] < : : : >

Parameter Description [Mean +/- Std. Dev.]	Value	Deviation/Flags < LU : SD : UD : BS >
---	-------	--

Decay corrected activity	1.0577E+004	
Boundary Limits: [7.572E-003, 1.136E-002]		< : : : >
Trend Test: The last 9 samples exhibit a bias trend.		

Decay corrected activity	1.8312E+004	
Boundary Limits: [1.626E-002, 2.440E-002]		< : : : >

Flags Key: LU = Lower/Upper Bounds Test (Ab = Above, Be = Below)
SD = Sample Driven N-Sigma Test (In = Investigate, Ac = Action)
UD = User Driven N-Sigma Test (In = Investigate, Ac = Action)
BS = Measurement Bias Test (In = Investigate, Ac = Action)

 ***** GENIE QUALITY ASSURANCE *****

Last Results Report
 6/15/16 5:36:12 AM

6/15

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: 6/15/16 5:20:32 AM
 Elapsed Live Time: 900.0 seconds
 Elapsed Real Time: 929.0 seconds

Parameter Description [Mean +/- Std. Dev.]	Value	Deviation/Flags < LU : SD : UD : BS >			
Peak centroid 59.54keV Boundary Limits: [5.800E+001, 6.100E+001]	5.9855E+001	<	:	:	>
Peak centroid 661.65 keV Boundary Limits: [6.600E+002, 6.640E+002] Trend Test: The last 9 samples exhibit a bias trend.	6.6131E+002	<	:	:	>
Peak centroid 1332.49 ke Boundary Limits: [1.331E+003, 1.334E+003] Trend Test: The last 9 samples exhibit a bias trend.	1.3319E+003	<	:	:	>
Peak centroid 1836.1 keV Boundary Limits: [1.834E+003, 1.838E+003] Trend Test: The last 9 samples exhibit a bias trend.	1.8353E+003	<	:	:	>
Peak FWHM Am-241 Boundary Limits: [5.000E-001, 3.000E+000]	1.6832E+000	<	:	:	>
Peak FWHM Cs-137 Boundary Limits: [5.000E-001, 3.000E+000]	1.8093E+000	<	:	:	>
Peak FWHM Co-60 Boundary Limits: [5.000E-001, 3.000E+000]	1.8702E+000	<	:	:	>
Peak FWHM Y-88 Boundary Limits: [5.000E-001, 3.000E+000] Trend Test: The last 9 samples exhibit a bias trend.	2.6740E+000	<	:	:	>
Decay corrected activity Boundary Limits: [1.224E-001, 1.836E-001]	1.5419E+005	<	:	:	>
Decay corrected activity	6.2812E+004				

Boundary Limits: [4.971E-002, 7.457E-002] < : : : >

Decay corrected activity 1.0201E+005
Boundary Limits: [7.978E-002, 1.197E-001] < : : : >

Parameter Description Value Deviation/Flags
[Mean +/- Std. Dev.] < LU : SD : UD : BS >

Decay corrected activity 1.9770E+005
Boundary Limits: [1.714E-001, 2.571E-001] < : : : >

Flags Key: LU = Lower/Upper Bounds Test (Ab = Above, Be = Below)
 SD = Sample Driven N-Sigma Test (In = Investigate, Ac = Action)
 UD = User Driven N-Sigma Test (In = Investigate, Ac = Action)
 BS = Measurement Bias Test (In = Investigate, Ac = Action)

 ***** GENIE QUALITY ASSURANCE *****

Last Results Report
 6/15/16 5:36:23 AM

✓
 6115

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: 6/15/16 5:20:41 AM
 Elapsed Live Time: 900.0 seconds
 Elapsed Real Time: 930.2 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	6.6209E+002				
Boundary Limits: [6.600E+002, 6.640E+002]		<	:	:	>
Peak centroid 1332.49 keV	1.3328E+003				
Boundary Limits: [1.331E+003, 1.334E+003]		<	:	:	>
Peak centroid 1836.1 keV	1.8364E+003				
Boundary Limits: [1.833E+003, 1.838E+003]		<	:	:	>
Peak FWHM Am-241	1.4279E+000				
Boundary Limits: [5.000E-001, 3.000E+000]		<	:	:	>
Trend Test: The last 9 samples exhibit a bias trend.					
Peak FWHM Cs-137	1.7019E+000				
Boundary Limits: [5.000E-001, 3.000E+000]		<	:	:	>
Peak FWHM Co-60	2.1862E+000				
Boundary Limits: [5.000E-001, 3.000E+000]		<	:	:	>
Peak FWHM Y-88	2.5424E+000				
Boundary Limits: [5.000E-001, 3.000E+000]		<	:	:	>
Decay corrected activity	1.6988E+005				
Boundary Limits: [1.223E-001, 1.834E-001]		<	:	:	>
Trend Test: The last 9 samples exhibit a bias trend.					
Decay corrected activity	6.7017E+004				
Boundary Limits: [4.969E-002, 7.453E-002]		<	:	:	>

Decay corrected activity 1.0166E+005
Boundary Limits: [7.972E-002, 1.120E-001] < : : : >

Parameter Description	Value	Deviation/Flags
[Mean +/- Std. Dev.]		< LU : SD : UD : BS >

Decay corrected activity 2.1067E+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)

 ***** GENIE QUALITY ASSURANCE *****

Last Results Report
 6/15/16 7:32:09 AM

6/15/16

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: 6/15/16 7:16:21 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	5.8779E+001	
Boundary Limits: [5.800E+001, 6.100E+001]		< : : : >
Trend Test: The last 9 samples exhibit a bias trend.		
Peak centroid 661.65 keV	6.6106E+002	
Boundary Limits: [6.600E+002, 6.630E+002]		< : : : >
Peak centroid 1332.49 keV	1.3321E+003	
Boundary Limits: [1.331E+003, 1.334E+003]		< : : : >
Peak centroid 1836.1 keV	1.8360E+003	
Boundary Limits: [1.834E+003, 1.838E+003]		< : : : >
Trend Test: The last 9 samples exhibit a bias trend.		
Peak FWHM Am-241	2.0305E+000	
Boundary Limits: [5.000E-001, 3.000E+000]		< : : : >
Trend Test: The last 9 samples exhibit a bias trend.		
Peak FWHM Cs-137	2.5318E+000	
Boundary Limits: [5.000E-001, 3.000E+000]		< : : : >
Trend Test: The last 9 samples exhibit a bias trend.		
Peak FWHM Co-60	2.8694E+000	
Boundary Limits: [5.000E-001, 3.000E+000]		< : : : >
Peak FWHM Y-88	2.8920E+000	
Boundary Limits: [5.000E-001, 3.500E+000]		< : : : >
Decay corrected activity	1.2154E+005	
Boundary Limits: [1.200E-001, 1.816E-001]		< : : : >
Decay corrected activity	7.0424E+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	1.0711E+005	
Boundary Limits: [7.892E-002, 1.184E-001]		< : : : >
Trend Test: The last 9 samples exhibit a bias trend.		

Decay corrected activity	2.3524E+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)

 ***** GENIE QUALITY ASSURANCE *****

Last Results Report
 6/16/16 6:04:17 AM

Cell 6

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	Value	Deviation/Flags
[Mean +/- Std. Dev.]		< 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)

 ***** GENIE QUALITY ASSURANCE *****

Last Results Report
 6/16/16 6:04:33 AM

6114

QA File: \\OR-GAMMA1\ApexRoot\Countroom\QA\D0000000004B.QCK

Detector: GE4
 Geometry: <None>
 Certificate: <None>
 Sample ID: QA Background Ch
 Sample Desc: QA Count
 Sample Quantity: 1.0000E+000
 Sample Date: 6/16/16 5:49:18 AM
 Measurement Date: 6/16/16 5:49:20 AM
 Elapsed Live Time: 900.0 seconds
 Elapsed Real Time: 900.2 seconds

Parameter Description	Value	Deviation/Flags
[Mean +/- Std. Dev.]		< LU : SD : UD : BS >
DAILY BKG CT RATE GE4	1.5322E+000	-5.0981E-002
[SD: 9.5453E+000+/-157.17]		< : : >
Trend Test: The last	9 samples exhibit a bias trend.	

Flags Key: LU = Lower/Upper Bounds Test (Ab = Above, Be = Below)
 SD = Sample Driven N-Sigma Test (In = Investigate, Ac = Action)
 UD = User Driven N-Sigma Test (In = Investigate, Ac = Action)
 BS = Measurement Bias Test (In = Investigate, Ac = Action)

 ***** GENIE QUALITY ASSURANCE *****

Last Results Report
 6/16/16 5:39:56 AM

6/16

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 Boundary Limits: [5.800E+001, 6.100E+001]	5.9878E+001	< : : : >
Peak centroid 661.65 keV Boundary Limits: [6.600E+002, 6.640E+002] Trend Test: The last 9 samples exhibit a bias trend.	6.6133E+002	< : : : >
Peak centroid 1332.49 ke Boundary Limits: [1.331E+003, 1.334E+003] Trend Test: The last 9 samples exhibit a bias trend.	1.3320E+003	< : : : >
Peak centroid 1836.1 keV Boundary Limits: [1.834E+003, 1.838E+003] Trend Test: The last 9 samples exhibit a bias trend.	1.8353E+003	< : : : >
Peak FWHM Am-241 Boundary Limits: [5.000E-001, 3.000E+000]	1.6498E+000	< : : : >
Peak FWHM Cs-137 Boundary Limits: [5.000E-001, 3.000E+000]	1.8564E+000	< : : : >
Peak FWHM Co-60 Boundary Limits: [5.000E-001, 3.000E+000]	1.8804E+000	< : : : >
Peak FWHM Y-88 Boundary Limits: [5.000E-001, 3.000E+000] Trend Test: The last 9 samples exhibit a bias trend.	2.4911E+000	< : : : >
Decay corrected activity Boundary Limits: [1.224E-001, 1.836E-001]	1.4760E+005	< : : : >
Decay corrected activity	6.1547E+004	

Boundary Limits: [4.971E-002, 7.457E-002] < : : : >

Decay corrected activity 9.8284E+004
Boundary Limits: [7.978E-002, 1.197E-001] < : : : >

Parameter Description Value Deviation/Flags
[Mean +/- Std. Dev.] < LU : SD : UD : BS >

Decay corrected activity 2.0307E+005
Boundary Limits: [1.714E-001, 2.571E-001] < : : : >

Flags Key: LU = Lower/Upper Bounds Test (Ab = Above, Be = Below)
 SD = Sample Driven N-Sigma Test (In = Investigate, Ac = Action)
 UD = User Driven N-Sigma Test (In = Investigate, Ac = Action)
 BS = Measurement Bias Test (In = Investigate, Ac = Action)

 ***** GENIE QUALITY ASSURANCE *****

Last Results Report
 6/16/16 5:40:22 AM

Bill

QA File: \\OR-GAMMA1\ApexRoot\Countroom\QA\D000000004GAW-14C.QCK

Detector: GE4
 Geometry: <None>
 Certificate: GAW-14
 Sample ID: QA Calibration C
 Sample Desc: QA Count
 Sample Quantity: 1.0000E+000
 Sample Date: 10/1/14 12:00:00 AM
 Measurement Date: 6/16/16 5:24:34 AM
 Elapsed Live Time: 900.0 seconds
 Elapsed Real Time: 935.5 seconds

Parameter Description [Mean +/- Std. Dev.]	Value	Deviation/Flags < LU : SD : UD : BS >			
Peak centroid 59.54 keV	5.8816E+001				
Boundary Limits: [5.800E+001, 6.100E+001]		<	:	:	>
Trend Test: The last 9 samples exhibit a bias trend.					
Peak centroid 661.65 keV	6.6101E+002				
Boundary Limits: [6.600E+002, 6.630E+002]		<	:	:	>
Peak centroid 1332.49 keV	1.3320E+003				
Boundary Limits: [1.331E+003, 1.334E+003]		<	:	:	>
Peak centroid 1836.1 keV	1.8356E+003				
Boundary Limits: [1.834E+003, 1.838E+003]		<	:	:	>
Trend Test: The last 9 samples exhibit a bias trend.					
Peak FWHM Am-241	2.2044E+000				
Boundary Limits: [5.000E-001, 3.000E+000]		<	:	:	>
Trend Test: The last 9 samples exhibit a bias trend.					
Peak FWHM Cs-137	2.5433E+000				
Boundary Limits: [5.000E-001, 3.000E+000]		<	:	:	>
Trend Test: The last 9 samples exhibit a bias trend.					
Peak FWHM Co-60	2.8396E+000				
Boundary Limits: [5.000E-001, 3.000E+000]		<	:	:	>
Peak FWHM Y-88	2.8656E+000				
Boundary Limits: [5.000E-001, 3.500E+000]		<	:	:	>
Decay corrected activity	1.2556E+005				
Boundary Limits: [1.200E-001, 1.816E-001]		<	:	:	>
Decay corrected activity	6.8489E+004				

Boundary Limits: [4.918E-002, 7.377E-002] < : : >
Trend Test: The last 9 samples exhibit a bias trend.

Parameter Description	Value	Deviation/Flags
[Mean +/- Std. Dev.]		< LU : SD : UD : BS >

Decay corrected activity	1.0589E+005	
Boundary Limits: [7.892E-002, 1.184E-001]		< : : : >
Trend Test: The last 9 samples exhibit a bias trend.		

Decay corrected activity	2.3119E+005	
Boundary Limits: [1.695E-001, 2.543E-001]		< : : : >
Trend Test: The last 9 samples exhibit a bias trend.		

Flags Key: LU = Lower/Upper Bounds Test (Ab = Above, Be = Below)
SD = Sample Driven N-Sigma Test (In = Investigate, Ac = Action)
UD = User Driven N-Sigma Test (In = Investigate, Ac = Action)
BS = Measurement Bias Test (In = Investigate, Ac = Action)