

AUXIER & ASSOCIATES, INC.

PAP-KAN

**STANDARD LEVEL IV
REPORT OF ANALYSIS**

WORK ORDER #15-10064-OR

November 16, 2015

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

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STANDARD OPERATING PROCEDURE

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Sample Receiving

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

MP-001-3

15 - 10064

Eberline Services Work Order # _____

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

Date for Partial	Initials	Date	Initials	Checklist Items
		10-12-13	JCB	Sample Log-In
		11/3/15	KBS	Data Compilation
		11-4-15	MLP	First Technical Data Review
		11/4/15	MLP	Second Technical Data Review
		11/10/15	[Signature]	Data Entry/Electronic Deliverable
		11/10/15	[Signature]	Case Narrative
		11/11/15	KBS	Electronic Deliverable Proof
		11/11/15	MLP	Samples Analyzed within Holding Time Yes? <input checked="" type="checkbox"/> No? <input type="checkbox"/>
		11/11/15	MLP	QA/QC Review
				Client in Possession of Data Electronic or Hard Copy
				Invoiced by Laboratory

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

Date package approved by: _____
Laboratory Manager
Date

Copy No. _____

Radiochemistry Services

SECTION I
CHAIN OF CUSTODY




Internal Chain of Custody

Work Order #	15-10064
Lab Deadline	11/3/2015
Analysis	UUISO - Level 4
Sample Matrix	Soil/Solid

Comments	Sample Fraction	HP 210 / 270 Detector Activity	Storage Location
	04	36	I1.2
	05	35	I1.2
	06	32	I1.2
	07	34	I1.2
	08	36	I1.2
	09	35	I1.2
	10	34	I1.2
	11	38	I1.2
	12	34	I1.2
	13	37	I1.2

	Location (circle one)					Initials	Date
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	1330 Kerry Seely	10-12-15
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	0940 Kerry Seely	10-13-15
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	0940 J. Pacheco	10-13-15
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	1040	10-13-15
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	1040 J. Pacheco	10-16-15
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	0824 J. Pacheco	10-16-15
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	1040	10-16-15
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	1040 KBS	10/22/15 1520
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		

	<h1>Internal Chain of Custody</h1>	Work Order #	15-10064
		Lab Deadline	11/3/2015
		Analysis	ThISO - Level 4
		Sample Matrix	Soil/Solid

Comments	Sample Fraction	HP 210 / 270 Detector Activity	Storage Location
	04	36	I1.2
	05	35	I1.2
	06	32	I1.2
	07	34	I1.2
	08	36	I1.2
	09	35	I1.2
	10	34	I1.2
	11	38	I1.2
	12	34	I1.2
	13	37	I1.2

	Location (circle one)					Initials	Date
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	1334 <i>Kern Selding</i>	10-12-15
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	0940 <i>Kern Selding</i>	10-13-15
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	0940 <i>J. Pacheco</i>	10-13-15
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	<i>NOIPE</i>	10/16/15
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	<i>NOIPE</i>	10-16-15 1050
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	<i>NOIPE</i>	10-16-15 0926
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	<i>NOIPE</i>	10/21/15 0824
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	<i>KB</i>	10/21/15 1502
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 #

15-10064

Lab Deadline

11/3/2015

Analysis

Gamma - Level 4

Sample Matrix

Soil/Solid

Comments	Sample Fraction	HP 210 / 270 Detector Activity	Storage Location	
21 day ingrowth: Report Ac228, Bi214, Pb212/214, Ra226 from Bi214, Ra228 from Ac228, Tl208, Th234 & positives.	04	36	I1.2	
	05	35	I1.2	
	06	32	I1.2	
	07	34	I1.2	
	08	36	I1.2	
	09	35	I1.2	
	10	34	I1.2	
	11	38	I1.2	
	12	34	I1.2	
	13	37	I1.2	

	Location (circle one)					Initials	Date
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	1370 Kensley	10-12-15
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	0955 Kensley	10-13-15
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	ICB	10/03/15 1000
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	ICB	11/3/15 1439
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
& CORRESPONDENCE



STANDARD OPERATING PROCEDURE

Sample Receiving

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Eberline Services – Oak Ridge Laboratory

SAMPLE RECEIPT CHECKLIST MP-001-2

WORK ORDER # 15-10064

SAMPLE MATRIX/MATRICES:

(CIRCLE ONE OR BOTH)

AQUEOUS NON-AQUEOUS

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

WERE SAMPLES:

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

WERE CHAIN OF CUSTODY SEALS:

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

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

REMARKS: _____

SIGNATURE: *[Signature]* DATE: 10-12-15

Kathy Shaulis

From: Cecilia Greene <cgreene@auxier.com>
Sent: Monday, October 19, 2015 4:06 PM
To: Kathy Shaulis
Subject: FW: Correct COCs
Attachments: COC7124.pdf; COC7129.pdf

Kathy, attached are corrections to COCs previously submitted.

From: Ashley Jahr [<mailto:ashley86jahr@aol.com>]
Sent: Saturday, October 17, 2015 12:49 PM
To: cgreene@auxier.com; teitt@auxier.com
Subject: Correct COCs

Please see attached copies of COCs with corrections.

Thank YOU,
Ashley Jahr

Chain of Custody Record

No 7124

Eberline Services
601 Scarboro Road
Oak Ridge, TN 37830
(865) 481-0683 Phone • (865) 483-4621 Fax



EBERLINE
SERVICES

Project Name: PDP16110
 Send Report To: Cecilia Greene
 Address:
 4601 Cecelia Greene, Suite 1
 Oak Ridge, TN 37830
 Phone: 865-675-3164
 Fax: 865-675-3164
 Project Number:
 Sampler (Print Name): PDP16110
 Sampler (Print Name):
 Shipment Method: Express
 Airbill Number:
 Laboratory Receiving: Eberline

Analysis Requested

Purchase Order #:

Comments, Special Instructions, etc.
 21 Day Growth

Lab Sample ID (to be completed by lab)

Page 1 of 2

Field Sample ID	Sample Date	Sample Time	Sample Matrix	Number of Containers
CP5005-5115	10/16/15	10:50	S	1
CP5005-5115	10/16/15	10:00	S	1
CP5005-5115	10/16/15	10:10	S	1
CP5005-5115	10/16/15	10:40	S	1
CP5005-5115	10/16/15	10:50	S	1
CP5005-5115	10/16/15	11:10	S	1
CP5005-5115	10/16/15	11:10	S	1
CP5005-5115	10/16/15	11:30	S	1
CP5005-5115	10/16/15	11:40	S	1
CP5005-5115	10/16/15	11:50	S	1

QA/QC Level	Turnaround	Sample Receipt
Level I <input type="checkbox"/>	Routine <input type="checkbox"/>	Total # Containers Received?
Level II <input type="checkbox"/>	24 Hour <input type="checkbox"/>	COC Seals Present?
Level III <input type="checkbox"/>	1 Week <input type="checkbox"/>	COC Seals Intact?
Other <input type="checkbox"/>	Other <input type="checkbox"/>	Received Containers Intact?
		Temperature?

Relinquished by: (Signature)

Received by: (Signature)

Date: 10/16/15

Time: 12:00

Relinquished by: (Signature)

Received by: (Signature)

Date:

Time:

Relinquished by: (Signature)

Received by: (Signature)

Date:

Time:

SECTION III
CASE NARRATIVE



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

EBS-OR-39959

November 16, 2015

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

CASE NARRATIVE
Work Order # 15-10064-OR

SAMPLE RECEIPT

This work order contains ten soil samples received 10/12/2015. These samples were analyzed for Isotopic Uranium, Isotopic Thorium and by Gamma Spectroscopy.

<u>CLIENT ID</u>	<u>LAB ID</u>	<u>CLIENT ID</u>	<u>LAB ID</u>
CP5005S14-15	15-10064-04	CP2211S11-12	15-10064-09
CP5005S16-17 5	15-10064-05	CP2211S13-14	15-10064-10
CP2211S01-02	15-10064-06	CP2211S16-17	15-10064-11
CP2211S04-05	15-10064-07	CP2211S18-19	15-10064-12
CP2211S06-07	15-10064-08	CP2211S21-22	15-10064-13

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.

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.

ANALYTICAL RESULTS CONTINUED

ISOTOPIC URANIUM CONTINUED

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

ISOTOPIC THORIUM

Samples were prepared by removing representative aliquots followed by mixed acid digestions as appropriate. Thorium was selectively extracted by ion exchange. Thorium was eluted, micro-precipitated and mounted on micro-porous filter media. Sample activities were then determined by alpha spectroscopy using energy specific regions of interest for Thorium-228, 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-228, Thorium-230 and Thorium-232 method blank demonstrated acceptable results. Results for the Thorium-228 and Thorium-232 duplicate demonstrated an acceptable relative percent difference and normalized difference. Results for the Thorium-230 duplicate demonstrated a high relative percent difference; however, normalized difference is within acceptable limits for the analytical technique. Results for the Thorium-228, Thorium-230 and Thorium-232 laboratory control sample demonstrated an acceptable percent recovery.

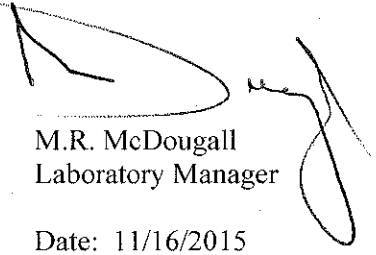
GAMMA SPECTROSCOPY

Samples were dried, homogenized and placed into appropriate gamma spectroscopy geometry containers. Samples were then sealed for 21 days to allow for ingrowth of Radon-222 and progeny. Samples were counted on High Purity Germanium (HPGe) gamma ray detectors. Energy lines from Lead-214 and Bismuth-214 were analyzed for determinations of Radium-226 activity.

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 replicate demonstrated a high relative percent difference; however, normalized difference is within acceptable limits for the analytical technique. Results for the 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: 11/16/2015

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

SECTION IV
ANALYTICAL RESULTS SUMMARY

Eberline Analytical

Final Report of Analysis

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

SDG: 15-10064
Project: PAP-KAN
Analysis Category: ENVIRONMENTAL
Sample Matrix: SO

Work Order Details:

Report To:

Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	CV	Report Units
15-10064-01	LCS	KNOWN	10/12/2015 00:00	10/12/2015	11/2/2015	15-10064	Cobalt-60	LANL ER-130 Modified	1.37E+02	5.48E+00				pCi/g
15-10064-01	LCS	KNOWN	10/12/2015 00:00	10/12/2015	11/2/2015	15-10064	Cesium-137	LANL ER-130 Modified	9.69E+01	3.48E+00				pCi/g
15-10064-01	LCS	SPIKE	10/12/2015 00:00	10/12/2015	11/2/2015	15-10064	Cobalt-60	LANL ER-130 Modified	1.35E+02	9.35E+00	1.16E+01	1.62E+00	1.48E+00	pCi/g
15-10064-01	LCS	SPIKE	10/12/2015 00:00	10/12/2015	11/2/2015	15-10064	Cesium-137	LANL ER-130 Modified	8.27E+01	7.94E+00	9.01E+00	1.72E+00	8.52E-01	pCi/g
15-10064-02	MBL	BLANK	10/12/2015 00:00	10/12/2015	11/2/2015	15-10064	Actinium-228	LANL ER-130 Modified	4.83E-02	1.60E-01	1.60E-01	2.90E-01	1.27E-01	pCi/g
15-10064-02	MBL	BLANK	10/12/2015 00:00	10/12/2015	11/2/2015	15-10064	Bismuth-214	LANL ER-130 Modified	-1.55E-02	8.46E-02	8.46E-02	1.34E-01	5.96E-02	pCi/g
15-10064-02	MBL	BLANK	10/12/2015 00:00	10/12/2015	11/2/2015	15-10064	Potassium-40	LANL ER-130 Modified	0.00E+00	0.00E+00	0.00E+00	6.99E-01	2.77E-01	pCi/g
15-10064-02	MBL	BLANK	10/12/2015 00:00	10/12/2015	11/2/2015	15-10064	Lead-212	LANL ER-130 Modified	3.76E-02	6.16E-02	6.16E-02	1.04E-01	4.89E-02	pCi/g
15-10064-02	MBL	BLANK	10/12/2015 00:00	10/12/2015	11/2/2015	15-10064	Lead-214	LANL ER-130 Modified	9.59E-02	8.38E-02	8.40E-02	1.53E-01	7.14E-02	pCi/g
15-10064-02	MBL	BLANK	10/12/2015 00:00	10/12/2015	11/2/2015	15-10064	Radium-226	LANL ER-130 Modified	-1.55E-02	8.46E-02	8.46E-02	1.34E-01	6.17E-01	pCi/g
15-10064-02	MBL	BLANK	10/12/2015 00:00	10/12/2015	11/2/2015	15-10064	Radium-228	LANL ER-130 Modified	4.83E-02	1.60E-01	1.60E-01	2.90E-01	1.27E-01	pCi/g
15-10064-02	MBL	BLANK	10/12/2015 00:00	10/12/2015	11/2/2015	15-10064	Thorium-234	LANL ER-130 Modified	3.37E-01	4.03E-01	4.04E-01	6.67E-01	3.19E-01	pCi/g
15-10064-02	MBL	BLANK	10/12/2015 00:00	10/12/2015	11/2/2015	15-10064	Thallium-208	LANL ER-130 Modified	-3.71E-02	1.14E-01	1.14E-01	1.80E-01	7.95E-02	pCi/g
15-10064-03	DUP	CP5005S14-15	10/06/15 09:50	10/12/2015	11/3/2015	15-10064	Actinium-228	LANL ER-130 Modified	1.09E+00	5.05E-01	5.08E-01	1.23E+00	5.89E-01	pCi/g
15-10064-03	DUP	CP5005S14-15	10/06/15 09:50	10/12/2015	11/3/2015	15-10064	Bismuth-214	LANL ER-130 Modified	1.60E+00	3.86E-01	3.75E-01	5.87E-01	2.82E-01	pCi/g
15-10064-03	DUP	CP5005S14-15	10/06/15 09:50	10/12/2015	11/3/2015	15-10064	Potassium-40	LANL ER-130 Modified	2.38E+01	3.91E+00	4.08E+00	1.55E+00	6.62E-01	pCi/g
15-10064-03	DUP	CP5005S14-15	10/06/15 09:50	10/12/2015	11/3/2015	15-10064	Lead-212	LANL ER-130 Modified	1.75E+00	3.71E-01	3.82E-01	4.89E-01	2.40E-01	pCi/g
15-10064-03	DUP	CP5005S14-15	10/06/15 09:50	10/12/2015	11/3/2015	15-10064	Lead-214	LANL ER-130 Modified	1.48E+00	3.22E-01	3.30E-01	5.71E-01	2.77E-01	pCi/g
15-10064-03	DUP	CP5005S14-15	10/06/15 09:50	10/12/2015	11/3/2015	15-10064	Radium-226	LANL ER-130 Modified	1.60E+00	3.66E-01	3.75E-01	5.87E-01	2.58E+00	pCi/g
15-10064-03	DUP	CP5005S14-15	10/06/15 09:50	10/12/2015	11/3/2015	15-10064	Radium-228	LANL ER-130 Modified	1.09E+00	5.05E-01	5.08E-01	1.23E+00	5.89E-01	pCi/g
15-10064-03	DUP	CP5005S14-15	10/06/15 09:50	10/12/2015	11/3/2015	15-10064	Thorium-234	LANL ER-130 Modified	1.67E+00	1.57E+00	1.57E+00	2.46E+00	1.20E+00	pCi/g
15-10064-03	DUP	CP5005S14-15	10/06/15 09:50	10/12/2015	11/3/2015	15-10064	Thallium-208	LANL ER-130 Modified	1.36E+00	3.51E-01	3.58E-01	2.58E-01	4.12E-01	pCi/g
15-10064-04	DO	CP5005S14-15	10/06/15 09:50	10/12/2015	11/3/2015	15-10064	Actinium-228	LANL ER-130 Modified	1.48E+00	6.03E-01	6.07E-01	1.25E+00	5.98E-01	pCi/g
15-10064-04	DO	CP5005S14-15	10/06/15 09:50	10/12/2015	11/3/2015	15-10064	Bismuth-214	LANL ER-130 Modified	1.71E+00	3.00E-01	3.12E-01	3.04E-01	2.69E-01	pCi/g
15-10064-04	DO	CP5005S14-15	10/06/15 09:50	10/12/2015	11/3/2015	15-10064	Potassium-40	LANL ER-130 Modified	1.93E+01	3.46E+00	3.60E+00	2.09E+00	9.32E-01	pCi/g
15-10064-04	DO	CP5005S14-15	10/06/15 09:50	10/12/2015	11/3/2015	15-10064	Lead-212	LANL ER-130 Modified	1.93E+00	3.81E-01	3.93E-01	4.82E-01	2.36E-01	pCi/g
15-10064-04	DO	CP5005S14-15	10/06/15 09:50	10/12/2015	11/3/2015	15-10064	Lead-214	LANL ER-130 Modified	1.51E+00	3.26E-01	3.36E-01	4.58E-01	2.21E-01	pCi/g
15-10064-04	DO	CP5005S14-15	10/06/15 09:50	10/12/2015	11/3/2015	15-10064	Radium-226	LANL ER-130 Modified	1.71E+00	3.00E-01	3.12E-01	3.04E-01	2.09E+00	pCi/g
15-10064-04	DO	CP5005S14-15	10/06/15 09:50	10/12/2015	11/3/2015	15-10064	Radium-228	LANL ER-130 Modified	1.48E+00	6.03E-01	6.07E-01	1.25E+00	5.98E-01	pCi/g
15-10064-04	DO	CP5005S14-15	10/06/15 09:50	10/12/2015	11/3/2015	15-10064	Thorium-234	LANL ER-130 Modified	7.70E-01	1.61E+00	1.61E+00	2.47E+00	1.21E+00	pCi/g
15-10064-04	DO	CP5005S14-15	10/06/15 09:50	10/12/2015	11/3/2015	15-10064	Thallium-208	LANL ER-130 Modified	1.30E+00	3.28E-01	3.35E-01	5.03E-01	2.77E-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

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

Report To:

SDG: 15-10064
Project: PAP-KAN
Analysis Category: ENVIRONMENTAL
Sample Matrix: 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
15-10064-05	TRG	CP5005S16-17 5	10/06/15 10:00	10/12/2015	11/3/2015	15-10064	Actinium-228	LANL ER-130 Modified	1.46E+00	2.34E-01	2.46E-01	4.59E-01	2.20E-01	pCi/g
15-10064-05	TRG	CP5005S16-17 5	10/06/15 10:00	10/12/2015	11/3/2015	15-10064	Bismuth-214	LANL ER-130 Modified	1.40E+00	2.01E-01	2.13E-01	2.43E-01	1.17E-01	pCi/g
15-10064-05	TRG	CP5005S16-17 5	10/06/15 10:00	10/12/2015	11/3/2015	15-10064	Potassium-40	LANL ER-130 Modified	2.23E+01	2.48E+00	2.73E+00	8.66E-01	3.96E-01	pCi/g
15-10064-05	TRG	CP5005S16-17 5	10/06/15 10:00	10/12/2015	11/3/2015	15-10064	Lead-212	LANL ER-130 Modified	1.58E+00	1.84E-01	2.01E-01	2.50E-01	1.23E-01	pCi/g
15-10064-05	TRG	CP5005S16-17 5	10/06/15 10:00	10/12/2015	11/3/2015	15-10064	Lead-214	LANL ER-130 Modified	1.54E+00	1.66E-01	1.84E-01	2.29E-01	1.11E-01	pCi/g
15-10064-05	TRG	CP5005S16-17 5	10/06/15 10:00	10/12/2015	11/3/2015	15-10064	Radium-226	LANL ER-130 Modified	1.40E+00	2.01E-01	2.13E-01	2.43E-01	1.29E+00	pCi/g
15-10064-05	TRG	CP5005S16-17 5	10/06/15 10:00	10/12/2015	11/3/2015	15-10064	Radium-228	LANL ER-130 Modified	1.46E+00	2.34E-01	2.46E-01	4.59E-01	2.20E-01	pCi/g
15-10064-05	TRG	CP5005S16-17 5	10/06/15 10:00	10/12/2015	11/3/2015	15-10064	Thorium-234	LANL ER-130 Modified	2.01E+00	1.87E+00	1.87E+00	3.11E+00	1.53E+00	pCi/g
15-10064-05	TRG	CP5005S16-17 5	10/06/15 10:00	10/12/2015	11/3/2015	15-10064	Thallium-208	LANL ER-130 Modified	1.34E+00	1.88E-01	2.01E-01	9.78E-02	1.70E-01	pCi/g
15-10064-06	TRG	CP2211S01-02	10/06/15 10:20	10/12/2015	11/3/2015	15-10064	Actinium-228	LANL ER-130 Modified	8.34E-01	2.28E-01	2.32E-01	3.68E-01	1.75E-01	pCi/g
15-10064-06	TRG	CP2211S01-02	10/06/15 10:20	10/12/2015	11/3/2015	15-10064	Bismuth-214	LANL ER-130 Modified	2.20E+00	2.08E-01	2.37E-01	1.93E-01	9.26E-02	pCi/g
15-10064-06	TRG	CP2211S01-02	10/06/15 10:20	10/12/2015	11/3/2015	15-10064	Potassium-40	LANL ER-130 Modified	1.34E+01	1.86E+00	1.98E+00	1.08E+00	5.05E-01	pCi/g
15-10064-06	TRG	CP2211S01-02	10/06/15 10:20	10/12/2015	11/3/2015	15-10064	Lead-212	LANL ER-130 Modified	9.62E-01	1.40E-01	1.48E-01	2.03E-01	9.93E-02	pCi/g
15-10064-06	TRG	CP2211S01-02	10/06/15 10:20	10/12/2015	11/3/2015	15-10064	Lead-214	LANL ER-130 Modified	2.41E+00	2.22E-01	2.54E-01	2.07E-01	1.00E-01	pCi/g
15-10064-06	TRG	CP2211S01-02	10/06/15 10:20	10/12/2015	11/3/2015	15-10064	Radium-226	LANL ER-130 Modified	2.20E+00	2.08E-01	2.37E-01	1.93E-01	1.27E+00	pCi/g
15-10064-06	TRG	CP2211S01-02	10/06/15 10:20	10/12/2015	11/3/2015	15-10064	Radium-228	LANL ER-130 Modified	8.34E-01	2.28E-01	2.32E-01	3.68E-01	1.75E-01	pCi/g
15-10064-06	TRG	CP2211S01-02	10/06/15 10:20	10/12/2015	11/3/2015	15-10064	Thorium-234	LANL ER-130 Modified	1.93E+00	1.39E+00	1.40E+00	2.30E+00	1.13E+00	pCi/g
15-10064-06	TRG	CP2211S01-02	10/06/15 10:20	10/12/2015	11/3/2015	15-10064	Thallium-208	LANL ER-130 Modified	7.34E-01	1.35E-01	1.40E-01	1.76E-01	1.36E-01	pCi/g
15-10064-07	TRG	CP2211S04-05	10/06/15 10:40	10/12/2015	11/3/2015	15-10064	Actinium-228	LANL ER-130 Modified	1.40E+00	3.10E-01	3.19E-01	5.47E-01	2.61E-01	pCi/g
15-10064-07	TRG	CP2211S04-05	10/06/15 10:40	10/12/2015	11/3/2015	15-10064	Bismuth-214	LANL ER-130 Modified	1.40E+00	2.13E-01	2.25E-01	3.06E-01	1.48E-01	pCi/g
15-10064-07	TRG	CP2211S04-05	10/06/15 10:40	10/12/2015	11/3/2015	15-10064	Potassium-40	LANL ER-130 Modified	1.85E+01	2.25E+00	2.44E+00	9.61E-01	4.32E-01	pCi/g
15-10064-07	TRG	CP2211S04-05	10/06/15 10:40	10/12/2015	11/3/2015	15-10064	Lead-212	LANL ER-130 Modified	1.63E+00	1.84E-01	2.02E-01	3.04E-01	1.49E-01	pCi/g
15-10064-07	TRG	CP2211S04-05	10/06/15 10:40	10/12/2015	11/3/2015	15-10064	Lead-214	LANL ER-130 Modified	1.56E+00	2.20E-01	2.34E-01	3.01E-01	1.46E-01	pCi/g
15-10064-07	TRG	CP2211S04-05	10/06/15 10:40	10/12/2015	11/3/2015	15-10064	Radium-226	LANL ER-130 Modified	1.40E+00	2.13E-01	2.25E-01	3.06E-01	1.49E+00	pCi/g
15-10064-07	TRG	CP2211S04-05	10/06/15 10:40	10/12/2015	11/3/2015	15-10064	Radium-228	LANL ER-130 Modified	1.40E+00	3.10E-01	3.19E-01	5.47E-01	2.61E-01	pCi/g
15-10064-07	TRG	CP2211S04-05	10/06/15 10:40	10/12/2015	11/3/2015	15-10064	Thorium-234	LANL ER-130 Modified	1.65E+00	1.48E+00	1.48E+00	2.46E+00	1.21E+00	pCi/g
15-10064-07	TRG	CP2211S04-05	10/06/15 10:40	10/12/2015	11/3/2015	15-10064	Thallium-208	LANL ER-130 Modified	1.26E+00	2.26E-01	2.35E-01	1.85E-01	2.33E-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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ENVIRONMENTAL
SO

Work Order Details:

SDG: **15-10064**
Project: **PAP-KAN**
Analysis Category: **ENVIRONMENTAL**
Sample Matrix: **SO**

Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	GSU	MDA	CV	Report Units
15-10064-08	TRG	CP2211S06-07	10/06/15 10:50	10/12/2015	11/3/2015	15-10064	Actinium-228	LANL ER-130 Modified	1.34E+00	2.06E-01	2.17E-01	3.89E-01	1.86E-01	pCi/g
15-10064-08	TRG	CP2211S06-07	10/06/15 10:50	10/12/2015	11/3/2015	15-10064	Bismuth-214	LANL ER-130 Modified	1.32E+00	1.61E-01	1.75E-01	1.86E-01	8.93E-02	pCi/g
15-10064-08	TRG	CP2211S06-07	10/06/15 10:50	10/12/2015	11/3/2015	15-10064	Potassium-40	LANL ER-130 Modified	1.93E+01	2.19E+00	2.40E+00	1.04E+00	4.90E-01	pCi/g
15-10064-08	TRG	CP2211S06-07	10/06/15 10:50	10/12/2015	11/3/2015	15-10064	Lead-212	LANL ER-130 Modified	1.53E+00	1.68E-01	1.86E-01	2.12E-01	1.04E-01	pCi/g
15-10064-08	TRG	CP2211S06-07	10/06/15 10:50	10/12/2015	11/3/2015	15-10064	Lead-214	LANL ER-130 Modified	1.52E+00	1.57E-01	1.76E-01	2.25E-01	1.10E-01	pCi/g
15-10064-08	TRG	CP2211S06-07	10/06/15 10:50	10/12/2015	11/3/2015	15-10064	Radium-226	LANL ER-130 Modified	1.32E+00	1.61E-01	1.75E-01	1.86E-01	1.24E+00	pCi/g
15-10064-08	TRG	CP2211S06-07	10/06/15 10:50	10/12/2015	11/3/2015	15-10064	Radium-228	LANL ER-130 Modified	1.34E+00	2.06E-01	2.17E-01	3.89E-01	1.86E-01	pCi/g
15-10064-08	TRG	CP2211S06-07	10/06/15 10:50	10/12/2015	11/3/2015	15-10064	Thorium-234	LANL ER-130 Modified	2.15E+00	1.38E+00	1.39E+00	2.28E+00	1.12E+00	pCi/g
15-10064-08	TRG	CP2211S06-07	10/06/15 10:50	10/12/2015	11/3/2015	15-10064	Thallium-208	LANL ER-130 Modified	1.18E+00	1.56E-01	1.67E-01	1.29E-01	1.14E-01	pCi/g
15-10064-09	TRG	CP2211S11-12	10/06/15 11:10	10/12/2015	11/3/2015	15-10064	Actinium-228	LANL ER-130 Modified	1.44E+00	1.94E-01	2.07E-01	4.07E-01	1.95E-01	pCi/g
15-10064-09	TRG	CP2211S11-12	10/06/15 11:10	10/12/2015	11/3/2015	15-10064	Bismuth-214	LANL ER-130 Modified	1.30E+00	1.68E-01	1.81E-01	2.18E-01	1.05E-01	pCi/g
15-10064-09	TRG	CP2211S11-12	10/06/15 11:10	10/12/2015	11/3/2015	15-10064	Potassium-40	LANL ER-130 Modified	1.96E+01	2.48E+00	2.68E+00	9.73E-01	4.52E-01	pCi/g
15-10064-09	TRG	CP2211S11-12	10/06/15 11:10	10/12/2015	11/3/2015	15-10064	Lead-212	LANL ER-130 Modified	1.29E+00	1.61E-01	1.74E-01	2.27E-01	1.11E-01	pCi/g
15-10064-09	TRG	CP2211S11-12	10/06/15 11:10	10/12/2015	11/3/2015	15-10064	Lead-214	LANL ER-130 Modified	1.51E+00	1.71E-01	1.88E-01	1.99E-01	9.61E-02	pCi/g
15-10064-09	TRG	CP2211S11-12	10/06/15 11:10	10/12/2015	11/3/2015	15-10064	Radium-226	LANL ER-130 Modified	1.30E+00	1.68E-01	1.81E-01	2.18E-01	1.26E+00	pCi/g
15-10064-09	TRG	CP2211S11-12	10/06/15 11:10	10/12/2015	11/3/2015	15-10064	Radium-228	LANL ER-130 Modified	1.44E+00	1.94E-01	2.07E-01	4.07E-01	1.95E-01	pCi/g
15-10064-09	TRG	CP2211S11-12	10/06/15 11:10	10/12/2015	11/3/2015	15-10064	Thorium-234	LANL ER-130 Modified	2.25E+00	8.92E-01	9.00E-01	1.48E+00	7.22E-01	pCi/g
15-10064-09	TRG	CP2211S11-12	10/06/15 11:10	10/12/2015	11/3/2015	15-10064	Thallium-208	LANL ER-130 Modified	1.03E+00	1.59E-01	1.67E-01	1.67E-01	1.52E-01	pCi/g
15-10064-10	TRG	CP2211S13-14	10/06/15 11:20	10/12/2015	11/3/2015	15-10064	Actinium-228	LANL ER-130 Modified	1.54E+00	2.42E-01	2.54E-01	5.16E-01	2.45E-01	pCi/g
15-10064-10	TRG	CP2211S13-14	10/06/15 11:20	10/12/2015	11/3/2015	15-10064	Bismuth-214	LANL ER-130 Modified	1.17E+00	1.70E-01	1.80E-01	4.04E-01	1.97E-01	pCi/g
15-10064-10	TRG	CP2211S13-14	10/06/15 11:20	10/12/2015	11/3/2015	15-10064	Potassium-40	LANL ER-130 Modified	1.84E+01	2.35E+00	2.53E+00	1.50E+00	7.02E-01	pCi/g
15-10064-10	TRG	CP2211S13-14	10/06/15 11:20	10/12/2015	11/3/2015	15-10064	Lead-212	LANL ER-130 Modified	1.49E+00	1.70E-01	1.86E-01	2.47E-01	1.21E-01	pCi/g
15-10064-10	TRG	CP2211S13-14	10/06/15 11:20	10/12/2015	11/3/2015	15-10064	Lead-214	LANL ER-130 Modified	1.12E+00	1.77E-01	1.86E-01	2.50E-01	1.21E-01	pCi/g
15-10064-10	TRG	CP2211S13-14	10/06/15 11:20	10/12/2015	11/3/2015	15-10064	Radium-226	LANL ER-130 Modified	1.17E+00	1.70E-01	1.80E-01	4.04E-01	1.22E+00	pCi/g
15-10064-10	TRG	CP2211S13-14	10/06/15 11:20	10/12/2015	11/3/2015	15-10064	Radium-228	LANL ER-130 Modified	1.54E+00	2.42E-01	2.54E-01	5.16E-01	2.45E-01	pCi/g
15-10064-10	TRG	CP2211S13-14	10/06/15 11:20	10/12/2015	11/3/2015	15-10064	Thorium-234	LANL ER-130 Modified	1.47E+00	1.77E+00	1.77E+00	2.96E+00	1.46E+00	pCi/g
15-10064-10	TRG	CP2211S13-14	10/06/15 11:20	10/12/2015	11/3/2015	15-10064	Thallium-208	LANL ER-130 Modified	1.12E+00	2.16E-01	2.24E-01	2.58E-01	2.22E-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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Work Order Details:

SDG:
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 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
15-10064-11	TRG	CP2211S16-17	10/06/15 11:30	10/12/2015	11/3/2015	15-10064	Actinium-228	LANL ER-130 Modified	1.85E+00	5.56E-01	5.64E-01	1.61E+00	7.73E-01	pCi/g
15-10064-11	TRG	CP2211S16-17	10/06/15 11:30	10/12/2015	11/3/2015	15-10064	Bismuth-214	LANL ER-130 Modified	1.47E+00	3.40E-01	3.49E-01	5.23E-01	2.49E-01	pCi/g
15-10064-11	TRG	CP2211S16-17	10/06/15 11:30	10/12/2015	11/3/2015	15-10064	Potassium-40	LANL ER-130 Modified	2.33E+01	4.03E+00	4.21E+00	1.97E+00	8.57E-01	pCi/g
15-10064-11	TRG	CP2211S16-17	10/06/15 11:30	10/12/2015	11/3/2015	15-10064	Lead-212	LANL ER-130 Modified	2.20E+00	4.49E-01	4.63E-01	5.83E-01	2.86E-01	pCi/g
15-10064-11	TRG	CP2211S16-17	10/06/15 11:30	10/12/2015	11/3/2015	15-10064	Lead-214	LANL ER-130 Modified	1.58E+00	3.55E-01	3.64E-01	4.72E-01	2.27E-01	pCi/g
15-10064-11	TRG	CP2211S16-17	10/06/15 11:30	10/12/2015	11/3/2015	15-10064	Radium-226	LANL ER-130 Modified	1.47E+00	3.40E-01	3.49E-01	5.23E-01	2.56E+00	pCi/g
15-10064-11	TRG	CP2211S16-17	10/06/15 11:30	10/12/2015	11/3/2015	15-10064	Radium-228	LANL ER-130 Modified	1.85E+00	5.56E-01	5.64E-01	1.61E+00	7.73E-01	pCi/g
15-10064-11	TRG	CP2211S16-17	10/06/15 11:30	10/12/2015	11/3/2015	15-10064	Thorium-234	LANL ER-130 Modified	3.20E-01	1.76E+00	1.76E+00	2.69E+00	1.32E+00	pCi/g
15-10064-11	TRG	CP2211S16-17	10/06/15 11:30	10/12/2015	11/3/2015	15-10064	Thallium-208	LANL ER-130 Modified	1.46E+00	4.08E-01	4.15E-01	6.18E-01	4.09E-01	pCi/g
15-10064-12	TRG	CP2211S18-19	10/06/15 11:40	10/12/2015	11/3/2015	15-10064	Actinium-228	LANL ER-130 Modified	1.66E+00	2.36E-01	2.51E-01	3.54E-01	1.67E-01	pCi/g
15-10064-12	TRG	CP2211S18-19	10/06/15 11:40	10/12/2015	11/3/2015	15-10064	Bismuth-214	LANL ER-130 Modified	1.52E+00	1.75E-01	1.92E-01	2.01E-01	9.59E-02	pCi/g
15-10064-12	TRG	CP2211S18-19	10/06/15 11:40	10/12/2015	11/3/2015	15-10064	Potassium-40	LANL ER-130 Modified	2.28E+01	2.54E+00	2.80E+00	1.07E+00	4.94E-01	pCi/g
15-10064-12	TRG	CP2211S18-19	10/06/15 11:40	10/12/2015	11/3/2015	15-10064	Lead-212	LANL ER-130 Modified	1.70E+00	1.93E-01	2.12E-01	2.96E-01	1.46E-01	pCi/g
15-10064-12	TRG	CP2211S18-19	10/06/15 11:40	10/12/2015	11/3/2015	15-10064	Lead-214	LANL ER-130 Modified	1.78E+00	1.89E-01	2.10E-01	2.92E-01	1.42E-01	pCi/g
15-10064-12	TRG	CP2211S18-19	10/06/15 11:40	10/12/2015	11/3/2015	15-10064	Radium-226	LANL ER-130 Modified	1.52E+00	1.75E-01	1.92E-01	2.01E-01	1.34E+00	pCi/g
15-10064-12	TRG	CP2211S18-19	10/06/15 11:40	10/12/2015	11/3/2015	15-10064	Radium-228	LANL ER-130 Modified	1.66E+00	2.36E-01	2.51E-01	3.54E-01	1.67E-01	pCi/g
15-10064-12	TRG	CP2211S18-19	10/06/15 11:40	10/12/2015	11/3/2015	15-10064	Thorium-234	LANL ER-130 Modified	1.71E+00	1.63E+00	1.63E+00	2.72E+00	1.34E+00	pCi/g
15-10064-12	TRG	CP2211S18-19	10/06/15 11:40	10/12/2015	11/3/2015	15-10064	Thallium-208	LANL ER-130 Modified	1.47E+00	1.94E-01	2.08E-01	1.06E-01	1.49E-01	pCi/g
15-10064-13	TRG	CP2211S21-22	10/06/15 11:50	10/12/2015	11/3/2015	15-10064	Actinium-228	LANL ER-130 Modified	1.55E+00	2.34E-01	2.47E-01	4.29E-01	2.05E-01	pCi/g
15-10064-13	TRG	CP2211S21-22	10/06/15 11:50	10/12/2015	11/3/2015	15-10064	Bismuth-214	LANL ER-130 Modified	1.39E+00	1.82E-01	1.96E-01	2.21E-01	1.06E-01	pCi/g
15-10064-13	TRG	CP2211S21-22	10/06/15 11:50	10/12/2015	11/3/2015	15-10064	Potassium-40	LANL ER-130 Modified	2.13E+01	2.70E+00	2.91E+00	1.09E+00	5.08E-01	pCi/g
15-10064-13	TRG	CP2211S21-22	10/06/15 11:50	10/12/2015	11/3/2015	15-10064	Lead-212	LANL ER-130 Modified	1.49E+00	1.83E-01	1.98E-01	2.62E-01	1.28E-01	pCi/g
15-10064-13	TRG	CP2211S21-22	10/06/15 11:50	10/12/2015	11/3/2015	15-10064	Lead-214	LANL ER-130 Modified	1.48E+00	1.66E-01	1.83E-01	2.28E-01	1.10E-01	pCi/g
15-10064-13	TRG	CP2211S21-22	10/06/15 11:50	10/12/2015	11/3/2015	15-10064	Radium-226	LANL ER-130 Modified	1.39E+00	1.82E-01	1.96E-01	2.21E-01	1.19E+00	pCi/g
15-10064-13	TRG	CP2211S21-22	10/06/15 11:50	10/12/2015	11/3/2015	15-10064	Radium-228	LANL ER-130 Modified	1.55E+00	2.34E-01	2.47E-01	4.29E-01	2.05E-01	pCi/g
15-10064-13	TRG	CP2211S21-22	10/06/15 11:50	10/12/2015	11/3/2015	15-10064	Thorium-234	LANL ER-130 Modified	1.13E+00	1.29E+00	1.28E+00	2.14E+00	1.05E+00	pCi/g
15-10064-13	TRG	CP2211S21-22	10/06/15 11:50	10/12/2015	11/3/2015	15-10064	Thallium-208	LANL ER-130 Modified	1.23E+00	1.60E-01	1.72E-01	1.15E-01	1.26E-01	pCi/g

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



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Eberline Analytical Final Report of Analysis

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

SDG: 15-10064
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
15-10064-01	LCS	KNOWN	10/12/15 00:00	10/12/2015	10/21/2015	15-10064	Thorium-228	EML Th-01 Modified	4.71E+00	1.70E-01				pCi/g
15-10064-01	LCS	SPIKE	10/12/15 00:00	10/12/2015	10/21/2015	15-10064	Thorium-228	EML Th-01 Modified	5.29E+00	9.24E-01	1.05E+00	7.12E-02	4.25E-03	pCi/g
15-10064-02	MBL	BLANK	10/12/15 00:00	10/12/2015	10/21/2015	15-10064	Thorium-228	EML Th-01 Modified	5.35E-03	3.35E-02	3.35E-02	8.09E-02	1.83E-02	pCi/g
15-10064-03	DUP	CP5006S14-15	10/06/15 09:50	10/12/2015	10/21/2015	15-10064	Thorium-228	EML Th-01 Modified	1.62E+00	5.17E-01	5.39E-01	1.29E-01	2.21E-02	pCi/g
15-10064-04	DO	CP5006S14-15	10/06/15 09:50	10/12/2015	10/21/2015	15-10064	Thorium-228	EML Th-01 Modified	1.60E+00	4.17E-01	4.43E-01	8.41E-02	1.44E-02	pCi/g
15-10064-05	TRG	CP5006S16-17 5	10/06/15 10:00	10/12/2015	10/21/2015	15-10064	Thorium-228	EML Th-01 Modified	1.64E+00	4.00E-01	4.28E-01	1.50E-01	6.83E-02	pCi/g
15-10064-06	TRG	CP221S01-02	10/06/15 10:20	10/12/2015	10/21/2015	15-10064	Thorium-228	EML Th-01 Modified	8.97E-01	2.70E-01	2.83E-01	1.17E-01	2.94E-02	pCi/g
15-10064-07	TRG	CP221S04-05	10/06/15 10:40	10/12/2015	10/21/2015	15-10064	Thorium-228	EML Th-01 Modified	1.33E+00	3.36E-01	3.66E-01	7.63E-02	1.57E-02	pCi/g
15-10064-08	TRG	CP221S06-07	10/06/15 10:50	10/12/2015	10/21/2015	15-10064	Thorium-228	EML Th-01 Modified	1.21E+00	3.03E-01	3.23E-01	6.29E-02	9.63E-03	pCi/g
15-10064-09	TRG	CP221S11-12	10/06/15 11:10	10/12/2015	10/21/2015	15-10064	Thorium-228	EML Th-01 Modified	1.01E+00	2.58E-01	2.75E-01	7.16E-02	1.71E-02	pCi/g
15-10064-10	TRG	CP221S13-14	10/06/15 11:20	10/12/2015	10/21/2015	15-10064	Thorium-228	EML Th-01 Modified	1.56E+00	3.79E-01	4.07E-01	7.86E-02	1.63E-02	pCi/g
15-10064-11	TRG	CP221S16-17	10/06/15 11:30	10/12/2015	10/21/2015	15-10064	Thorium-228	EML Th-01 Modified	1.35E+00	3.37E-01	3.60E-01	7.22E-02	1.37E-02	pCi/g
15-10064-12	TRG	CP221S18-19	10/06/15 11:40	10/12/2015	10/21/2015	15-10064	Thorium-228	EML Th-01 Modified	1.37E+00	3.27E-01	3.52E-01	4.77E-02	4.12E-03	pCi/g
15-10064-13	TRG	CP221S21-22	10/06/15 11:50	10/12/2015	10/21/2015	15-10064	Thorium-228	EML Th-01 Modified	1.18E+00	2.74E-01	2.96E-01	5.26E-02	8.02E-03	pCi/g
15-10064-01	LCS	KNOWN	10/12/15 00:00	10/12/2015	10/21/2015	15-10064	Thorium-230	EML Th-01 Modified	5.30E+00	1.43E-01				pCi/g
15-10064-01	LCS	SPIKE	10/12/15 00:00	10/12/2015	10/21/2015	15-10064	Thorium-230	EML Th-01 Modified	6.34E+00	1.07E+00	1.33E+00	7.13E-02	9.09E-02	pCi/g
15-10064-02	MBL	BLANK	10/12/15 00:00	10/12/2015	10/21/2015	15-10064	Thorium-230	EML Th-01 Modified	8.42E-02	6.11E-02	6.16E-02	7.81E-02	7.41E-02	pCi/g
15-10064-03	DUP	CP5006S14-15	10/06/15 09:50	10/12/2015	10/21/2015	15-10064	Thorium-230	EML Th-01 Modified	2.34E+00	6.86E-01	7.45E-01	9.87E-02	1.11E-01	pCi/g
15-10064-04	DO	CP5006S14-15	10/06/15 09:50	10/12/2015	10/21/2015	15-10064	Thorium-230	EML Th-01 Modified	1.72E+00	4.38E-01	4.87E-01	6.91E-02	7.44E-02	pCi/g
15-10064-05	TRG	CP5006S16-17 5	10/06/15 10:00	10/12/2015	10/21/2015	15-10064	Thorium-230	EML Th-01 Modified	1.46E+00	3.61E-01	4.04E-01	1.13E-01	8.99E-02	pCi/g
15-10064-06	TRG	CP221S01-02	10/06/15 10:20	10/12/2015	10/21/2015	15-10064	Thorium-230	EML Th-01 Modified	2.26E+00	5.30E-01	5.99E-01	7.40E-02	6.34E-02	pCi/g
15-10064-07	TRG	CP221S04-05	10/06/15 10:40	10/12/2015	10/21/2015	15-10064	Thorium-230	EML Th-01 Modified	1.89E+00	4.33E-01	4.92E-01	6.91E-02	6.74E-02	pCi/g
15-10064-08	TRG	CP221S06-07	10/06/15 10:50	10/12/2015	10/21/2015	15-10064	Thorium-230	EML Th-01 Modified	1.40E+00	3.35E-01	3.77E-01	4.96E-02	5.70E-02	pCi/g
15-10064-09	TRG	CP221S11-12	10/06/15 11:10	10/12/2015	10/21/2015	15-10064	Thorium-230	EML Th-01 Modified	1.04E+00	2.62E-01	2.92E-01	6.34E-02	6.11E-02	pCi/g
15-10064-10	TRG	CP221S13-14	10/06/15 11:20	10/12/2015	10/21/2015	15-10064	Thorium-230	EML Th-01 Modified	1.43E+00	3.56E-01	3.98E-01	9.27E-02	8.51E-02	pCi/g
15-10064-11	TRG	CP221S16-17	10/06/15 11:30	10/12/2015	10/21/2015	15-10064	Thorium-230	EML Th-01 Modified	1.36E+00	3.38E-01	3.77E-01	5.67E-02	6.19E-02	pCi/g
15-10064-12	TRG	CP221S18-19	10/06/15 11:40	10/12/2015	10/21/2015	15-10064	Thorium-230	EML Th-01 Modified	1.44E+00	3.39E-01	3.83E-01	7.00E-02	6.58E-02	pCi/g
15-10064-13	TRG	CP221S21-22	10/06/15 11:50	10/12/2015	10/21/2015	15-10064	Thorium-230	EML Th-01 Modified	1.41E+00	3.11E-01	3.57E-01	4.88E-02	5.04E-02	pCi/g

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

Report To:

Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	CV	Report Units
15-10064-01	LCS	KNOWN	10/12/15 00:00	10/12/2015	10/21/2015	15-10064	Thorium-232	EML Th-01 Modified	4.71E+00	1.70E-01				pCi/g
15-10064-01	LCS	SPIKE	10/12/15 00:00	10/12/2015	10/21/2015	15-10064	Thorium-232	EML Th-01 Modified	5.33E+00	9.29E-01	1.04E+00	9.62E-02	1.28E-02	pCi/g
15-10064-02	MBL	BLANK	10/12/15 00:00	10/12/2015	10/21/2015	15-10064	Thorium-232	EML Th-01 Modified	4.33E-02	5.14E-02	5.15E-02	7.49E-02	1.43E-02	pCi/g
15-10064-03	DUP	CP5006S14-15	10/06/15 09:50	10/12/2015	10/21/2015	15-10064	Thorium-232	EML Th-01 Modified	1.84E+00	5.89E-01	5.91E-01	1.14E-01	1.50E-02	pCi/g
15-10064-04	DO	CP5006S14-15	10/06/15 09:50	10/12/2015	10/21/2015	15-10064	Thorium-232	EML Th-01 Modified	1.68E+00	4.31E-01	4.56E-01	7.88E-02	8.83E-04	pCi/g
15-10064-05	TRG	CP5006S16-17 5	10/06/15 10:00	10/12/2015	10/21/2015	15-10064	Thorium-232	EML Th-01 Modified	1.25E+00	3.20E-01	3.38E-01	7.13E-02	9.17E-03	pCi/g
15-10064-06	TRG	CP2211S01-02	10/06/15 10:20	10/12/2015	10/21/2015	15-10064	Thorium-232	EML Th-01 Modified	7.39E-01	2.42E-01	2.42E-01	7.39E-02	8.28E-04	pCi/g
15-10064-07	TRG	CP2211S04-05	10/06/15 10:40	10/12/2015	10/21/2015	15-10064	Thorium-232	EML Th-01 Modified	1.18E+00	3.03E-01	3.20E-01	6.18E-02	8.16E-03	pCi/g
15-10064-08	TRG	CP2211S08-07	10/06/15 10:50	10/12/2015	10/21/2015	15-10064	Thorium-232	EML Th-01 Modified	1.19E+00	2.97E-01	3.15E-01	4.32E-02	2.46E-03	pCi/g
15-10064-09	TRG	CP2211S11-12	10/06/15 11:10	10/12/2015	10/21/2015	15-10064	Thorium-232	EML Th-01 Modified	1.04E+00	2.63E-01	2.78E-01	4.01E-02	2.28E-03	pCi/g
15-10064-10	TRG	CP2211S13-14	10/06/15 11:20	10/12/2015	10/21/2015	15-10064	Thorium-232	EML Th-01 Modified	1.39E+00	3.47E-01	3.68E-01	6.37E-02	8.44E-03	pCi/g
15-10064-11	TRG	CP2211S16-17	10/06/15 11:30	10/12/2015	10/21/2015	15-10064	Thorium-232	EML Th-01 Modified	1.15E+00	3.00E-01	3.17E-01	6.47E-02	7.28E-04	pCi/g
15-10064-12	TRG	CP2211S18-19	10/06/15 11:40	10/12/2015	10/21/2015	15-10064	Thorium-232	EML Th-01 Modified	1.19E+00	2.94E-01	3.12E-01	5.16E-02	5.67E-03	pCi/g
15-10064-13	TRG	CP2211S21-22	10/06/15 11:50	10/12/2015	10/21/2015	15-10064	Thorium-232	EML Th-01 Modified	1.37E+00	3.05E-01	3.28E-01	5.18E-02	5.81E-04	pCi/g
15-10064-01	LCS	KNOWN	10/12/15 00:00	10/12/2015	10/22/2015	15-10064	Uranium-234	EML U-02 Modified	8.11E+00	2.92E-01				pCi/g
15-10064-01	LCS	SPIKE	10/12/15 00:00	10/12/2015	10/22/2015	15-10064	Uranium-234	EML U-02 Modified	7.68E+00	1.16E+00	1.28E+00	1.29E-01	3.47E-02	pCi/g
15-10064-02	MBL	BLANK	10/12/15 00:00	10/12/2015	10/22/2015	15-10064	Uranium-234	EML U-02 Modified	5.88E-02	4.73E-02	4.75E-02	4.07E-02	3.27E-03	pCi/g
15-10064-03	DUP	CP5006S14-15	10/06/15 09:50	10/12/2015	10/22/2015	15-10064	Uranium-234	EML U-02 Modified	1.17E+00	2.80E-01	2.73E-01	4.56E-02	3.67E-03	pCi/g
15-10064-04	DO	CP5006S14-15	10/06/15 09:50	10/12/2015	10/22/2015	15-10064	Uranium-234	EML U-02 Modified	1.24E+00	2.56E-01	2.71E-01	4.64E-02	4.90E-03	pCi/g
15-10064-05	TRG	CP5006S16-17 5	10/06/15 10:00	10/12/2015	10/22/2015	15-10064	Uranium-234	EML U-02 Modified	1.10E+00	2.58E-01	2.69E-01	6.08E-02	7.84E-03	pCi/g
15-10064-06	TRG	CP2211S01-02	10/06/15 10:20	10/12/2015	10/22/2015	15-10064	Uranium-234	EML U-02 Modified	2.04E+00	3.67E-01	3.95E-01	7.73E-02	2.08E-02	pCi/g
15-10064-07	TRG	CP2211S04-05	10/06/15 10:40	10/12/2015	10/22/2015	15-10064	Uranium-234	EML U-02 Modified	1.18E+00	2.36E-01	2.50E-01	4.19E-02	4.41E-03	pCi/g
15-10064-08	TRG	CP2211S08-07	10/06/15 10:50	10/12/2015	10/22/2015	15-10064	Uranium-234	EML U-02 Modified	1.34E+00	2.65E-01	2.81E-01	5.63E-02	9.56E-03	pCi/g
15-10064-09	TRG	CP2211S11-12	10/06/15 11:10	10/12/2015	10/22/2015	15-10064	Uranium-234	EML U-02 Modified	9.73E-01	2.16E-01	2.27E-01	3.91E-02	3.14E-03	pCi/g
15-10064-10	TRG	CP2211S13-14	10/06/15 11:20	10/12/2015	10/22/2015	15-10064	Uranium-234	EML U-02 Modified	7.72E-01	1.76E-01	1.84E-01	4.91E-02	8.31E-03	pCi/g
15-10064-11	TRG	CP2211S16-17	10/06/15 11:30	10/12/2015	10/22/2015	15-10064	Uranium-234	EML U-02 Modified	8.64E-01	2.10E-01	2.19E-01	4.30E-02	3.45E-03	pCi/g
15-10064-12	TRG	CP2211S18-19	10/06/15 11:40	10/12/2015	10/22/2015	15-10064	Uranium-234	EML U-02 Modified	1.16E+00	2.45E-01	2.59E-01	5.45E-02	8.17E-03	pCi/g
15-10064-13	TRG	CP2211S21-22	10/06/15 11:50	10/12/2015	10/22/2015	15-10064	Uranium-234	EML U-02 Modified	1.13E+00	2.43E-01	2.56E-01	5.54E-02	8.27E-03	pCi/g

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Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	CV	Report Units
15-10064-01	LCS	SPIKE	10/12/2015 00:00	10/12/2015	10/22/2015	15-10064	Uranium-235	EML U-02 Modified	3.54E-01	1.81E-01	1.83E-01	1.39E-01	2.14E-02	pCi/g
15-10064-02	MBL	BLANK	10/12/2015 00:00	10/12/2015	10/22/2015	15-10064	Uranium-235	EML U-02 Modified	4.61E-02	4.76E-02	4.77E-02	5.02E-02	2.30E-03	pCi/g
15-10064-03	DUP	CP5006S14-15	10/06/15 09:50	10/12/2015	10/22/2015	15-10064	Uranium-235	EML U-02 Modified	1.48E-01	9.31E-02	9.37E-02	8.08E-02	7.34E-04	pCi/g
15-10064-04	DO	CP5006S14-15	10/06/15 09:50	10/12/2015	10/22/2015	15-10064	Uranium-235	EML U-02 Modified	1.44E-01	8.61E-02	8.67E-02	7.18E-02	6.51E-04	pCi/g
15-10064-05	TRG	CP5006S16-17 5	10/06/15 10:00	10/12/2015	10/22/2015	15-10064	Uranium-235	EML U-02 Modified	9.77E-02	7.52E-02	7.56E-02	5.97E-02	2.75E-03	pCi/g
15-10064-06	TRG	CP2211S01-02	10/06/15 10:20	10/12/2015	10/22/2015	15-10064	Uranium-235	EML U-02 Modified	1.04E-01	8.00E-02	8.04E-02	9.25E-02	1.80E-02	pCi/g
15-10064-07	TRG	CP2211S04-05	10/06/15 10:40	10/12/2015	10/22/2015	15-10064	Uranium-235	EML U-02 Modified	8.04E-02	6.42E-02	6.45E-02	6.48E-02	5.87E-04	pCi/g
15-10064-08	TRG	CP2211S06-07	10/06/15 10:50	10/12/2015	10/22/2015	15-10064	Uranium-235	EML U-02 Modified	1.82E-01	9.33E-02	9.42E-02	5.55E-02	3.83E-03	pCi/g
15-10064-09	TRG	CP2211S11-12	10/06/15 11:10	10/12/2015	10/22/2015	15-10064	Uranium-235	EML U-02 Modified	6.74E-02	5.61E-02	5.64E-02	4.83E-02	2.22E-03	pCi/g
15-10064-10	TRG	CP2211S13-14	10/06/15 11:20	10/12/2015	10/22/2015	15-10064	Uranium-235	EML U-02 Modified	8.93E-02	6.03E-02	6.06E-02	4.22E-02	1.94E-03	pCi/g
15-10064-11	TRG	CP2211S16-17	10/06/15 11:30	10/12/2015	10/22/2015	15-10064	Uranium-235	EML U-02 Modified	6.36E-02	6.15E-02	6.16E-02	7.62E-02	6.91E-04	pCi/g
15-10064-12	TRG	CP2211S18-19	10/06/15 11:40	10/12/2015	10/22/2015	15-10064	Uranium-235	EML U-02 Modified	5.76E-02	5.28E-02	5.30E-02	4.98E-02	2.29E-03	pCi/g
15-10064-13	TRG	CP2211S21-22	10/06/15 11:50	10/12/2015	10/22/2015	15-10064	Uranium-235	EML U-02 Modified	8.45E-02	6.85E-02	6.88E-02	7.63E-02	1.06E-02	pCi/g
15-10064-01	LCS	KNOWN	10/12/2015 00:00	10/12/2015	10/22/2015	15-10064	Uranium-238	EML U-02 Modified	7.90E+00	2.84E-01				pCi/g
15-10064-01	LCS	SPIKE	10/12/2015 00:00	10/12/2015	10/22/2015	15-10064	Uranium-238	EML U-02 Modified	7.83E+00	1.17E+00	1.30E+00	9.58E-02	1.29E-02	pCi/g
15-10064-02	MBL	BLANK	10/12/2015 00:00	10/12/2015	10/22/2015	15-10064	Uranium-238	EML U-02 Modified	8.41E-02	5.80E-02	5.83E-02	4.64E-02	4.03E-03	pCi/g
15-10064-03	DUP	CP5006S14-15	10/06/15 09:50	10/12/2015	10/22/2015	15-10064	Uranium-238	EML U-02 Modified	1.28E+00	2.77E-01	2.92E-01	7.16E-02	1.38E-02	pCi/g
15-10064-04	DO	CP5006S14-15	10/06/15 09:50	10/12/2015	10/22/2015	15-10064	Uranium-238	EML U-02 Modified	1.37E+00	2.73E-01	2.90E-01	4.62E-02	4.02E-03	pCi/g
15-10064-05	TRG	CP5006S16-17 5	10/06/15 10:00	10/12/2015	10/22/2015	15-10064	Uranium-238	EML U-02 Modified	1.25E+00	2.80E-01	2.94E-01	5.52E-02	4.81E-03	pCi/g
15-10064-06	TRG	CP2211S01-02	10/06/15 10:20	10/12/2015	10/22/2015	15-10064	Uranium-238	EML U-02 Modified	2.03E+00	3.66E-01	3.94E-01	7.46E-02	1.81E-02	pCi/g
15-10064-07	TRG	CP2211S04-05	10/06/15 10:40	10/12/2015	10/22/2015	15-10064	Uranium-238	EML U-02 Modified	1.12E+00	2.28E-01	2.41E-01	5.23E-02	6.56E-04	pCi/g
15-10064-08	TRG	CP2211S06-07	10/06/15 10:50	10/12/2015	10/22/2015	15-10064	Uranium-238	EML U-02 Modified	1.33E+00	2.84E-01	2.81E-01	7.49E-02	2.15E-02	pCi/g
15-10064-09	TRG	CP2211S11-12	10/06/15 11:10	10/12/2015	10/22/2015	15-10064	Uranium-238	EML U-02 Modified	1.16E+00	2.40E-01	2.54E-01	3.90E-02	2.29E-03	pCi/g
15-10064-10	TRG	CP2211S13-14	10/06/15 11:20	10/12/2015	10/22/2015	15-10064	Uranium-238	EML U-02 Modified	8.00E-01	1.79E-01	1.86E-01	4.89E-02	6.15E-04	pCi/g
15-10064-11	TRG	CP2211S16-17	10/06/15 11:30	10/12/2015	10/22/2015	15-10064	Uranium-238	EML U-02 Modified	1.05E+00	2.37E-01	2.49E-01	4.91E-02	4.26E-03	pCi/g
15-10064-12	TRG	CP2211S18-19	10/06/15 11:40	10/12/2015	10/22/2015	15-10064	Uranium-238	EML U-02 Modified	1.03E+00	2.28E-01	2.40E-01	7.07E-02	1.71E-02	pCi/g
15-10064-13	TRG	CP2211S21-22	10/06/15 11:50	10/12/2015	10/22/2015	15-10064	Uranium-238	EML U-02 Modified	6.39E-01	2.01E-01	2.10E-01	4.08E-02	2.40E-03	pCi/g

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



EBERLINE
SERVICES

EBERLINE ANALYTICAL CORPORATION

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

SECTION V
ANALYTICAL STANDARD

U-8

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

CERTIFICATE OF CALIBRATION ALPHA STANDARD SOLUTION

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

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

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

Radioimpurities Refer to attached technical data sheet

Radioactive Daughters Refer to attached technical data sheet

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

Method of Calibration

Activity calculations are based upon known specific activity and mass.

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

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

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

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

 ERIC ALLAS
QUALITY CONTROL

29 DECEMBER 1994
Date Signed



ISOTOPE PRODUCTS LABORATORIES
3017 N. SAN FERNANDO BLVD.
BURBANK, CALIFORNIA 91504
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QUALITY CONTROL PROGRAM
MP-009

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

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

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

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

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

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

Chemical Composition of Standard Solution
Uranyl nitrate in dilute HNO₃

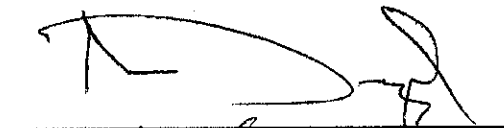
Dilution Instructions: Dilution Solvent Used 1M HNO₃

Dilute to a volume of 1000.00 milliliters


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

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

Expiration Date: July 27, 2016

Verified & Approved By 

Date: 10/1/2015 0:00

QC Approval 

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-238 = 71.182 dpm/ml X 0.49501 = 35.236 dpm/ml
All values +/- 3.6%

Isotopic ratios from manufacturer's data sheet

Expiration Date: July 27, 2016

Verified & Approved By 

Date: 10/1/2015 0:00

QC Approval 

Date: 10/1/15

RECORD COPY

Tracer Solution for Environmental Analysis & Disequilibrium Studies

Product Description & Measurement Certificate

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

Measurement Reference date: **01 March 2000**
Radioactive concentration U-232 **6.739E+03 becquerels per gram of solution**
which is equivalent to **1.821E-01 microcuries per gram of solution**
Mass of solution **5.356 grams**
Volume of solution **5.035 millilitres**
Total activity of U-232 **3.61E+04 becquerels**
which is equivalent to **9.76E-01 microcuries**

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

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

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

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

Not measured

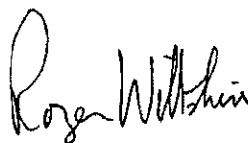
Chemical Composition Calculated weight of U-232, 4.42E-08 grams, as 2M HNO₃ solution in a flame sealed glass vial.
This Tracer solution has been produced 'carrier free'.

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

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

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

Approved
Signatory



Roger Wiltshire

Project Ref. AE2315

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



QUALITY CONTROL PROGRAM

MP-009

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

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

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

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

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

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

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 uCi 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	Half Life, Years	Half Life, Days		
^{232}U	7.200E+01	2.630E+04		
Radionuclide of Interest	Parent Solution Conc.	Reference Date		
^{232}U	2.167E+03 dpm/ml	3/1/2000 0:00		
Chemical Composition of Standard Solution				
$^{232}\text{U}(\text{NO}_3)_6$ in 2M HNO_3				

Dilution Instructions: Dilution Solvent Used 2M HNO_3

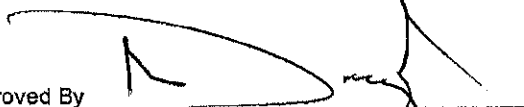
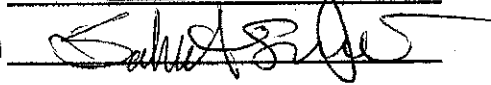
SECONDARY VOLUMETRIC DILUTION

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

NOTES:

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

Expiration Date: October 26, 2016

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

CERTIFICATE OF CALIBRATION ALPHA STANDARD SOLUTION

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

Description of Solution

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

Radioimpurities: None detected (other than daughters).

Radioactive Daughters

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

Radionuclide Concentration

(Th-232) 0.00779 μ Ci/g.

Method of Calibration

Activity calculations are based upon known specific activity and mass.

Uncertainty of Measurement

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

NIST Traceability

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

Leak Test(s)

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

Notes

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



ISOTOPE PRODUCTS LABORATORIES
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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 μ Ci
Certified Concentration μ 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 μ Ci

Chemical Composition of Standard Solution
Th(NO₃)₄·n·H₂O

Dilution Instructions: **Dilution Solvent Used** 1% Nitric Acid
Dilute to a volume of 1000.00 milliliters

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

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

Expiration Date: August 25, 2016

Verified & Approved By 

Date: 9/29/2015 0:00

QC Approval 

Date: 9/30/15



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 ^{228 & 232}Th Half Life, Years 1.405E+10 Half Life, Days 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(NO₃)₄ in 1% HNO₃

Dilution Instructions: Dilution Solvent Used 1% Nitric Acid

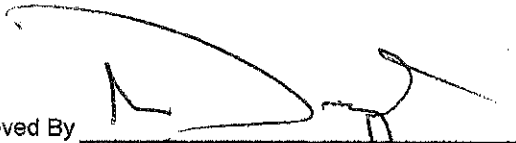
SECONDARY VOLUMETRIC DILUTION

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


NOTES:

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

Expiration Date: August 25, 2016

Verified & Approved By 

Date: 9/29/2015 0:00

QC Approval 

Date: 9/30/15

QA/QC REVIEWED

Date 10/14/91 Initials wt

CERTIFICATE OF CALIBRATION ALPHA STANDARD SOLUTION

Received
OCT 14 1991
TMA/Eberline
Oak Ridge Lab

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

Customer: TMA EBERLINE
P.O.No.: TT4944
Reference Date: November 1 1991 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

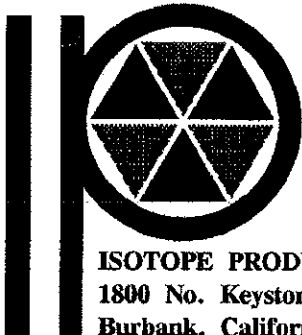
- a. Systematic uncertainty in instrument calibration: $\pm 2.0\%$
- b. Random uncertainty in assay: $\pm 0.5\%$
- c. Random uncertainty in weighing(s): $\pm 0.2\%$
- d. Total uncertainty at the 99% confidence level: $\pm 2.7\%$

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]

Date: 4/15/2015 0:00

QC Approval [Signature]

Date: 4/15/15



QUALITY CONTROL PROGRAM
MP-009

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

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

Solution Reference #		MP-009 IPL 388-116	Date	4/15/2015 0:00
Principal Radionuclide		²³⁰ Th	Solution #	Th-1b
Half Life, Years		7.540E+04	Half Life, Days	
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
Total Activity: 2.2999E+04 dpm
Final Volume: 1000.00 ml
Final Activity Concentration: 2.2999E+01 dpm/ml

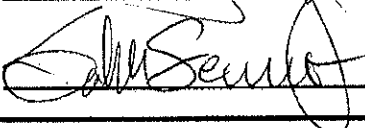
NOTES:

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

Expiration Date: February 12, 2016

Recertified By 

Date: 4/15/2015 0:00

QC Approval 

Date: 4/15/15



**Isotope Products
Laboratories**

An Eckert & Ziegler Company

24937 Avenue Tibbitts
Valencia, California 91355

Tel 661•309•1010
Fax 661•257•8303

Th-18

CERTIFICATE OF CALIBRATION ALPHA STANDARD SOLUTION

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

Physical Description:

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

Radioimpurities:

None detected (daughters in equilibrium)

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

Method of Calibration:

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

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

Uncertainty of Measurement:

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

Notes:

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

Alan H. Khan
Quality Control

9-Jan-02
Date Signed

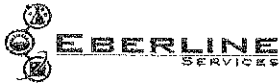
IPL Ref. No.: 867-54

ISO 9001 CERTIFIED

Medical Imaging Laboratory
24937 Avenue Tibbitts Valencia, California 91355

Industrial Gauging Laboratory
1800 North Keystone Street Burbank, California 91504

: 00039



QUALITY CONTROL PROGRAM
MP-009

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

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

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

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

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

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

Chemical Composition of Standard Solution
²²⁹Th(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 

Date: 9/29/2015 0:00

QC Approval 

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

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

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

Dilution Instructions: Dilution Solvent Used 0.1M HNO₃

SECONDARY VOLUMETRIC DILUTION

Vol. Parent Solution: 10.0000 ml
Total Activity: 2.2490E+04 dpm Final Activity Concentration: 2.2490E+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: August 24, 2016

Verified & Approved By [Signature]

Date: 9/29/2015 0:00

QC Approval [Signature]

Date: 9/30/15

CERTIFICATE OF CALIBRATION
 Standard Radionuclide Source

GAS-1402

98503

Sand in 16 Ounce PP Taral Jar Filled to Capacity

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

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

Nuclide	Gamma-Ray Energy (keV)	Half-Life, Days	Master Source* γ ps/gram	This Source γ ps	Uncertainty* , %			Calibration Method*
					u_A	u_B	U	
Am-241	59.5	1.580E+05	—	2.030E+03	0.1	1.8	3.6	4 π LS
Cd-109	88.0	4.614E+02	1.663E+05	2.929E+03	0.5	2.0	4.1	HPGe
Co-57	122.1	2.717E+02	8.913E+04	1.569E+03	0.4	1.7	3.5	HPGe
Ce-139	165.9	1.376E+02	1.241E+05	2.185E+03	0.4	1.7	3.5	HPGe
Hg-203	279.2	4.659E+01	2.675E+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)



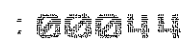
SECTION VI
QUALITY CONTROL SAMPLE RESULTS SUMMARY

WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
15-10064	UUIISO	1	pCi	g	Auxier & Associates, Inc.

Laboratory Control Sample												
Analyte	LCS Measured	CSU Measured	LCS Expected	Uncert. Expected	Known	Known Error	Result	CSU	Standard ID	Standard ACT (dpm)	Standard Error	Standard Added (g)
U-234	94.73%	16.67%	100.00%	3.60%	8.11E+00	2.92E-01	7.68E+00	1.28E+00	U-8a	3.52E+01	3.60E+00	5.11E-01
U-238	99.17%	16.59%	100.00%	3.60%	7.90E+00	2.84E-01	7.83E+00	1.30E+00	U-8a	3.44E+01	3.60E+00	5.11E-01

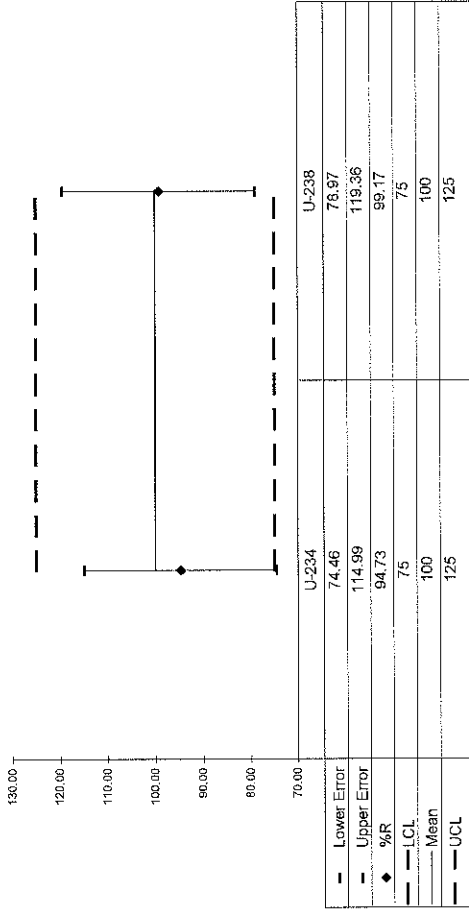
Matrix Spike													
Analyte	Normalized Difference	MS Actual % Rec	Expected MS Result	Expected MS Uncert	Actual MS Result	Actual MS CSU	Sample Result	Sample CSU	Sample Aliquot	Standard ID	Standard ACT (dpm)	Standard Error %	Standard Added (g)

Replicate Sample										QC Summary			
Analyte	Normalized Difference	RPD	Original Result	Original CSU	Replicate Result	Replicate CSU	LCS Relative Bias	LCS % R	MS % R	MS ND	Rep RPD	Rep ND	
U-234	0.37	6.00	1.24E+00	2.71E-01	1.17E+00	2.73E-01	0.95	OK			OK	OK	
U-238	0.42	6.62	1.37E+00	2.90E-01	1.28E+00	2.92E-01	0.99	OK			OK	OK	
U-235	0.07	3.11	1.44E-01	8.67E-02	1.48E-01	9.37E-02		OK			NA	OK	

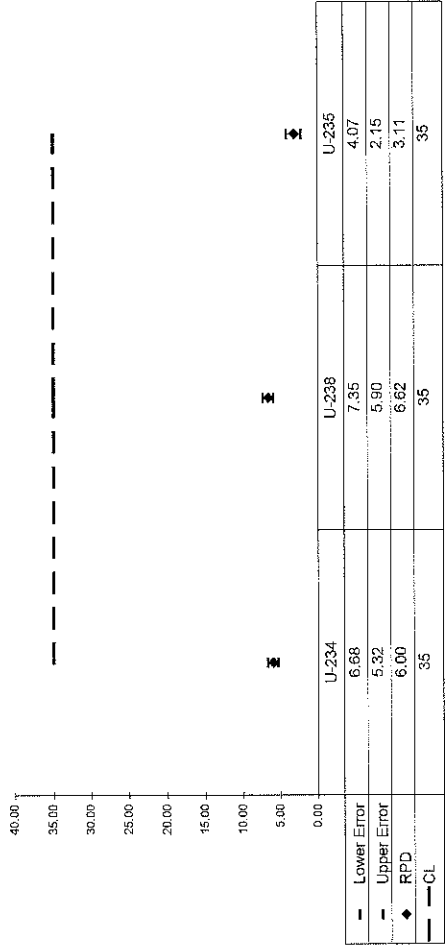


WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
15-10064	UUISO	1	pCi	g	Auxier & Associates, Inc.

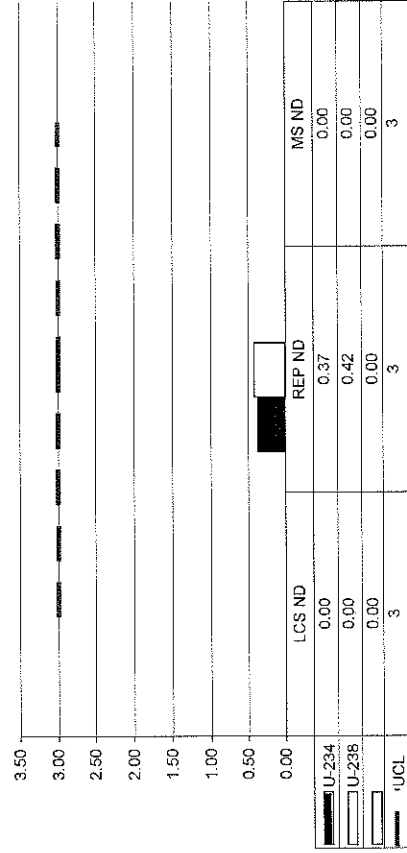
LCS % Recovery



Replicate Sample RPD



Normalized Difference



No Matrix Spike

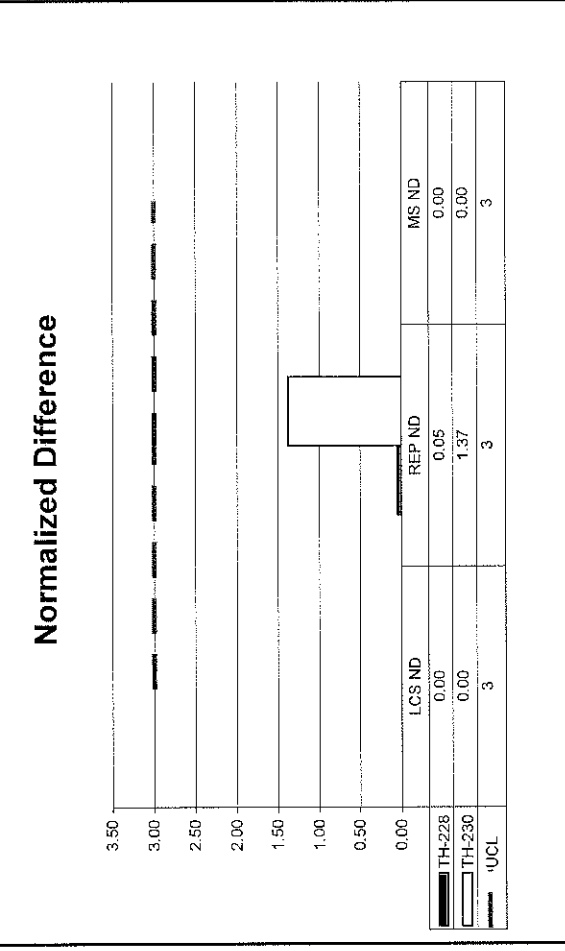
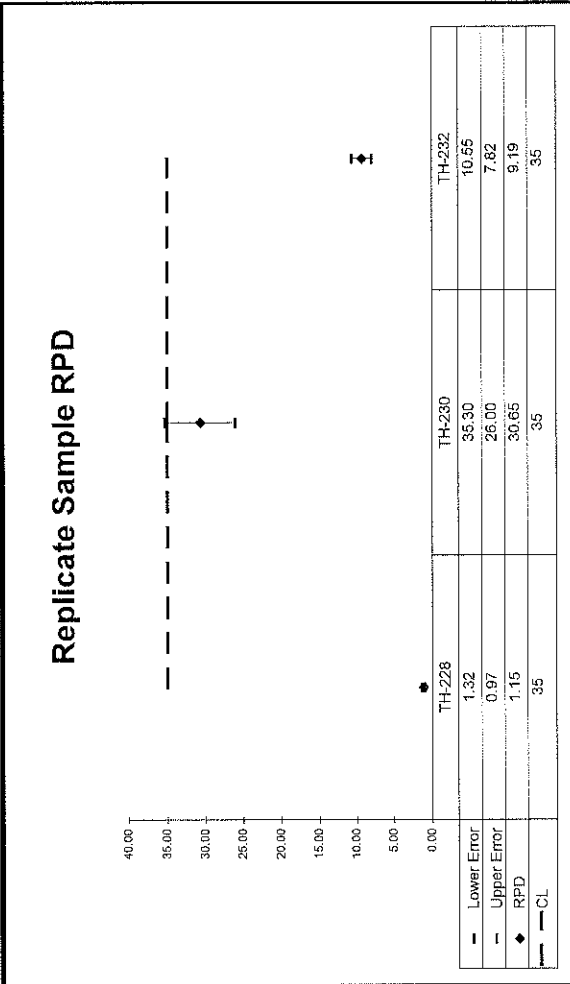
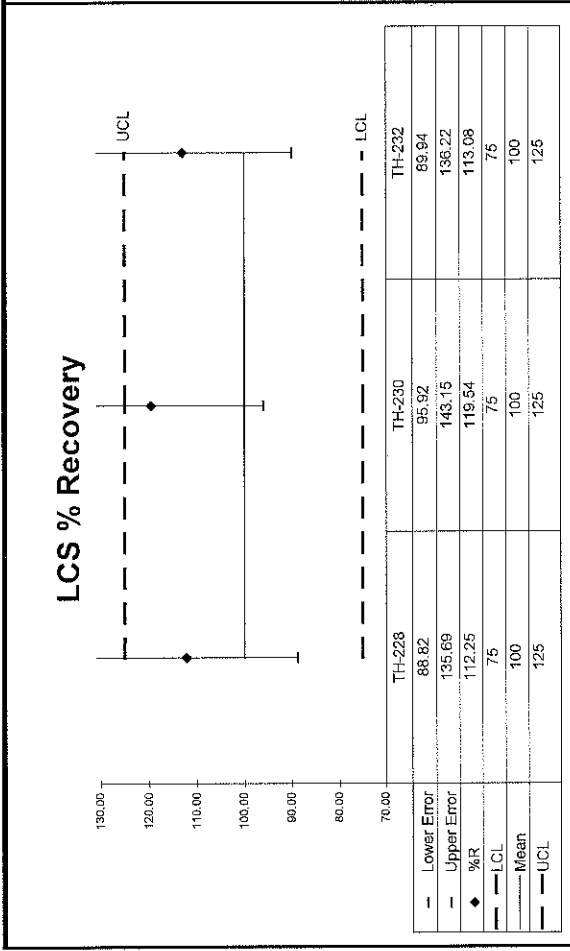
W/O	Analysis	Run	Activity Units	Aliquot Units	Client Name
15-10064	THISO	1	pCi	g	Auxier & Associates, Inc.

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	112.25%	19.84%	100.00%	3.60%	4.71E+00	1.70E-01	5.29E+00	1.05E+00	Th-8b	1.04E+02	3.60E+00	1.01E-01
TH-230	119.54%	20.91%	100.00%	2.70%	5.30E+00	1.43E-01	6.34E+00	1.33E+00	Th-1b	2.35E+01	2.70E+00	5.00E-01
TH-232	113.08%	19.54%	100.00%	3.60%	4.71E+00	1.70E-01	5.33E+00	1.04E+00	Th-8b	1.04E+02	3.60E+00	1.01E-01

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

Replicate Sample											QC Summary			
Analyte	Normalized Difference	RPD	Original Result	Original CSU	Replicate Result	Replicate CSU	LCS Relative Bias	LCS % R	MS % R	MS ND	Rep RPD	Rep ND		
TH-228	0.05	1.15	1.60E+00	4.43E-01	1.62E+00	5.39E-01	1.12	OK			OK	OK		
TH-230	1.37	30.65	1.72E+00	4.87E-01	2.34E+00	7.45E-01	1.20	OK			INV	OK		
TH-232	0.43	9.19	1.68E+00	4.56E-01	1.84E+00	5.91E-01	1.13	OK			OK	OK		

WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
15-10064	THISO	1	pCi	g	Auxier & Associates, Inc.



No Matrix Spike

WO	Analysis		Run	Activity Units	Aliquot Units	Client Name
15-10064	Gamma	1	pCi	g	Auxier & Associates, Inc.	

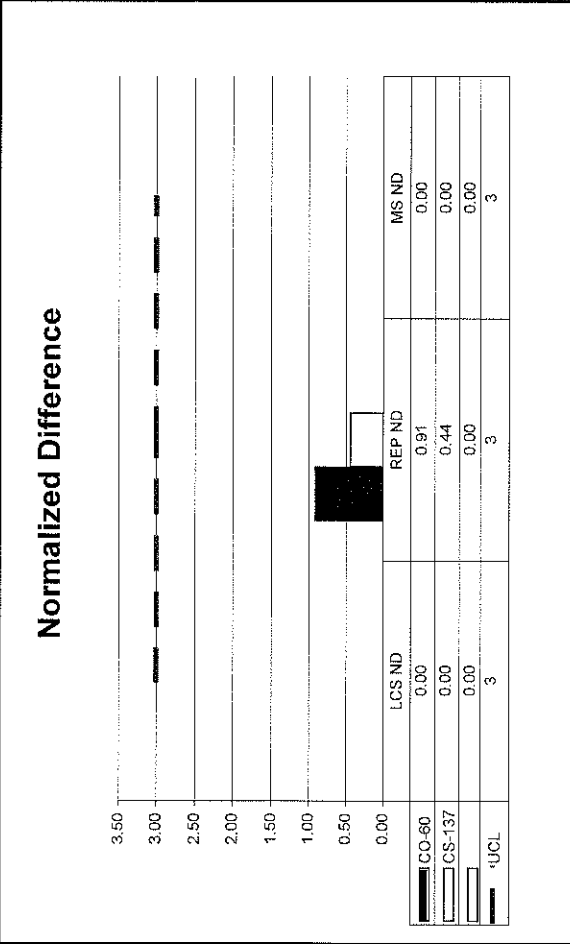
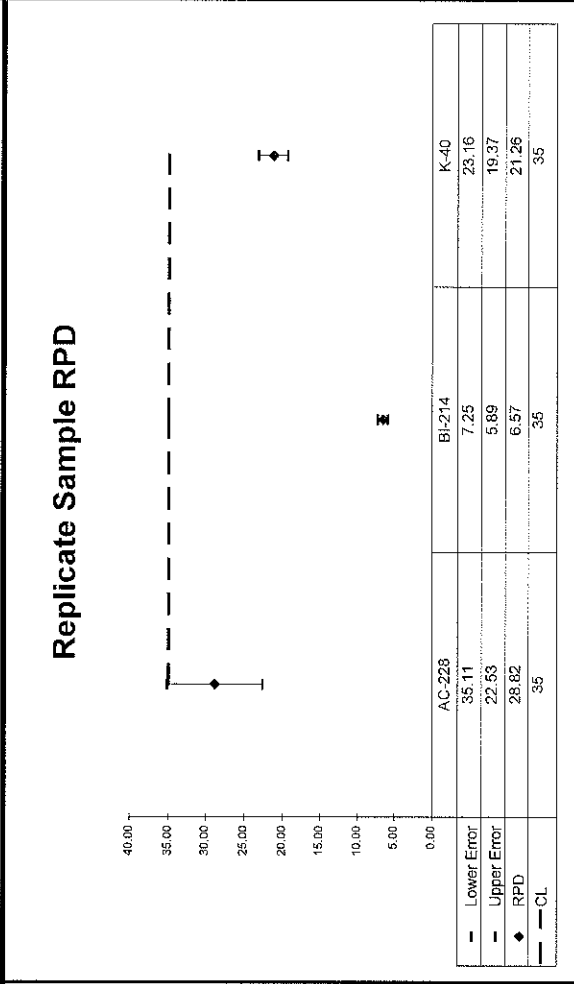
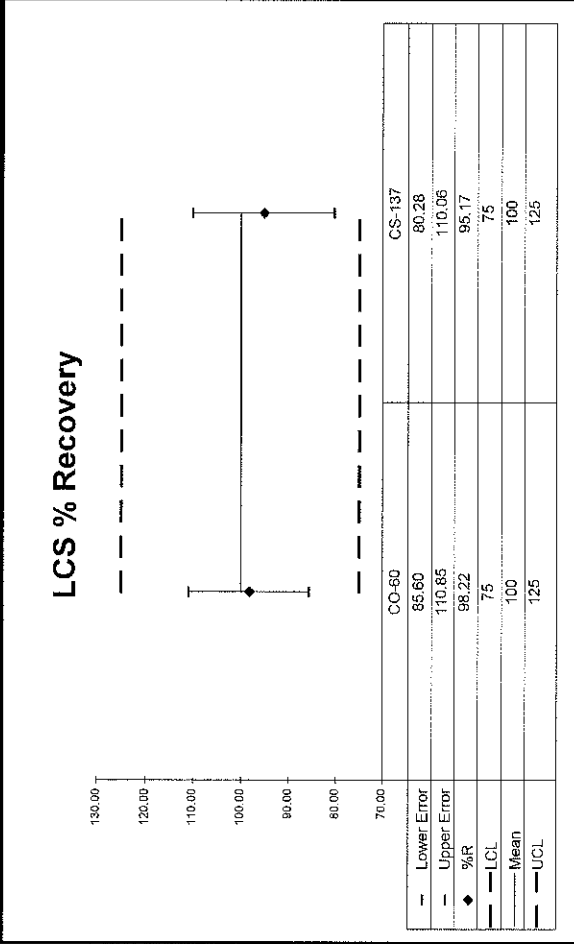
Laboratory Control Sample												
Analyte	LCS Measured	CSU Measured	LCS Expected	Uncert. Expected	Known	Known Error	Result	CSU	Standard ID	Standard ACT (dpm)	Standard Error	Standard Added (g)
CO-60	98.22%	8.62%	100.00%	4.00%	1.37E+02	5.48E+00	1.35E+02	1.16E+01	GAS-1302	1.37E+02	5.48E+00	7.36E+02
CS-137	95.17%	10.89%	100.00%	4.00%	8.69E+01	3.48E+00	8.27E+01	9.01E+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										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	0.91	28.82	1.46E+00	6.07E-01	1.09E+00	5.08E-01	0.98	OK	<CS-137	AC-228>	OK	OK	
BI-214	0.44	6.57	1.71E+00	3.12E-01	1.60E+00	3.75E-01	0.95	OK	<CO-60	BI-214>	OK	OK	
K-40	1.65	21.26	1.93E+01	3.60E+00	2.38E+01	4.09E+00				K-40>	OK	OK	

000000

WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
15-10064	Gamma	1	pCi	g	Auxier & Associates, Inc.



No Matrix Spike


SECTION VII
LABORATORY TECHNICIAN'S NOTES
& RUN LOGS

ISO U NOTES

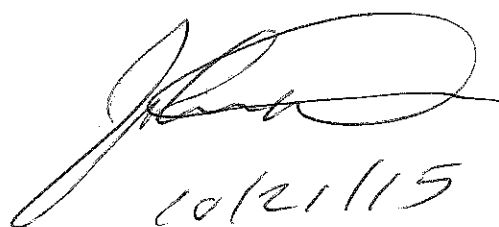
 EBERLINE SERVICES Work Order Analysis Notes	Oak Ridge Laboratory 601 Scarboro Rd. Oak Ridge, TN 37830 Voice: 865.481.0683 www.eberlineservices.com	Internal Work Order	15-10064
		Analysis Code	UUISO
		Run Number	1


#	Date	Dept	User	Notes
1	10/15/15 12:12	PREP	JPACHELLA	Samples were aliquoted, spiked and traced. Samples were digested with HF till dry. Samples were further digested in a mixed acid digestion till dry. Samples were submitted to separations.

10-15-15 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	15-10064
		Analysis Code	UUISO
		Run Number	1

#	Date	Dept	User	Notes
1	10/15/15 12:12	PREP	JPACHELLA	Samples were aliquoted, spiked and traced. Samples were digested with HF till dry. Samples were further digested in a mixed acid digestion till dry. Samples were submitted to separations.
2	10/21/15 17:39	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.


 10/21/15

 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	15-10064
		Analysis Code	UUISO
		Run Number	1

#	Date	Dept	User	Notes
1	10/15/15 12:12	PREP	JPACHELLA	Samples were aliquoted, spiked and traced. Samples were digested with HF till dry. Samples were further digested in a mixed acid digestion till dry. Samples were submitted to separations.
2	10/21/15 17:39	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	10/22/15 05:05	CHEM	TSMITH	Followed steps 12.1.7 to 12.4.5 in AP-005 . (Precipitated and filtered samples for Uranium)

10/22/15
TSM



EBERLINE
SERVICES

Reagents Used in an Analysis

Internal Work Order

15-10064

Analysis Code

Run

UUISO

1

Reagent ID	Reagent Name	Reagent Concentration	Analyst ID	Date Recorded
016569P	Hydrofluoric Acid	Reagent Grade	JPACHELLA	10/15/2015
016519P	Nitric Acid	Reagent Grade	JPACHELLA	10/15/2015
013365P	Sulfuric Acid	Reagent Grade	JPACHELLA	10/15/2015
016158P	Perchloric Acid	Reagent Grade	JPACHELLA	10/15/2015
016862P	Anion Exchange Resin	Reagent Grade	JDEMELAS	10/21/2015
016897S	HCl - HF	6.5N - 0.04N	JDEMELAS	10/21/2015
016925S	HCl - NH4I	8N - 0.1M	JDEMELAS	10/21/2015
016745D03	Hydrochloric Acid	0.5N	JDEMELAS	10/21/2015
016803S	Hydrochloric Acid	6.5N	JDEMELAS	10/21/2015
016918S	Hydrochloric Acid	8N	JDEMELAS	10/21/2015
016745P	Hydrochloric Acid	Reagent Grade	JDEMELAS	10/21/2015
016919S	HCl - HF	6.5N - 0.04N	JDEMELAS	10/21/2015
016909S	Carbon substrate	Solution	TSMITH	10/22/2015
016569P	Hydrofluoric Acid	Reagent Grade	TSMITH	10/22/2015
016583S	Neodymium Carrier	1 mg/ml	TSMITH	10/22/2015
016514P	Reagent Alcohol	Reagent Grade	TSMITH	10/22/2015
016606P	Titanous Chloride	Reagent Grade	TSMITH	10/22/2015

Alphabet 3

Date	Account #	Client	Product	Time	Analysis	Item
10/20/15	1510040A (1-3,5)	Unitech	1212	2hr50-	Np	KB
10/20/15	1509101A (1-4)	DOE	1211	Shr35-	Am 241	KB
10/20/15	1510063A (1)	Auxin	1232	2hr00-	ULL	KB
10/20/15	1510072A (1-5)	Accutest	1449	2hr50-	Rate	KB
10/20/15	1510067A (1-4)	UCOR	1504	2hr00-	Rate	KB
10/20/15	1510061A (1-7)	TEXAS BRINE	1505	2hr50-	Rate	KB
10/21	Dairy Puls	LAB	0570	1-	NA	-
10/21	1510051A (1)	TR Dept.	0545	2hr-	UL750	-
10/21	1510084A (7-20)	Auxier	0848	2hr-	UL750	-
10/21	1510064A (1-10)	Auxier	0850	2hr-	UL750	-
10/21	1510081A (1-4)	Pearsons	0850	5hr7hr	Am 241	-
10/21/15	1510064A (11-13)	Auxin	1147	2hr50-	ISO-TH	KB
10/21/15	1510067A (1-4,7)	UCOR	1148	2hr50-	ISO-PU	KB
10/21/15	1510067A (1-4)	UCOR	1147	2hr50-	TH 229	KB
10/21/15	1510040A (1-3,5)	Unitech	1150	2hr50-	Am 241	KB
10/21/15	1509134A (1-4)	Phillips 66	1150	2hr50-	Rate	KB
10/21/15	SuedA-RA (1-3)	Lab	1151	2hr50-	Rate	KB
10/21/15	1510058A (1-3,5)	Unitech	1430	2hr50-	Am 241	KB
10/21/15	1510068A (1-4)	UCOR	1445	2hr00-	Rate	KB
10/22	Dairy Puls	LAB	0527	1-	NA	-
10/22	1509055B (1-5,7,9)	Enviro. Dir	0505	2hr-	UL750	-
10/22	1510067A (1-4)	UCOR	0505	2hr-	Am 241	-
10/22	1510067A (1-4)	UCOR	0505	2hr-	Am 241	-
10/22	1510067A (1-4)	UCOR	0504	2hr-	Rate	-
10/22	1510064A (1-5)	Auxier	0504	2hr-	UL750	-

Alphabet 3

Photo	Account #	Client	Location	Office	Address	State
10/20/15	1510040A(1-3,5)	Unitech	1212	2hr 00 =	Np	KB
10/20/15	1509101A(1-4)	DOE	1211	Shr 35 =	Am 241	KB
10/20/15	1510063A(1)	Auxin	1232	2hr 00 =	UU	KB
10/20/15	1510022A(1-5)	Accutest	1449	2hr 00 =	Rock	KB
10/20/15	1510067A(1-4)	UCOR	1504	2hr 00 =	Rock	KB
10/20/15	1510061A(1-7)	Texas Brine	1505	2hr 00 =	Rock	KB
10/21	Daily Pulse	LAB	0570	1hr	Np	—
10/21	1510051A(1)	TN Dept.	0545	2hr	Un 230	—
10/21	1510084A(1-20)	Auxier	0848	2hr	Un 230	—
10/21	1510064A(1-10)	Auxier	0850	2hr	Th 230	—
10/21	1510021A(1-4)	Pearsons	0850	5hr 30	Am 241	—
10/21/15	1510064A(1-13)	Auxin	1147	2hr 00 =	ISO-Th	KB
10/21/15	1510067A(1-4,7)	UCOR	1148	2hr 00 =	ISO-PH	KB
10/21/15	1510067A(1-4)	UCOR	1147	2hr 00 =	Th 229	KB
10/21/15	1510040A(1-3,5)	Unitech	1150	2hr 00 =	Am 241	KB
10/21/15	1509134A(1-4)	Phillips 66	1150	2hr 00 =	PO 210	KB
10/21/15	Sueda-RA(1-3)	Lab	1151	2hr 00 =	Rock	KB
10/21/15	1510058A(1-3,5)	Unitech	1430	2hr 00 =	Am 241	KB
10/21/15	1510068A(1-4)	UCOR	1445	2hr 00 =	Rock	KB
10/22	Daily Pulse	LAB	0527	1hr	Np	—
10/22	1509055B(1-5,7-11)	Emerson Dim	0805	2hr	Th 230	—
10/22	1510067A(1-4)	UCOR	0805	2hr	Am 241	—
10/22	1510067A(1-4)	UCOR	0805	2hr	Am 241	—
10/22	1510067A(1-4)	UCOR	0806	2hr	PO 242	—
10/22	1510064A(1-5)	Auxier	0906	2hr	Un 230	—
10/22/15	1510052A(7)	TN Dept. of Health	1205	16.40 hrs	UU	KB
10/22/15	1510051A(1-3,5,6)	TN Dept. of Health	1208	16.40 hrs	Np	KB
10/22/15	1510064A(1-13)	Auxin	1209	2hr 00 =	UU	KB
10/22/15	1510058A(1-3,5)	Unitech	1209	2hr 00 =	ISO-Th	KB
10/22/15	1510072A(1-7)	New York PE	1207	2hr 00 =	Rock	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	15-10064
		Analysis Code	ThISO
		Run Number	1


#	Date	Dept	User	Notes
1	10/15/15 12:12	PREP	JPACHELLA	Samples were aliquoted, spiked and traced. Samples were digested with HF till dry. Samples were further digested in a mixed acid digestion till dry. Samples were submitted to separations.

10-15-15 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	15-10064
		Analysis Code	ThISO
		Run Number	1

#	Date	Dept	User	Notes
1	10/15/15 12:12	PREP	JPACHELLA	Samples were aliquoted, spiked and traced. Samples were digested with HF till dry. Samples were further digested in a mixed acid digestion till dry. Samples were submitted to separations.
2	10/20/15 19:18	CHEM	JDEMELAS	Added concentrated HNO3 to sample beakers and heated to dryness; Added 20 ml 8N HNO3 to samples and transferred to new, labeled C-Tubes, adding 8N HNO3 to bring volume to ~35 ml; Preconditioned resin columns with 50 ml 8N HNO3; Centrifuged samples as needed, and passed through columns; Rinsed C-Tubes with 20 ml 8N HNO3; Centrifuged rinsates and loaded onto columns; Rinsed columns with 40 ml 8N HNO3; Eluted Thorium with 50 ml of 8N HCl into clean, labeled 100-ml beakers; Dried-down samples on hotplate; Dissolved samples in ~10 ml of concentrated HCl; Transferred to new, labeled C-Tubes with deionized water, bringing volume to ~15ml. Set samples aside for later precipitation and filtering.

J. Demelas
 10/20/15

 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	15-10064
		Analysis Code	ThISO
		Run Number	1

#	Date	Dept	User	Notes
1	10/15/15 12:12	PREP	JPACHELLA	Samples were aliquoted, spiked and traced. Samples were digested with HF till dry. Samples were further digested in a mixed acid digestion till dry. Samples were submitted to separations.
2	10/20/15 19:18	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	10/21/15 05:06	CHEM	TSMITH	Followed steps 12.2.5 to 12.4.5 in AP-005 . (Precipitated and filtered samples for Thorium)

10/21/15
TSM



Reagents Used in an Analysis

Internal Work Order

15-10064

Analysis Code

Run

ThISO

1

Reagent ID	Reagent Name	Reagent Concentration	Analyst ID	Date Recorded
016569P	Hydrofluoric Acid	Reagent Grade	JPACHELLA	10/15/2015
016519P	Nitric Acid	Reagent Grade	JPACHELLA	10/15/2015
016679P	Sulfuric Acid	Reagent Grade	JPACHELLA	10/15/2015
016158P	Perchloric Acid	Reagent Grade	JPACHELLA	10/15/2015
016862P	Anion Exchange Resin	Reagent Grade	JDEMELAS	10/20/2015
016745P	Hydrochloric Acid	Reagent Grade	JDEMELAS	10/20/2015
016519P	Nitric Acid	Reagent Grade	JDEMELAS	10/20/2015
016918S	Hydrochloric Acid	8N	JDEMELAS	10/20/2015
016911S	Nitric Acid	8N	JDEMELAS	10/20/2015
016899S	Carbon substrate	Solution	TSMITH	10/21/2015
016869S	Cerrium Carrier	0.1mg/ml	TSMITH	10/21/2015
016569P	Hydrofluoric Acid	Reagent Grade	TSMITH	10/21/2015
016514P	Reagent Alcohol	Reagent Grade	TSMITH	10/21/2015

Alphett 3

Photo	Account #	Client	Location	Time	Notes	Time
10/20/15	1510040A (1-3,5)	Unitech	1212	2hr50 =	Np	KB
10/20/15	1509101A (1-4)	DOE	1211	5hr35 =	Am 241	KB
10/20/15	1510063A (1)	Aurora	1232	2hr00 =	UU	KB
10/20/15	1510022A (1-5)	Accountest	1449	2hr50 =	Rab	KB
10/20/15	1510067A (1-4)	Ucon	1504	2hr50 =	Rab	KB
10/20/15	1510061A (1-7)	Texas Brine	1505	2hr50 =	Rab	KB
10/21	Prilly Puls	WTS	0570	1 =	WTS	—
10/21	1510051A (1)	TR Dept.	0145	2hr5 =	UWTS	—
10/21	1510084A (7-20)	Aurora	0848	2hr5 =	UWTS	—
10/21	1510064A (1-10)	Aurora	0850	2hr5 =	Th 30	—
10/21	1510001A (1-4)	Pursons	0850	5hr75 =	Aur 241	—

Alphabet 3

Date	Account	Client	Invoice #	Chrgs	Notes	Stat
10/20/15	1510040A(1-3,5)	Unitech	1212	2hr50-	Np	KB
10/20/15	1509101A(1-4)	DOE	1211	5hr35-	Am 241	KB
10/20/15	1510063A(1)	Auxin	1232	2hr00-	ULL	KB
10/20/15	1510022A(1-5)	Accountest	1449	2hr50-	Rate	KB
10/20/15	1510067A(1-4)	ULON	1504	2hr50-	Rate	KB
10/20/15	1510061A(1-7)	Texas Brine	1505	2hr50-	Rate	KB
10/21	Pwily Puls	WAS	0570	1-	Wp	-
10/21	1510051A(1)	TH Dept.	0195	2.5-	UL 750	-
10/21	1510084A(7-20)	Auxier	0848	2.5-	UL 750	-
10/21	1510064A(1-10)	Auxier	0850	2.5-	Th 350	-
10/21	1510061A(1-4)	Pearsons	0850	5hr75-	Am 241	-
10/21/15	1510064A(11-13)	Auxin	1147	2hr50-	ISO-Th	KB
10/21/15	1510067A(1-4,7)	ULON	1148	2hr50-	ISO-PH	KB
10/21/15	1510067A(1-4)	ULON	1147	2hr50-	Th 229	KB
10/21/15	1510040A(1-3,5)	Unitech	1150	2hr50-	Am 24	KB
10/21/15	1509134A(1-4)	Phillips 66	1150	2hr50-	Por 210	KB
10/21/15	SeedA-RA(1-3)	Lab	1151	2hr50-	Rate	KB

GAMMA NOTES

GE 1

101

DATE	SAMPLE #	Client	LoadTime	CT. Time	Analysis	Tech
11/2/15	1511004-03	Foxfire	1820	8 hrs	Y	KB
11/7	EA714	UAD	0517	15	Y	KB
11/7	PaulyR	UAD	0546	15	Y	KB
7/17	1511001-10	Limbrell	0606	7L	Y	KB
11/7	151006207	Auxier	0709	7L	Y	KB
11/3	151006210	Auxier	0812	7L	Y	KB
11/7	151006214	Auxier	0916	7L	Y	KB
11/7	151006218	Auxier	1018	7L	Y	KB
11/8	1510064-05	Auxier	1127	7L	Y	KB
11/3/15	1510064-08	Auxier	1229	1 hr	Y	KB
11/3/15	1510064-12	Auxier	1335	1 hr	Y	KB

GE 2

29

DATE	SAMPLE #	Client	Load Time	CT Time	Analysis	Tech
10/17	EA81401	LAB	0525	15	Y	C
10/17	Daily R	LAB	0550	15	Y	C
10/17	1510172-02	UCON	0857	15	B	—
10/17	1510166-05	James R.	0951	7L	Y	—
10/30/15	1510100-02	USACE	1257	15 mins	B	KB
10/17	1510100-06	USACE	1710	15	B	—
10/17	1510174-03	Sol. Tech	1770	1h	Y	—
10/30/15	1510174-04	Solvent Tech	1430	1h	Y	KB
10/30/15	1510166-08	James R. Reed	1530	3hr	Y	KB
10/30/15	1510166-11	James R. Reed	1831	3hrs	Y	KB
10/31/15	System Bkgd	Lab	0859	24hrs	Y	KB
11/2	EA81401	LAB	0512	15	Y	C
11/2	Daily R	LAB	0545	15	Y	—
11/2	1510166-17	James R.	0610	7L	Y	—
11/2	1510171-03	James R.	0915	7L	Y	—
11/2/15	1510171-04	James R. Reed	1217	3hr	Y	KB
11/2/15	1511001-05	Kimball	1518	1hr	Y	KB
11/2/15	1511001-06	Kimball	1619	1hr	Y	KB
11/2/15	1511001-09	Kimball	1720	1hr	Y	KB
11/2/15	1511004-05	Foxfire	1820	8 hrs	Y	KB
11/3	EA81401	LAB	0577	15	Y	—
11/3	Daily R	LAB	0546	15	Y	—
11/3	1510067-03	Auxier	0607	7L	Y	—
11/3	1510067-04	Auxier	0709	7L	Y	—
11/3	1510067-11	Auxier	0812	7L	Y	—
11/3	1510067-15	Auxier	0916	7L	Y	—
11/3	1510067-19	Auxier	1018	7L	Y	—
11/3	1510064-06	Auxier	1127	7L	Y	—
11/3/15	1510064-09	Auxier	1229	1hr	Y	KB
11/3/15	1510064-13	Auxier	1335	1hr	Y	KB

GE 3

DATE	SAMPLE #	Client	LoadTime	CT. Time	Analysis	Tech
10/30/15	1510100-03	USACE	1212	15min	Be	KB
10/1/15	1510100-06	USACE	1310	15	Be	-
10/30/15	1510166-09	James Reed	1631	3 hrs	Y	KB
10/31/15	System Bkgd	Lab	0859	24 hrs.	Y	KB
11/2	ETS 1402	LAB	0512	15	Y	KB
11/2	DWYLA	LAB	0545	15	Y	KB
11/2	ETS 1402	LAB	0611	15	Y	KB
11/2	1510166-14	James R.	0724	2L	Y	KB
11/2	1510171-05	James R.	1129	2L	Y	KB
11/2	ANALYTICAL (1)	LAB	1027	2L	Y	KB
11/2/15	1511003-02	Eden Foods	1429	2 hrs	Y	KB
11/2/15	1511003-04	Eden Foods	1630	2 hrs	Y	KB
11/2/15	1510171-07	James Reed	1831	3 hrs	Y	KB
11/7	ETS 1402	LAB	0517	15	Y	KB
11/7	DWYLA	LAB	0546	15	Y	KB
11/7	1510067-05	Auxier	0607	2L	Y	KB
11/7	1510067-08	Auxier	0709	2L	Y	KB
11/7	1510067-12	Auxier	0802	2L	Y	KB
11/7	1510067-26	Auxier	0916	2L	Y	KB
11/7	1510067-20	Auxier	1018	2L	Y	KB
11/7	1510064-07	Auxier	1127	2L	Y	KB
11/3/15	1510064-10	Auxier	1230	2 hrs	Y	KB

DATE	SAMPLE #	Client	LabTime	CT Time	Analysis	Tech
10/28/15	1510096-04	Seany	1351	15mins	Ba	KB
10/28/15	1510096-03	Seany	1404	15mins	Ba	KB
10/28/15	1510161-01	USA	1422	30mins	Y	KB
10/29	Chw14	LAB	0514	1R	V	C
10/29	Quynh	LAB	0546	1R	V	C
10/29	1510160-04	UTofRad	0652	1R	Na	—
10/29	1510154-03	Cutler	1004	1R	Ba	—
10/29	1510154-06	Cutler	1021	1R	Ba	—
10/29	Chw14	LAB	0725	1R	V	C
10/29	Quynh	LAB	0750	1R	V	C
10/29	1510172-04	Udon	0815	1R	Na	—
10/29	1510166-01	James R.	0912	7-	V	C
10/29	1510171-01	James R.	1023	7-	V	—
10/30/15	1510161-01	USA	1202	15 mins	Ba	KB
10/30/15	1510161-02	USA	1218	15 mins	Ba	KB
10/30/15	1510161-03	USA	1236	15 mins	Ba	KB
10/30/15	1510161-04	USA	1252	15 mins	Ba	KB
10/30/15	1510161-05	USA	1710	15 mins	Ba	KB
10/30	1510174-02	Sol. Tech	1720	7L	V	—
10/30/15	1510174-01	Solution Tech	1431	30mins	Y	KB
10/30/15	1510105-01	Test America	1507	15mins	Ba	KB
10/30/15	1510105-02	Test America	1519	15 mins	Ba	KB
10/30/15	1510105-03	Test America	1535	15 mins	Ba	KB
10/30/15	1510105-04	Test America	1551	15 mins	Ba	KB
10/30/15	1510105-05	Test America	1606	15 min	Ba	KB
10/30/15	1510166-02	James R. Reid	1623	5hr	V	KB
10/31/15	System Bkgrd	Lab	0900	24 hrs	Y	KB
11/2	Chw14	LAB	0513	1R	V	C
11/2	Quynh	LAB	0545	1R	V	C
11/2	1510067-02	Auxier	0615	2h	V	C
11/2	1510064-02	Auxier	0716	2h	V	—
11/2	1510067-01	Auxier	0818	7-	V	S
11/2	1510067-01	Auxier	0817	7-	V	C

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3 PAPER

GE 4

DATE	SAMPLE #	Client	Load Time	CT. Time	Analysis	Tech
11/2/15	151100301	Eden Foods	1231	30mins	✓	KB
11/2/15	151100302	Eden Foods	1438	2 hr	✓	KB
11/2/15	1511001-01	Kimbrell	1707	30mins	✓	KB
	15110001					KB
11/2/15	1511001-02	Kimbrell	1337	1 hr	✓	KB
11/2/15	1511001-07	Kimbrell	1640	1 hr	✓	KB
11/2/15	1511004-01	Fox fire	1741	30mins	✓	KB
11/2/15	1511004-02	Fox fire	1815		✓	KB
11/7	Geo 14	LAS	0517	15	✓	✓
11/7	Dwyer	LAS	0514	15	✓	✓
11/7	1510067-06	Aurora	0607	1L	✓	✓
11/7	1510067-09	Aurora	0709	1L	✓	✓
11/7	1510067-13	Aurora	0812	1L	✓	✓
11/7	1510067-17	Aurora	0916	1L	✓	✓
11/7	1510064-07	Aurora	1018	1L	✓	✓
11/7	1510064-09	Aurora	1127	1L	✓	✓
11/3/15	1510064-11	Aurora	1230	1 hr	✓	KB

SECTION VIII
ANALYTICAL DATA (ISOTOPIC URANIUM)

Work Order	15-10064
Analysis Code	UUISO
Run	1
Date Received	10/12/2015
Lab Deadline	11/3/2015
Client	Auxier & Associates, Inc.
Project	PAP-KAN
Report Level	4
Activity Units	pCi
Aliquot Units	g
Matrix	SO
Method	EML U-02 Modified
Instrument Type	Alpha Spectroscopy
Radiometric Tracer	U-232
Radiometric Sol#	U-10a
Tracer Act (dpm/g)	18.64
Carrier	
Carrier Conc (mg/ml)	

Internal Fraction	Sample Desc	Client ID	Login CPM	Sample Date	Sample Aliquot
01	LCS	LCS		10/12/15 00:00	1.0000E+00
02	MBL	BLANK		10/12/15 00:00	1.5000E+00
03	DUP	CP5005S14-15	36	10/06/15 09:50	1.5262E+00
04	DO	CP5005S14-15	36	10/06/15 09:50	1.5260E+00
05	TRG	CP5005S16-17 5	35	10/06/15 10:00	1.5231E+00
06	TRG	CP2211S01-02	32	10/06/15 10:20	1.5058E+00
07	TRG	CP2211S04-05	34	10/06/15 10:40	1.5218E+00
08	TRG	CP2211S06-07	36	10/06/15 10:50	1.5179E+00
09	TRG	CP2211S11-12	35	10/06/15 11:10	1.5262E+00
10	TRG	CP2211S13-14	34	10/06/15 11:20	1.5014E+00
11	TRG	CP2211S16-17	38	10/06/15 11:30	1.5168E+00
12	TRG	CP2211S18-19	34	10/06/15 11:40	1.5123E+00
13	TRG	CP2211S21-22	37	10/06/15 11:50	1.5106E+00

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


Internal Fraction	Sample Desc	Tracer Aliquot (g)	Tracer Total ACT (dpm)	Radiometric Tracer (pCi)	Radiometric % Rec	Grav Carrier Added (ml)	Grav Filter Tare (g)	Grav Filter Final (g)	Grav Filter Net (g)	Grav % Rec	Mean % Rec	SAF 1*	SAF 2*
01	LCS	0.6517	12.1		0.00								
02	MBL	0.6524	12.2		0.00								
03	DUP	0.6525	12.2		0.00								
04	DO	0.6527	12.2		0.00								
05	TRG	0.6538	12.2		0.00								
06	TRG	0.6522	12.2		0.00								
07	TRG	0.6542	12.2		0.00								
08	TRG	0.6626	12.4		0.00								
09	TRG	0.6525	12.2		0.00								
10	TRG	0.6517	12.1		0.00								
11	TRG	0.6529	12.2		0.00								
12	TRG	0.6523	12.2		0.00								
13	TRG	0.6516	12.1		0.00								

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

Internal Fraction	Sample Desc	Rough Prep Date	Rough Prep By	Prep Date	Prep By	Sep t0 Date/Time	Sep t0 By	Sep t1 Date/Time	Sep t1 By
01	LCS			10/15/15 13:05	JPACHELLA				
02	MBL			10/15/15 13:05	JPACHELLA				
03	DUP			10/15/15 13:05	JPACHELLA				
04	DO	10/13/15 08:51	KSALLINGS	10/15/15 13:05	JPACHELLA				
05	TRG	10/13/15 08:51	KSALLINGS	10/15/15 13:05	JPACHELLA				
06	TRG	10/13/15 08:51	KSALLINGS	10/15/15 13:05	JPACHELLA				
07	TRG	10/13/15 08:51	KSALLINGS	10/15/15 13:05	JPACHELLA				
08	TRG	10/13/15 08:51	KSALLINGS	10/15/15 13:05	JPACHELLA				
09	TRG	10/13/15 08:51	KSALLINGS	10/15/15 13:05	JPACHELLA				
10	TRG	10/13/15 08:51	KSALLINGS	10/15/15 13:05	JPACHELLA				
11	TRG	10/13/15 08:51	KSALLINGS	10/15/15 13:05	JPACHELLA				
12	TRG	10/13/15 08:51	KSALLINGS	10/15/15 13:05	JPACHELLA				
13	TRG	10/13/15 08:51	KSALLINGS	10/15/15 13:05	JPACHELLA				

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

1500074

	Run	1
	Analysis Code	UUISO
Client	Auxier & Associates, Inc.	
Eberline Services Work Order	15-10064	

Lab Fraction	Nuclide	Sample Desc	Client Identification	Activity Units	Results	Error Estimate	MDA	LCS Known	LCS %R	LCS Flag	RPD Flag	MDA Flag	Blank Flag
01	U-234	LCS	LCS	pCi/g	7.68E+00	1.16E+00	1.29E-01	8.11E+00	94.73	OK		OK	
02	U-234	MBL	BLANK	pCi/g	5.68E-02	4.73E-02	4.07E-02					OK	OK
03	U-234	DUP	CP5005S14-15	pCi/g	1.17E+00	2.60E-01	4.56E-02				OK	OK	
04	U-234	DO	CP5005S14-15	pCi/g	1.24E+00	2.56E-01	4.64E-02					OK	
05	U-234	TRG	CP5005S16-17 5	pCi/g	1.10E+00	2.58E-01	6.08E-02					OK	
06	U-234	TRG	CP2211S01-02	pCi/g	2.04E+00	3.67E-01	7.73E-02					OK	
07	U-234	TRG	CP2211S04-05	pCi/g	1.18E+00	2.36E-01	4.19E-02					OK	
08	U-234	TRG	CP2211S06-07	pCi/g	1.34E+00	2.65E-01	5.63E-02					OK	
09	U-234	TRG	CP2211S11-12	pCi/g	9.73E-01	2.16E-01	3.91E-02					OK	
10	U-234	TRG	CP2211S13-14	pCi/g	7.72E-01	1.76E-01	4.91E-02					OK	
11	U-234	TRG	CP2211S16-17	pCi/g	8.64E-01	2.10E-01	4.30E-02					OK	
12	U-234	TRG	CP2211S18-19	pCi/g	1.16E+00	2.45E-01	5.45E-02					OK	
13	U-234	TRG	CP2211S21-22	pCi/g	1.13E+00	2.43E-01	5.54E-02					OK	

57000

	Run	1
	Analysis Code	UISO
Eberline Services Work Order	15-10064	
Client	Auxier & Associates, Inc.	

Lab Fraction	Nuclide	Sample Desc	Sample Date	Sample Aliquot	Radiometric % Rec	Grav % Rec	Mean % Rec	SAF	Sep to Date/Time	Sep to Date/Time
01	U-234	LCS	10/12/15 00:00	1.00E+00	97.26	0.00	0.00			
02	U-234	MBL	10/12/15 00:00	1.50E+00	115.12	0.00	0.00			
03	U-234	DUP	10/06/15 09:50	1.53E+00	97.12	0.00	0.00			
04	U-234	DO	10/06/15 09:50	1.53E+00	104.41	0.00	0.00			
05	U-234	TRG	10/06/15 10:00	1.52E+00	97.47	0.00	0.00			
06	U-234	TRG	10/06/15 10:20	1.51E+00	89.35	0.00	0.00			
07	U-234	TRG	10/06/15 10:40	1.52E+00	107.38	0.00	0.00			
08	U-234	TRG	10/06/15 10:50	1.52E+00	99.27	0.00	0.00			
09	U-234	TRG	10/06/15 11:10	1.53E+00	106.81	0.00	0.00			
10	U-234	TRG	10/06/15 11:20	1.50E+00	107.95	0.00	0.00			
11	U-234	TRG	10/06/15 11:30	1.52E+00	92.45	0.00	0.00			
12	U-234	TRG	10/06/15 11:40	1.51E+00	103.16	0.00	0.00			
13	U-234	TRG	10/06/15 11:50	1.51E+00	100.83	0.00	0.00			

97888

Lab Fraction	Nuclide	Sample Desc	Client Identification	Activity Units	Results	Error Estimate	MDA	LCS Known	LCS %R	LCS Flag	RPD Flag	MDA Flag	Blank Flag
01	U-238	LCS	LCS	pCi/g	7.83E+00	1.17E+00	9.58E-02	7.90E+00	99.17	OK		OK	
02	U-238	MBL	BLANK	pCi/g	8.41E-02	5.80E-02	4.64E-02					OK	OK
03	U-238	DUP	CP5005S14-15	pCi/g	1.28E+00	2.77E-01	7.16E-02				OK	OK	
04	U-238	DO	CP5005S14-15	pCi/g	1.37E+00	2.73E-01	4.62E-02					OK	
05	U-238	TRG	CP5005S16-17 5	pCi/g	1.25E+00	2.80E-01	5.52E-02					OK	
06	U-238	TRG	CP2211S01-02	pCi/g	2.03E+00	3.66E-01	7.46E-02					OK	
07	U-238	TRG	CP2211S04-05	pCi/g	1.12E+00	2.28E-01	5.23E-02					OK	
08	U-238	TRG	CP2211S06-07	pCi/g	1.33E+00	2.64E-01	7.49E-02					OK	
09	U-238	TRG	CP2211S11-12	pCi/g	1.16E+00	2.40E-01	3.90E-02					OK	
10	U-238	TRG	CP2211S13-14	pCi/g	8.00E-01	1.79E-01	4.89E-02					OK	
11	U-238	TRG	CP2211S16-17	pCi/g	1.05E+00	2.37E-01	4.91E-02					OK	
12	U-238	TRG	CP2211S18-19	pCi/g	1.03E+00	2.28E-01	7.07E-02					OK	
13	U-238	TRG	CP2211S21-22	pCi/g	8.39E-01	2.01E-01	4.08E-02					OK	

Client	Auxier & Associates, Inc.
Eberline Services Work Order	15-10064
Analysis Code	UUISO
Run	1



Lab Fraction	Nuclide	Sample Desc	Counting Date/Time	Half-life (days)	Detect	Carrier	Count Time	Counts	Bkg CPM	Eff
01	U-238	LCS	10/22/15 09:07		A_Spec	Alpha_056	170	4.61 E+02	4.00 E-03	16
02	U-238	MBL	10/22/15 09:06		A_Spec	Alpha_057	170	8.66 E+00	2.00 E-03	15.8
03	U-238	DUP	10/22/15 09:06		A_Spec	Alpha_058	170	1.18 E+02	7.00 E-03	16.4
04	U-238	DO	10/22/15 09:06		A_Spec	Alpha_059	170	1.42 E+02	2.00 E-03	17.2
05	U-238	TRG	10/22/15 09:06		A_Spec	Alpha_060	170	1.09 E+02	2.00 E-03	15.4
06	U-238	TRG	10/22/15 12:08		A_Spec	Alpha_039	170	2.00 E+02	1.00 E-02	19.3
07	U-238	TRG	10/22/15 12:08		A_Spec	Alpha_040	170	1.28 E+02	0.00 E+00	18.6
08	U-238	TRG	10/22/15 12:08		A_Spec	Alpha_041	170	1.42 E+02	1.30 E-02	18.7
09	U-238	TRG	10/22/15 12:08		A_Spec	Alpha_042	170	1.24 E+02	1.00 E-03	17.4
10	U-238	TRG	10/22/15 12:08		A_Spec	Alpha_043	170	9.80 E+01	0.00 E+00	20
11	U-238	TRG	10/22/15 12:08		A_Spec	Alpha_044	170	1.03 E+02	2.00 E-03	18.4
12	U-238	TRG	10/22/15 12:08		A_Spec	Alpha_045	170	1.07 E+02	1.00 E-02	17.6
13	U-238	TRG	10/22/15 12:08		A_Spec	Alpha_046	170	8.58 E+01	1.00 E-03	17.8

1	Run
UUISO	Analysis Code
15-10064	Eberline Services Work Order
Auxier & Associates, Inc.	Client



		Run	1
Eberline Services Work Order		Analysis Code	UJISO
15-10064			
Auxier & Associates, Inc.			

Lab Fraction	Nuclide	Sample Desc	Client Identification	Activity Units	Results	Error Estimate	MDA	LCS Known	LCS %R	LCS Flag	RPD Flag	MDA Flag	Blank Flag
01	U-235	LCS	LCS	pCi/g	3.54E-01	1.81E-01	1.39E-01					OK	
02	U-235	MBL	BLANK	pCi/g	4.61E-02	4.76E-02	5.02E-02					OK	OK
03	U-235	DUP	CP5005S14-15	pCi/g	1.48E-01	9.31E-02	8.08E-02				NA	OK	
04	U-235	DO	CP5005S14-15	pCi/g	1.44E-01	8.61E-02	7.18E-02					OK	
05	U-235	TRG	CP5005S16-17 5	pCi/g	9.77E-02	7.52E-02	5.97E-02					OK	
06	U-235	TRG	CP2211S01-02	pCi/g	1.04E-01	8.00E-02	9.25E-02					OK	
07	U-235	TRG	CP2211S04-05	pCi/g	8.64E-02	6.42E-02	6.48E-02					OK	
08	U-235	TRG	CP2211S06-07	pCi/g	1.82E-01	9.33E-02	5.55E-02					OK	
09	U-235	TRG	CP2211S11-12	pCi/g	6.74E-02	5.61E-02	4.83E-02					OK	
10	U-235	TRG	CP2211S13-14	pCi/g	8.93E-02	6.03E-02	4.22E-02					OK	
11	U-235	TRG	CP2211S16-17	pCi/g	6.38E-02	6.15E-02	7.62E-02					OK	
12	U-235	TRG	CP2211S18-19	pCi/g	5.76E-02	5.28E-02	4.98E-02					OK	
13	U-235	TRG	CP2211S21-22	pCi/g	8.45E-02	6.85E-02	7.63E-02					OK	

15000

Preliminary Data Report & Analytical Calculations
Work Order: 15-10064-UUISO-1

		Run	1
Client		Auxier & Associates, Inc.	
Eberline Services Work Order		15-10064	
Analysis Code		UUISO	

Lab Fraction	Nuclide	Sample Desc	Counting Date/Time	Half-life (days)	Detect	Carrier	Count Time	Counts	Bkg CPM	Eff
01	U-235	LCS	10/22/15 09:07		A_Spec	Alpha_056	170	1.68 E+01	7.00 E-03	16
02	U-235	MBL	10/22/15 09:06		A_Spec	Alpha_057	170	3.83 E+00	1.00 E-03	15.8
03	U-235	DUP	10/22/15 09:06		A_Spec	Alpha_058	170	1.10 E+01	0.00 E+00	16.4
04	U-235	DO	10/22/15 09:06		A_Spec	Alpha_059	170	1.20 E+01	0.00 E+00	17.2
05	U-235	TRG	10/22/15 09:06		A_Spec	Alpha_060	170	6.83 E+00	1.00 E-03	15.4
06	U-235	TRG	10/22/15 12:08		A_Spec	Alpha_039	170	8.30 E+00	1.00 E-02	19.3
07	U-235	TRG	10/22/15 12:08		A_Spec	Alpha_040	170	8.00 E+00	0.00 E+00	18.6
08	U-235	TRG	10/22/15 12:08		A_Spec	Alpha_041	170	1.57 E+01	2.00 E-03	18.7
09	U-235	TRG	10/22/15 12:08		A_Spec	Alpha_042	170	5.83 E+00	1.00 E-03	17.4
10	U-235	TRG	10/22/15 12:08		A_Spec	Alpha_043	170	8.83 E+00	1.00 E-03	20
11	U-235	TRG	10/22/15 12:08		A_Spec	Alpha_044	170	5.00 E+00	0.00 E+00	18.4
12	U-235	TRG	10/22/15 12:08		A_Spec	Alpha_045	170	4.83 E+00	1.00 E-03	17.6
13	U-235	TRG	10/22/15 12:08		A_Spec	Alpha_046	170	6.98 E+00	6.00 E-03	17.8

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Internal Fraction	Sample Desc	Client ID	Sample Date	Sample Aliquot	Tracer Aliquot (g)	Tracer ACT (dpm)	Radiometric Tracer (pCi)	Radiometric % Rec	SAF 1*	SAF 2*
01	LCS	LCS	10/12/15 00:00	1.0000	0.6517	12.1477		0.00		
02	MBL	BLANK	10/12/15 00:00	1.5000	0.6524	12.1607		0.00		
03	DUP	CP5005S14-15	10/06/15 09:50	1.5262	0.6525	12.1626		0.00		
04	DO	CP5005S14-15	10/06/15 09:50	1.5260	0.6527	12.1663		0.00		
05	TRG	CP5005S16-17 5	10/06/15 10:00	1.5231	0.6538	12.1868		0.00		
06	TRG	CP221S01-02	10/06/15 10:20	1.5058	0.6522	12.1570		0.00		
07	TRG	CP221S04-05	10/06/15 10:40	1.5218	0.6542	12.1943		0.00		
08	TRG	CP221S06-07	10/06/15 10:50	1.5179	0.6626	12.3509		0.00		
09	TRG	CP221S11-12	10/06/15 11:10	1.5262	0.6525	12.1626		0.00		
10	TRG	CP221S13-14	10/06/15 11:20	1.5014	0.6517	12.1477		0.00		
11	TRG	CP221S16-17	10/06/15 11:30	1.5168	0.6529	12.1701		0.00		
12	TRG	CP221S18-19	10/06/15 11:40	1.5123	0.6523	12.1589		0.00		
13	TRG	CP221S21-22	10/06/15 11:50	1.5106	0.6516	12.1458		0.00		

56
 0520
 60
 20-40-65

Internal Work Order		Run	Analysis Code	Date	Technician	Technician Initials	Witness Initials					
15-10064		1	UUIISO	10/15/2015 12:57	JPACHELLA	<i>JP</i>						
LCS & Matrix Spikes												
Isotope	Sol #	Activity dpm/g	Solution Date	Approx Addition	LCS Volume Used (g)	MS Volume Used (g)	LCS Volume Used (g)	MSD Volume Used (g)	LCS Known pCi	MS Added pCi	LCS Error Estimate	MSD Error Estimate
U-234	U-8a	35.240	10/15/2015	0.500	0.5106				8.11	0.00	0.000	0.000
U-238	U-8a	34.350	10/15/2015	0.500	0.5106				7.90	0.00	0.000	0.000

IC-99 MS IC-2a 22043.638 7/5/2014 0.1

Tracers													
fraction	Isotope	Sol #	Activity dpm/g	Solution Date	Volume Used (g)	Approx Addition	Tracer						LCS
01	U-232	U-10a	18.640	10/15/2015	0.6517	0.6500							
02	U-232	U-10a	18.640	10/15/2015	0.6524	0.6500							
03	U-232	U-10a	18.640	10/15/2015	0.6525	0.6500							
04	U-232	U-10a	18.640	10/15/2015	0.6527	0.6500							
05	U-232	U-10a	18.640	10/15/2015	0.6538	0.6500							
06	U-232	U-10a	18.640	10/15/2015	0.6522	0.6500							
07	U-232	U-10a	18.640	10/15/2015	0.6542	0.6500							
08	U-232	U-10a	18.640	10/15/2015	0.6626	0.6500							
09	U-232	U-10a	18.640	10/15/2015	0.6525	0.6500							
10	U-232	U-10a	18.640	10/15/2015	0.6517	0.6500							
11	U-232	U-10a	18.640	10/15/2015	0.6529	0.6500							
12	U-232	U-10a	18.640	10/15/2015	0.6523	0.6500							
13	U-232	U-10a	18.640	10/15/2015	0.6516	0.6500							
Matrix Spike													

Aliquot Worksheet

Work Order		Run	Analysis Code	Rpt Units	Lab Deadline	Technician	
15-10064		1	UUISO	grams	11/3/2015	JPACHELLA	

Lab Fraction	Auxier & Associates, Inc.		Sample Type	Muffle Data		Dilution Data			Aliquot Data		MS Aliquot Data		H-3 Solids Only	
	Client ID	Run		Ratio Post/Pre	No. of Dils	Dil Factor	Ratio	Aliquot	Net Equiv	Aliquot	Net Equiv	Water Added (ml)	H3 Dist Aliq	
01	LCS	1	LCS					1.0000E+00	1.0000E+00					
02	BLANK		MBL					1.5000E+00	1.5000E+00					
03	CP5005S14-15		DUP					1.5262E+00	1.5262E+00					
04	CP5005S14-15		DO					1.5260E+00	1.5260E+00					
05	CP5005S16-17 5		TRG					1.5231E+00	1.5231E+00					
06	CP2011S01-02		TRG					1.5058E+00	1.5058E+00					
07	CP2011S04-05		TRG					1.5218E+00	1.5218E+00					
08	CP2011S06-07		TRG					1.5179E+00	1.5179E+00					
09	CP2011S11-12		TRG					1.5262E+00	1.5262E+00					
10	CP2011S13-14		TRG					1.5014E+00	1.5014E+00					
11	CP2011S16-17		TRG					1.5168E+00	1.5168E+00					
12	CP2011S18-19		TRG					1.5123E+00	1.5123E+00					
13	CP2011S21-22		TRG					1.5106E+00	1.5106E+00					

Comments	
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Technician: JPachella Date: 10/15/15

Rough Sample Preparation
 Log Book

Work Order	Lab Deadline	Date Received in Prep	Date Sealed	Date Returned	Technician
15-10064	11/3/2015	10/12/2015	10/13/2015	10/14/2015	KSALLINGS

Eberline Fraction	Auxier & Associates, Inc. Client ID	Tare (g)		Gross (g)		Net (g)		Percent		Gamma		Special Info
		Pan Wt	Wet Wt	Dry Wt	Wet Wt	Dry Wt	Wet Wt	Dry Wt	Liquid	Solid	Dry Wt		LEPS Wt
04	CP5005S14-15	14.5400	744.8100	579.5100	730.2700	564.9700	77.36%	22.64%	77.36%			
05	CP5005S16-17 5	14.4700	773.6400	600.0800	759.1700	585.6100	77.14%	22.86%	77.14%			
06	CP2011S01-02	14.4800	1015.4200	870.1800	1000.9400	855.7000	85.49%	14.51%	85.49%			
07	CP2011S04-05	14.5200	1059.7800	838.5600	1045.2600	824.0400	78.84%	21.16%	78.84%			
08	CP2011S06-07	14.5300	968.3000	780.3800	953.7700	765.8500	80.30%	19.70%	80.30%			
09	CP2011S11-12	14.4900	1014.0000	807.9800	999.5100	793.4900	79.39%	20.61%	79.39%			
10	CP2011S13-14	14.4700	914.1000	744.3700	899.6300	729.9000	81.13%	18.87%	81.13%			
11	CP2011S16-17	14.4800	650.2700	509.0100	635.7900	494.5300	77.78%	22.22%	77.78%			
12	CP2011S18-19	14.4900	722.1900	554.9000	707.7000	540.4100	76.36%	23.64%	76.36%			
13	CP2011S21-22	14.5500	919.5800	717.8000	905.0300	703.2500	77.70%	22.30%	77.70%			
	11/16/15											

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

000007

LB
10/22/15

Apex-Alpha™

Sample Description: SPIKE
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001319
 Batch Identification: 1510064A-UU
 Sample Identification: 01
 Sample Geometry: Shelf 2
 Procedure Description: U iso

Detector Name: Alpha_056
 Chamber Serial Number: 10006124B
 Detector Serial Number: 56
 Env. Background: System Bkgd 131892
 Reagent Blank: <not performed>

Sample Size: 1.000E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/22/2015 6:05:32 AM
 Acquisition Date/Time: 10/22/2015 9:07:00 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
 Tracer Quantity: 0.652 mL
 Effective Efficiency: 0.1557 +/- 0.0094
 Counting Efficiency: 0.1600 +/- 0.0028 on 12/13/2014 2:30:22 PM
 Chem. Recovery Factor: 0.9726 +/- 0.0614

Control Certificate Name: NatU_U-8A
 Chem. Recov. of Control: U-238 0.966693 +/- 0.079367
 Peak Match Tolerance: 0.150 MeV

 PEAK AREA REPORT

Nuclide	Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
U-232	T 5.281	319.32	10.98	0.68	0.00E+000	10.0
U-234	4.734	450.13	9.26	1.87	0.00E+000	15.2
U-235	4.378	16.81	49.75	1.19	0.00E+000	3.0
U-238	4.156	461.32	9.13	0.68	0.00E+000	9.6

T = Tracer Peak used for Effective Efficiency

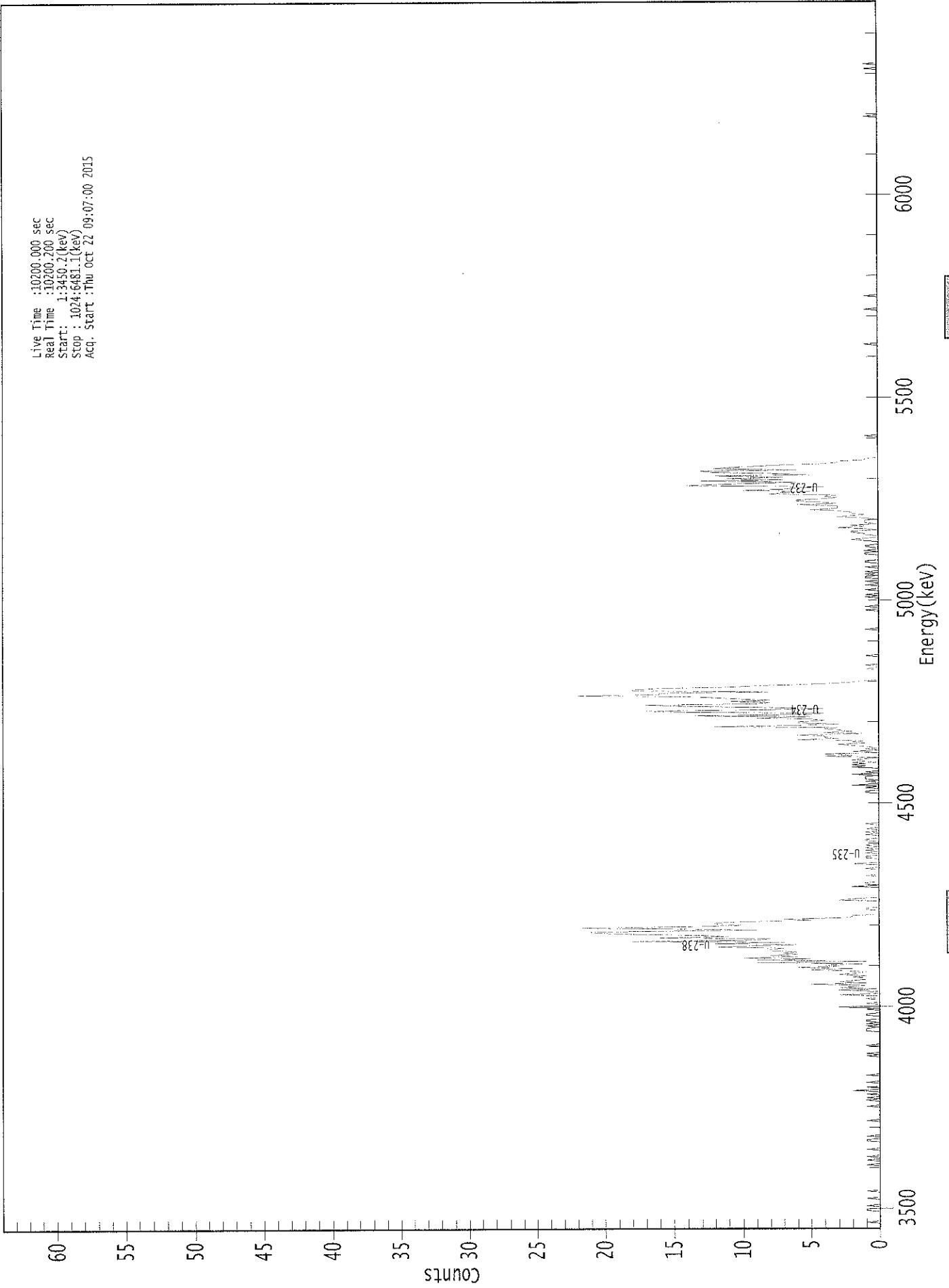
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.997	5302.50*	5.45E+000 +/- 6.47E-001	9.62E-002 +/- 1.14E-002
U-234	0.995	4761.50*	7.68E+000 +/- 1.16E+000	1.29E-001 +/- 1.53E-002
U-235	1.000	4385.50*	3.54E-001 +/- 1.81E-001	1.39E-001 +/- 1.65E-002
U-238	0.994	4184.40*	7.83E+000 +/- 1.17E+000	9.58E-002 +/- 1.14E-002

AG
10/23/15

0000131943.CNF

Live Time :10200.000 sec
Real Time :10200.200 Sec
Start : 1:34:50.2(keV)
Stop : 1024:6481.1(keV)
Acq. Start :Thu Oct 22 09:07:00 2015



ROI Type: 1

ROI Type: 3

08005

 ***** 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	0	0	0	0	0	1	0	0
9:	0	0	0	0	0	0	0	0	1
17:	1	0	0	1	0	0	0	0	0
25:	0	1	0	0	0	0	0	0	1
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	1	0	0
57:	0	1	0	0	0	1	0	0	0
65:	0	0	1	0	0	0	0	0	0
73:	0	1	1	0	0	0	1	0	0
81:	0	0	0	0	0	0	0	0	0
89:	0	0	1	0	0	0	0	0	0
97:	0	0	0	0	0	0	0	1	0
105:	0	0	0	1	0	0	1	0	0
113:	1	0	0	2	0	0	0	1	0
121:	0	0	1	0	0	0	0	0	0
129:	1	0	0	0	0	0	0	0	0
137:	0	0	0	0	0	0	0	0	0
145:	1	0	1	0	0	0	0	0	0
153:	0	1	0	0	0	0	0	0	0
161:	0	0	0	0	0	0	1	1	1
169:	0	1	0	1	0	0	1	1	0
177:	0	0	1	1	0	0	0	0	1
185:	0	3	0	0	0	1	0	0	0
193:	1	0	0	3	0	0	1	0	3
201:	0	3	2	1	5	1	1	3	2
209:	1	1	2	1	3	2	2	1	2
217:	5	2	6	3	4	1	1	9	1
225:	9	5	10	6	8	6	6	7	6
233:	8	8	7	12	9	6	6	12	7
241:	18	9	8	16	11	13	13	18	21
249:	21	9	13	22	14	10	10	12	12
257:	10	5	7	3	2	2	2	0	0
265:	0	0	1	1	0	0	0	0	0
273:	0	0	3	2	0	0	0	0	0
281:	0	0	0	0	0	0	2	0	1
289:	1	0	0	0	0	0	0	1	0
297:	0	0	0	0	0	1	0	0	0
305:	2	0	0	0	0	0	1	1	0
313:	0	1	0	1	0	0	1	0	1
321:	0	0	0	1	1	0	0	0	0
329:	1	0	1	0	0	0	1	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	1	1	0	0	0	1

369: 0 2 0 0 1 0 1 1

Sample Title: 01

Channel	1	2	3	4	5	6	7	8
377:	1	0	2	0	1	0	0	0
385:	2	1	2	1	2	1	2	1
393:	0	4	2	4	0	2	0	1
401:	0	1	2	3	1	2	1	6
409:	3	4	4	6	1	4	2	3
417:	4	3	12	6	3	6	6	4
425:	5	9	5	14	5	4	15	17
433:	8	4	9	14	17	9	8	11
441:	8	10	12	14	22	16	16	8
449:	18	18	16	11	9	6	3	2
457:	1	0	0	0	0	0	0	0
465:	0	0	1	0	0	1	0	0
473:	0	0	0	0	0	1	0	0
481:	0	0	0	0	0	0	0	0
489:	0	0	0	0	0	0	0	0
497:	0	0	0	1	0	0	0	0
505:	0	0	0	0	0	0	0	0
513:	0	0	0	1	0	0	1	0
521:	0	0	0	0	0	0	1	0
529:	1	0	0	0	1	0	0	0
537:	1	0	0	1	0	0	1	1
545:	0	1	0	1	0	0	0	1
553:	0	0	0	1	1	0	0	0
561:	0	0	1	1	0	1	0	0
569:	1	1	0	0	0	1	2	1
577:	0	0	1	1	2	2	0	1
585:	3	1	2	0	1	1	1	0
593:	1	3	2	1	2	2	3	5
601:	3	3	3	6	3	4	6	6
609:	4	3	4	3	8	7	5	10
617:	7	6	4	14	12	9	6	13
625:	7	11	7	12	5	8	12	13
633:	6	12	11	9	7	4	3	3
641:	1	1	0	0	0	0	0	0
649:	0	0	0	0	0	0	0	0
657:	0	0	0	0	1	0	0	0
665:	0	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:	1	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	1	0	0
769:	0	0	0	0	0	0	0	0
777:	1	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0

801: 0 0 0 0 0 0 0 0 0

Sample Title: 01

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

Apex-Alpha™

KS
collected

Sample Description: BLANK
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001319
 Batch Identification: 1510064A-UU
 Sample Identification: 02
 Sample Geometry: Shelf 2
 Procedure Description: U iso

Detector Name: Alpha_057
 Chamber Serial Number: 01017326A
 Detector Serial Number: 57
 Env. Background: System Bkgd 131893
 Reagent Blank: <not performed>

Sample Size: 1.500E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/22/2015 6:05:32 AM
 Acquisition Date/Time: 10/22/2015 9:06:50 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
 Tracer Quantity: 0.652 mL
 Effective Efficiency: 0.1815 +/- 0.0103
 Counting Efficiency: 0.1577 +/- 0.0028 on 12/13/2014 2:27:38 PM
 Chem. Recovery Factor: 1.1512 +/- 0.0684

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 5.287	372.83	10.15	0.17	0.00E+000	4.9
U-234	4.738	5.83	82.55	0.17	0.00E+000	3.0
U-235	4.420	3.83	102.72	0.17	0.00E+000	3.0
U-238	4.122	8.66	68.12	0.34	0.00E+000	3.0

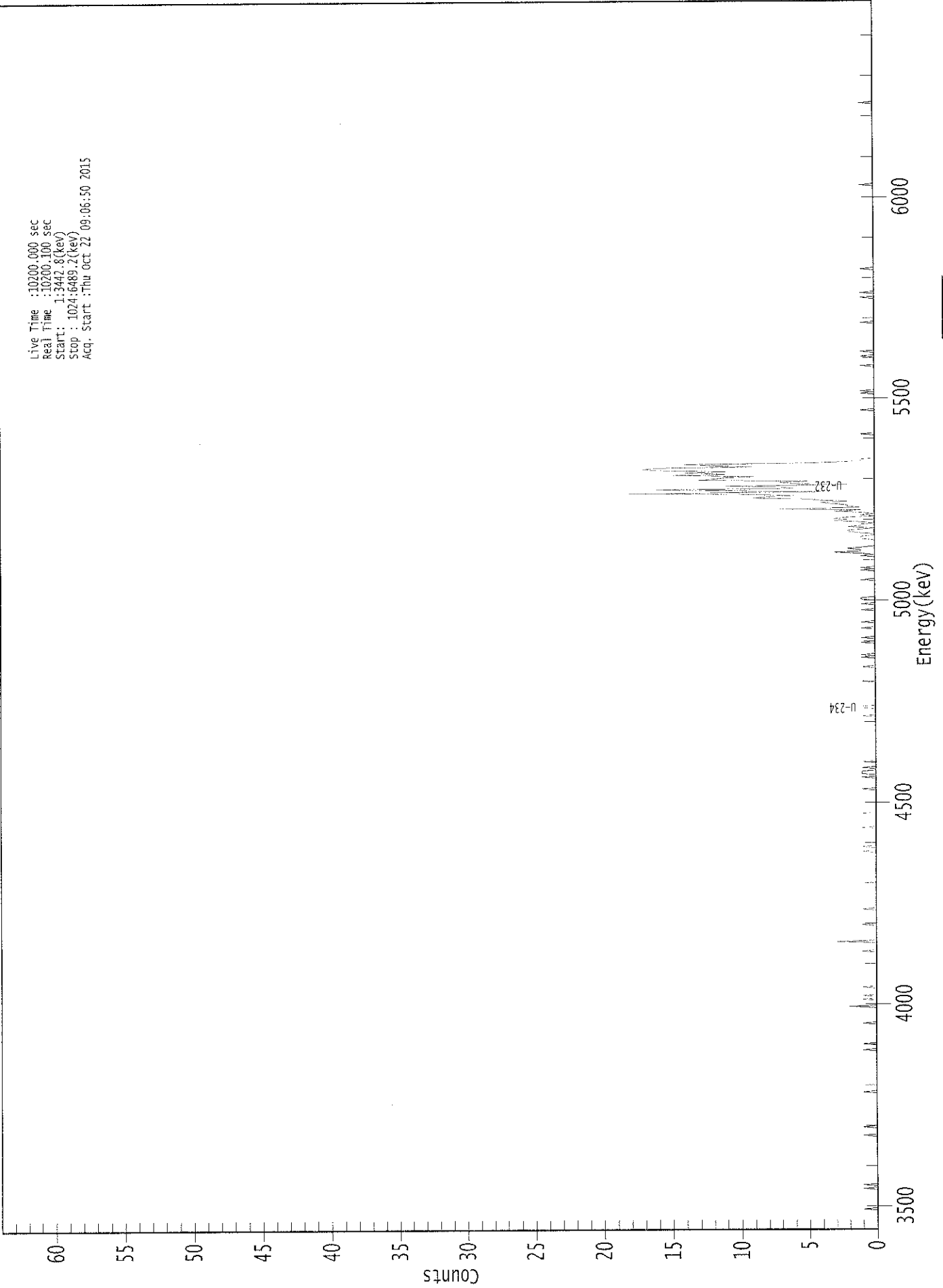
T = Tracer Peak used for Effective Efficiency

----- ----- NUCLIDE ANALYSIS RESULTS ----- -----						
Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)		
U-232	0.998	5302.50*	3.63E+000 +/- 4.04E-001	4.07E-002	+/-	4.52E-003
U-234	0.996	4761.50*	5.68E-002 +/- 4.73E-002	4.07E-002	+/-	4.52E-003
U-235	0.992	4385.50*	4.61E-002 +/- 4.76E-002	5.02E-002	+/-	5.58E-003
U-238	0.973	4184.40*	8.41E-002 +/- 5.80E-002	4.64E-002	+/-	5.16E-003

AG
10/23/15

0000131944.CNF

Live Time :10200.000 sec
Real Time :10200.100 sec
Start : 1:3442.8(kev)
Stop : 1024:6489.2(kev)
Acq. Start :Thu Oct 22 09:06:50 2015



ROI Type: 1

ROI Type: 3

10000

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

Sample Title: 02

Elapsed Live time: 10200
 Elapsed Real Time: 10200

Channel	1	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	1	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0	0
33:	0	0	1	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	1	0	0
81:	0	0	0	0	0	1	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	1	0	0	0	0	0	0
121:	0	0	0	0	0	0	0	0	0
129:	0	0	0	0	0	0	0	0	0
137:	0	0	0	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	0	0	0	0	0	0	0
169:	0	0	0	1	0	0	0	0	0
177:	0	0	0	0	0	0	0	0	0
185:	0	2	0	0	0	0	0	0	1
193:	0	0	1	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	1
233:	0	0	0	0	0	0	0	0	3
241:	0	0	0	0	0	0	0	0	0
249:	0	0	0	0	0	1	0	0	0
257:	0	0	0	0	0	0	0	0	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	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	0	0	1	0	0
321:	0	0	0	0	0	0	0	0	0
329:	0	0	0	0	0	0	1	0	0
337:	0	0	0	0	0	0	0	0	0
345:	0	0	1	0	0	0	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 0 0 0 0 0

Sample Title: 02

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

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	1	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	0	0
937:	0	1	0	0	0	0	0	0
945:	0	0	0	0	0	0	0	0
953:	0	0	0	0	0	0	0	0
961:	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	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™

LB
10/22/15

Sample Description: CP5005S14-15-DUP
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001319
 Batch Identification: 1510064A-UU
 Sample Identification: 03
 Sample Geometry: Shelf 2
 Procedure Description: U iso

Detector Name: Alpha_058
 Chamber Serial Number: 01017326B
 Detector Serial Number: 58
 Env. Background: System Bkgd 131894
 Reagent Blank: <not performed>

Sample Size: 1.526E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/6/2015 6:05:32 AM
 Acquisition Date/Time: 10/22/2015 9:06:52 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
 Tracer Quantity: 0.652 mL
 Effective Efficiency: 0.1593 +/- 0.0096
 Counting Efficiency: 0.1640 +/- 0.0029 on 12/13/2014 2:26:06 PM
 Chem. Recovery Factor: 0.9712 +/- 0.0607

Peak Match Tolerance: 0.150 MeV

 PEAK AREA REPORT

Nuclide	Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
U-232	T 5.279	327.15	10.85	0.85	0.00E+000	30.2
U-234	4.730	106.83	18.98	0.17	0.00E+000	5.8
U-235	4.365	11.00	61.72	0.00	0.00E+000	6.0
U-238	4.157	117.81	18.16	1.19	0.00E+000	8.5

T = Tracer Peak used for Effective Efficiency

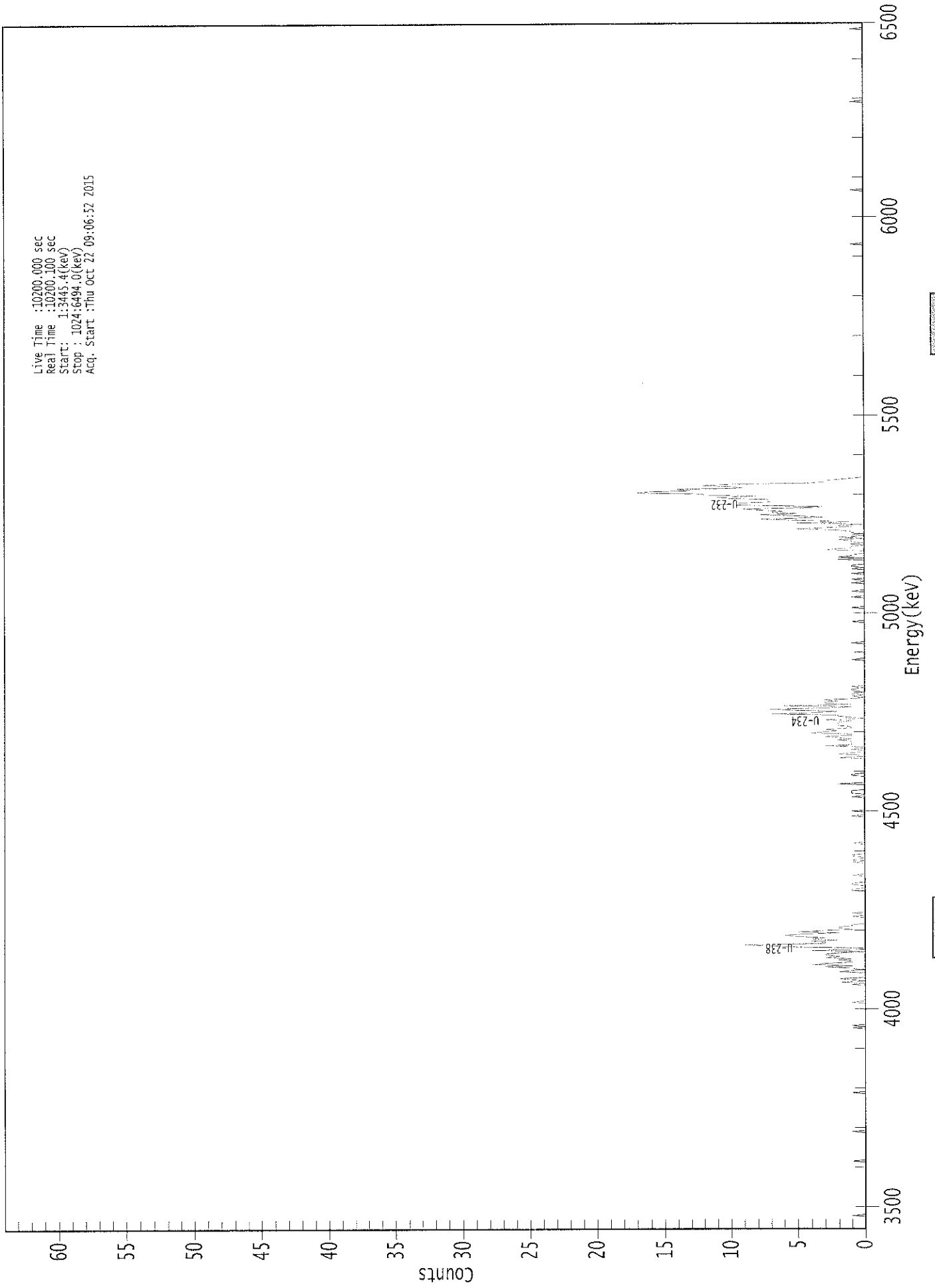
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.996	5302.50*	3.57E+000 +/- 4.20E-001	6.54E-002 +/- 7.69E-003
U-234	0.993	4761.50*	1.17E+000 +/- 2.60E-001	4.56E-002 +/- 5.36E-003
U-235	0.997	4385.50*	1.48E-001 +/- 9.31E-002	8.08E-002 +/- 9.49E-003
U-238	0.995	4184.40*	1.28E+000 +/- 2.77E-001	7.16E-002 +/- 8.42E-003

AG
10/23/15

0000131945.CNF

Live Time :10200.000 sec
Real Time :10200.100 sec
Start : 1:3445.4(keV)
Stop : 1024:6494.0(keV)
Acq. Start :Thu Oct 22 09:06:52 2015



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	1	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	1	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	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	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	0
129:	0	0	0	0	0	0	0	0	0
137:	0	0	0	0	0	0	0	0	0
145:	0	0	0	0	0	0	0	0	0
153:	0	0	0	0	0	0	0	0	0
161:	0	0	0	0	0	0	0	0	0
169:	0	0	1	0	1	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:	1	0	0	0	0	0	0	0	0
201:	0	0	0	0	0	0	0	0	1
209:	0	2	0	1	2	0	0	0	0
217:	0	0	2	1	0	1	3	1	1
225:	4	3	1	1	2	1	3	2	2
233:	3	3	2	0	4	0	0	5	5
241:	7	9	3	3	4	2	4	3	3
249:	5	6	5	2	5	3	1	2	2
257:	2	1	1	0	0	0	0	0	0
265:	0	1	0	0	1	0	0	0	0
273:	0	0	0	0	0	0	0	0	0
281:	0	0	0	0	0	0	0	1	1
289:	1	0	0	0	1	1	0	0	0
297:	0	0	0	0	1	0	0	0	0
305:	0	0	0	0	0	0	0	1	1
313:	0	1	0	0	1	1	0	0	0
321:	0	0	0	0	0	0	0	1	1
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	0	0
353:	0	0	1	0	0	0	0	0	0
361:	0	0	0	0	0	0	1	0	0

369: 0 1 1 1 0 0 0 0

Sample Title: 03

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

801: 0 0 0 0 0 0 0 0

Sample Title: 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	1	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	1	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	0	0
937:	0	0	0	0	0	0	0	0
945:	0	0	0	0	0	0	0	0
953:	0	0	0	1	0	0	0	0
961:	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	1	0	0	0	0	0	0

KB
10/22/15

Apex-Alpha™

Sample Description: CP5005S14-15
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001319
 Batch Identification: 1510064A-UU
 Sample Identification: 04
 Sample Geometry: Shelf 2
 Procedure Description: U iso

Detector Name: Alpha_059
 Chamber Serial Number: 10006125A
 Detector Serial Number: 59
 Env. Background: System Bkgd 131895
 Reagent Blank: <not performed>

Sample Size: 1.526E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/6/2015 6:05:32 AM
 Acquisition Date/Time: 10/22/2015 9:06:54 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
 Tracer Quantity: 0.653 mL
 Effective Efficiency: 0.1793 +/- 0.0102
 Counting Efficiency: 0.1717 +/- 0.0030 on 12/13/2014 2:24:23 PM
 Chem. Recovery Factor: 1.0441 +/- 0.0623

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 5.272	368.32	10.22	0.68	0.00E+000	31.5
U-234	4.722	127.66	17.37	0.34	0.00E+000	3.9
U-235	4.376	12.00	58.89	0.00	0.00E+000	3.0
U-238	4.147	141.66	16.49	0.34	0.00E+000	12.3

T = Tracer Peak used for Effective Efficiency

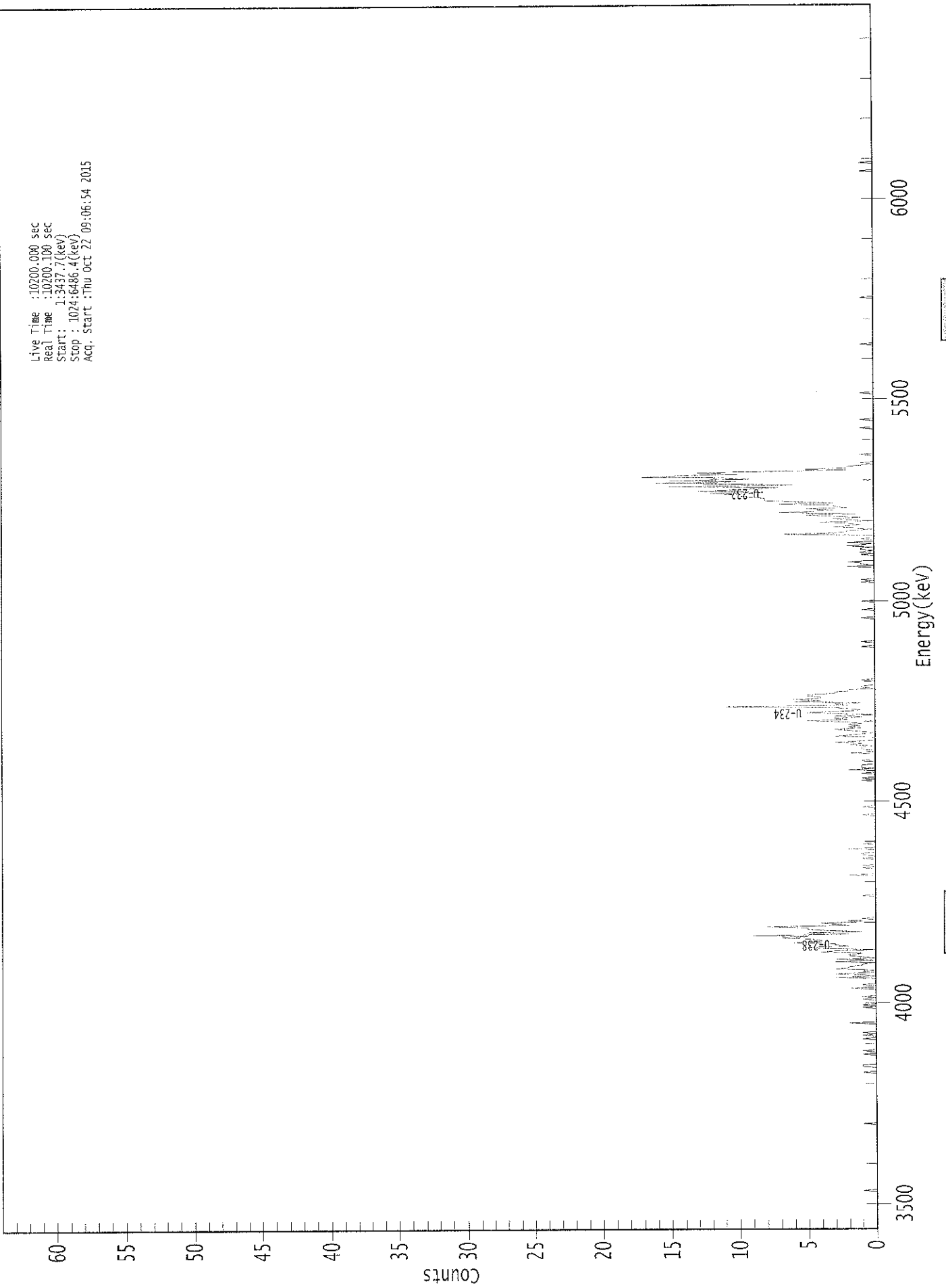
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.993	5302.50*	3.58E+000 +/- 4.00E-001	5.48E-002 +/- 6.12E-003
U-234	0.989	4761.50*	1.24E+000 +/- 2.56E-001	4.64E-002 +/- 5.19E-003
U-235	0.999	4385.50*	1.44E-001 +/- 8.61E-002	7.18E-002 +/- 8.02E-003
U-238	0.990	4184.40*	1.37E+000 +/- 2.73E-001	4.62E-002 +/- 5.16E-003

KB
10/23/15

0000131946.CNF

Live Time :10200.000 sec
Real Time :10200.100 sec
Start : 1:3437.7(kev)
Stop : 1024:6486.4(kev)
Acq. Start :Thu Oct 22 09:06:54 2015



ROI Type: 1

ROI Type: 3

10100

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

Sample Title: 04

Elapsed Live time: 10200
 Elapsed Real Time: 10200

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

369: 0 0 0 0 0 0 0 1 0

Sample Title: 04

Channel	1	2	3	4	5	6	7	8
377:	1	0	0	0	1	0	0	2
385:	0	1	1	1	0	0	0	1
393:	0	0	0	0	0	2	0	0
401:	1	1	1	0	2	1	3	1
409:	0	0	0	3	2	1	0	1
417:	2	3	1	2	1	2	1	2
425:	5	2	3	1	3	0	3	5
433:	2	1	2	3	11	2	3	1
441:	6	4	6	4	4	5	5	3
449:	3	2	2	0	1	1	0	0
457:	0	0	1	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	1	0
489:	0	0	1	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	0	1	0	0
521:	0	0	0	0	1	0	0	0
529:	0	0	0	0	0	0	0	0
537:	0	0	0	0	1	0	1	0
545:	0	0	0	0	0	0	0	0
553:	0	2	0	1	1	2	0	0
561:	0	0	0	1	0	1	0	1
569:	1	0	2	1	0	2	0	0
577:	1	0	0	0	7	3	2	2
585:	0	1	3	2	1	2	4	0
593:	2	3	1	3	5	1	7	5
601:	3	5	2	3	3	7	3	6
609:	8	8	8	9	10	10	12	8
617:	13	10	9	7	15	6	10	16
625:	10	15	9	11	17	14	10	13
633:	10	2	5	2	2	1	0	1
641:	0	0	0	0	0	0	1	0
649:	0	0	0	0	0	0	0	0
657:	0	0	0	0	0	0	0	0
665:	0	0	0	0	1	0	0	0
673:	0	0	0	1	0	0	0	0
681:	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	0	0	0
697:	0	1	0	0	0	0	0	0
705:	0	0	0	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	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	1	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: 04

Channel								
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	1	0	0	0	0
889:	0	0	1	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	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
10/22/15

Sample Description: CP5005S16-17 5
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001319
 Batch Identification: 1510064A-UU
 Sample Identification: 05
 Sample Geometry: Shelf 2
 Procedure Description: U iso

Detector Name: Alpha_060
 Chamber Serial Number: 10006125B
 Detector Serial Number: 60
 Env. Background: System Bkgd 131896
 Reagent Blank: <not performed>

Sample Size: 1.523E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/6/2015 6:05:32 AM
 Acquisition Date/Time: 10/22/2015 9:06:58 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
 Tracer Quantity: 0.654 mL
 Effective Efficiency: 0.1504 +/- 0.0092
 Counting Efficiency: 0.1543 +/- 0.0028 on 12/13/2014 2:22:05 PM
 Chem. Recovery Factor: 0.9747 +/- 0.0623

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	5.289	309.49	11.15	0.51	0.00E+000	10.2
U-234	4.740	94.49	20.23	0.51	0.00E+000	4.2
U-235	4.391	6.83	76.08	0.17	0.00E+000	3.0
U-238	4.161	108.66	18.84	0.34	0.00E+000	11.5

T = Tracer Peak used for Effective Efficiency

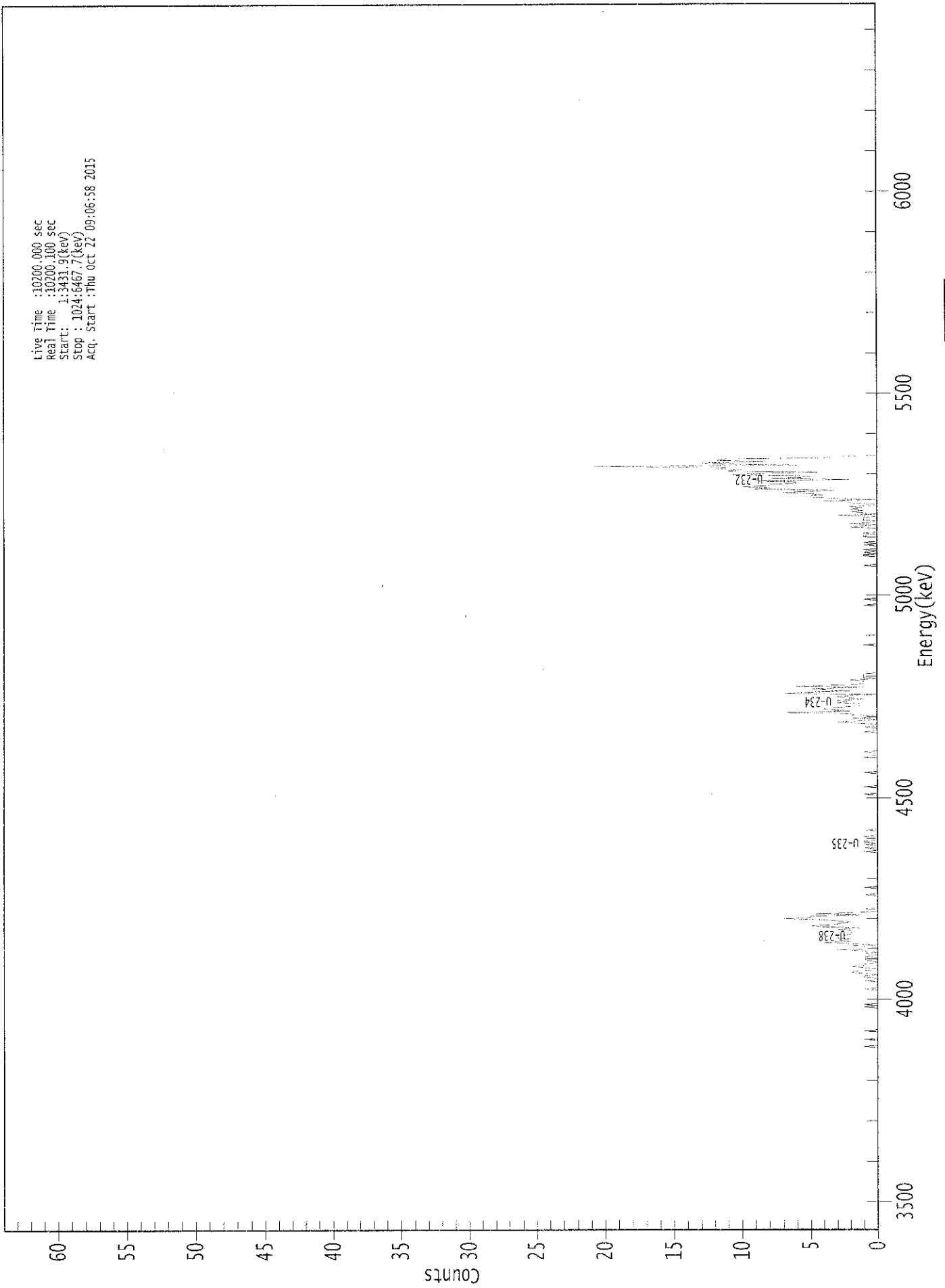
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.999	5302.50*	3.59E+000 +/- 4.32E-001	6.09E-002 +/- 7.32E-003
U-234	0.997	4761.50*	1.10E+000 +/- 2.58E-001	6.08E-002 +/- 7.32E-003
U-235	1.000	4385.50*	9.77E-002 +/- 7.52E-002	5.97E-002 +/- 7.18E-003
U-238	0.996	4184.40*	1.25E+000 +/- 2.80E-001	5.52E-002 +/- 6.64E-003

AG
10/23/15

0000131947.CNF

Live Time :10200.000 sec
Real Time :10200.100 sec
Start : 1:3431.9(kev)
Stop : 1024:5467.7(kev)
Acq. Start :Thu Oct 22 09:06:58 2015



ROI Type: 1.

ROI Type: 3

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

Sample Title: 05

Elapsed Live time: 10200
 Elapsed Real Time: 10200

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

369: 0 1 0 0 0 0 0 0 0

Sample Title: 05

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

801: 0 0 0 0 0 0 0 0

Sample Title: 05

Channel								
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	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

KS
10/22/15

Apex-Alpha™

Sample Description: CP2211S01-02
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001319
 Batch Identification: 1510064A-UU
 Sample Identification: 06
 Sample Geometry: Shelf 2
 Procedure Description: U iso

Detector Name: Alpha_039
 Chamber Serial Number: 06027396A
 Detector Serial Number: 83109
 Env. Background: System Bkgd 131875
 Reagent Blank: <not performed>

Sample Size: 1.506E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/6/2015 6:05:32 AM
 Acquisition Date/Time: 10/22/2015 12:08:37 PM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
 Tracer Quantity: 0.652 mL
 Effective Efficiency: 0.1728 +/- 0.0100
 Counting Efficiency: 0.1934 +/- 0.0034 on 10/25/2014 2:53:34 PM
 Chem. Recovery Factor: 0.8935 +/- 0.0541

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 5.287	354.79	10.44	2.21	0.00E+000	14.5
U-234	4.738	200.13	13.93	1.87	0.00E+000	5.3
U-235	4.417	8.30	75.75	1.70	0.00E+000	3.0
U-238	4.162	200.30	13.92	1.70	0.00E+000	8.0

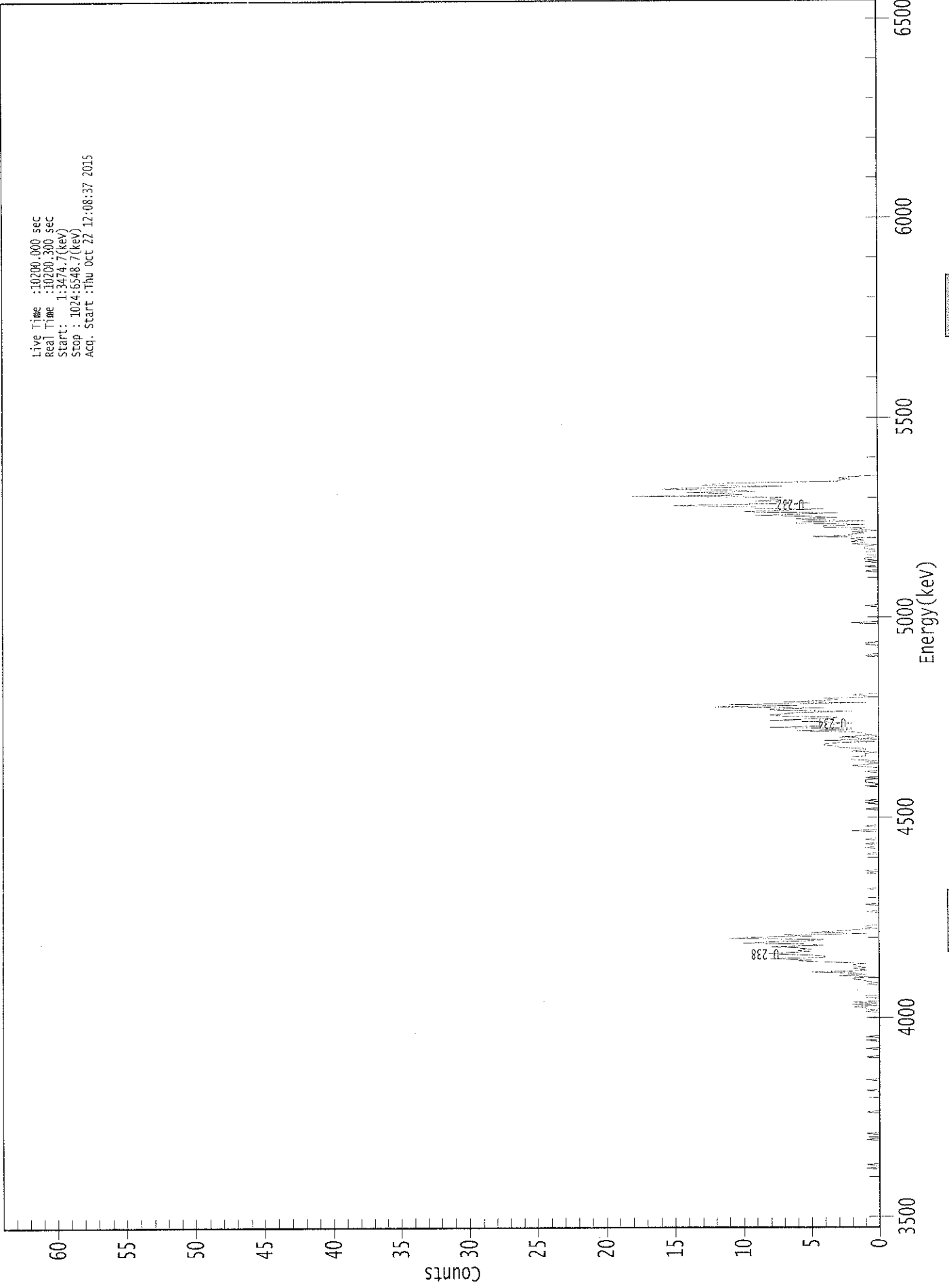
T = Tracer Peak used for Effective Efficiency

 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.998	5302.50*	3.62E+000 +/- 4.12E-001	8.16E-002 +/- 9.29E-003
U-234	0.996	4761.50*	2.04E+000 +/- 3.67E-001	7.73E-002 +/- 8.79E-003
U-235	0.993	4385.50*	1.04E-001 +/- 8.00E-002	9.25E-002 +/- 1.05E-002
U-238	0.996	4184.40*	2.03E+000 +/- 3.66E-001	7.46E-002 +/- 8.49E-003

AG
10/23/15

0000131975.CNF



Live Time :10200.000 sec
Real Time :10200.300 sec
Start : 1:3474.7(keV)
Stop : 1024:6548.7(keV)
Acq. Start :Thu Oct 22 12:08:37 2015

11000

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	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	1	0	0	1	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	1	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	0	0	0
105:	0	0	0	0	0	0	0	0	0
113:	0	0	1	0	0	0	0	0	0
121:	0	0	0	1	0	0	0	0	0
129:	0	0	0	0	0	0	0	0	0
137:	0	0	0	0	0	0	1	0	0
145:	0	0	0	0	0	1	0	0	0
153:	0	0	0	0	1	0	0	0	1
161:	0	0	0	0	0	0	0	0	0
169:	0	0	0	0	0	0	0	0	1
177:	0	0	0	0	1	0	1	1	1
185:	2	0	2	0	2	0	0	0	0
193:	1	1	0	0	0	0	0	0	0
201:	0	0	0	1	0	1	1	1	2
209:	2	0	3	1	2	5	1	1	1
217:	2	1	2	2	1	3	6	5	5
225:	8	4	4	5	8	7	5	6	6
233:	5	6	8	4	5	10	8	5	5
241:	4	11	9	5	7	1	5	3	3
249:	2	0	1	1	0	0	0	0	0
257:	0	0	0	0	0	0	0	0	1
265:	0	0	0	0	0	1	0	0	0
273:	0	0	0	0	0	0	0	0	0
281:	0	0	1	0	0	0	0	0	0
289:	0	0	0	0	0	0	0	0	1
297:	0	1	0	0	0	0	0	0	0
305:	0	0	0	0	0	0	0	0	1
313:	0	0	0	0	1	0	0	0	1
321:	0	0	0	1	0	0	0	0	0
329:	0	0	2	0	0	0	1	0	0
337:	0	0	0	0	0	0	0	0	0
345:	0	0	0	0	1	0	0	0	0
353:	0	1	0	1	0	0	0	0	0
361:	0	0	0	0	0	0	0	0	1

369: 0 0 1 1 1 0 1 0

Sample Title: 06

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

801: 0 0 0 0 0 0 0 0

Sample Title: 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
10/22/15*

Sample Description: CP2211S04-05
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001319
 Batch Identification: 1510064A-UU
 Sample Identification: 07
 Sample Geometry: Shelf 2
 Procedure Description: U iso

Detector Name: Alpha_040
 Chamber Serial Number: 06027396B
 Detector Serial Number: 91135
 Env. Background: System Bkgd 131876
 Reagent Blank: <not performed>

Sample Size: 1.522E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/6/2015 6:05:32 AM
 Acquisition Date/Time: 10/22/2015 12:08:39 PM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
 Tracer Quantity: 0.654 mL
 Effective Efficiency: 0.1993 +/- 0.0109
 Counting Efficiency: 0.1856 +/- 0.0032 on 10/25/2014 2:57:14 PM
 Chem. Recovery Factor: 1.0738 +/- 0.0614

Peak Match Tolerance: 0.150 MeV

 PEAK AREA REPORT

Nuclide	Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
U-232	T 5.277	410.32	9.69	0.68	0.00E+000	29.6
U-234	4.726	134.66	16.92	0.34	0.00E+000	9.6
U-235	4.375	8.00	73.50	0.00	0.00E+000	3.0
U-238	4.154	128.00	17.39	0.00	0.00E+000	17.2

T = Tracer Peak used for Effective Efficiency

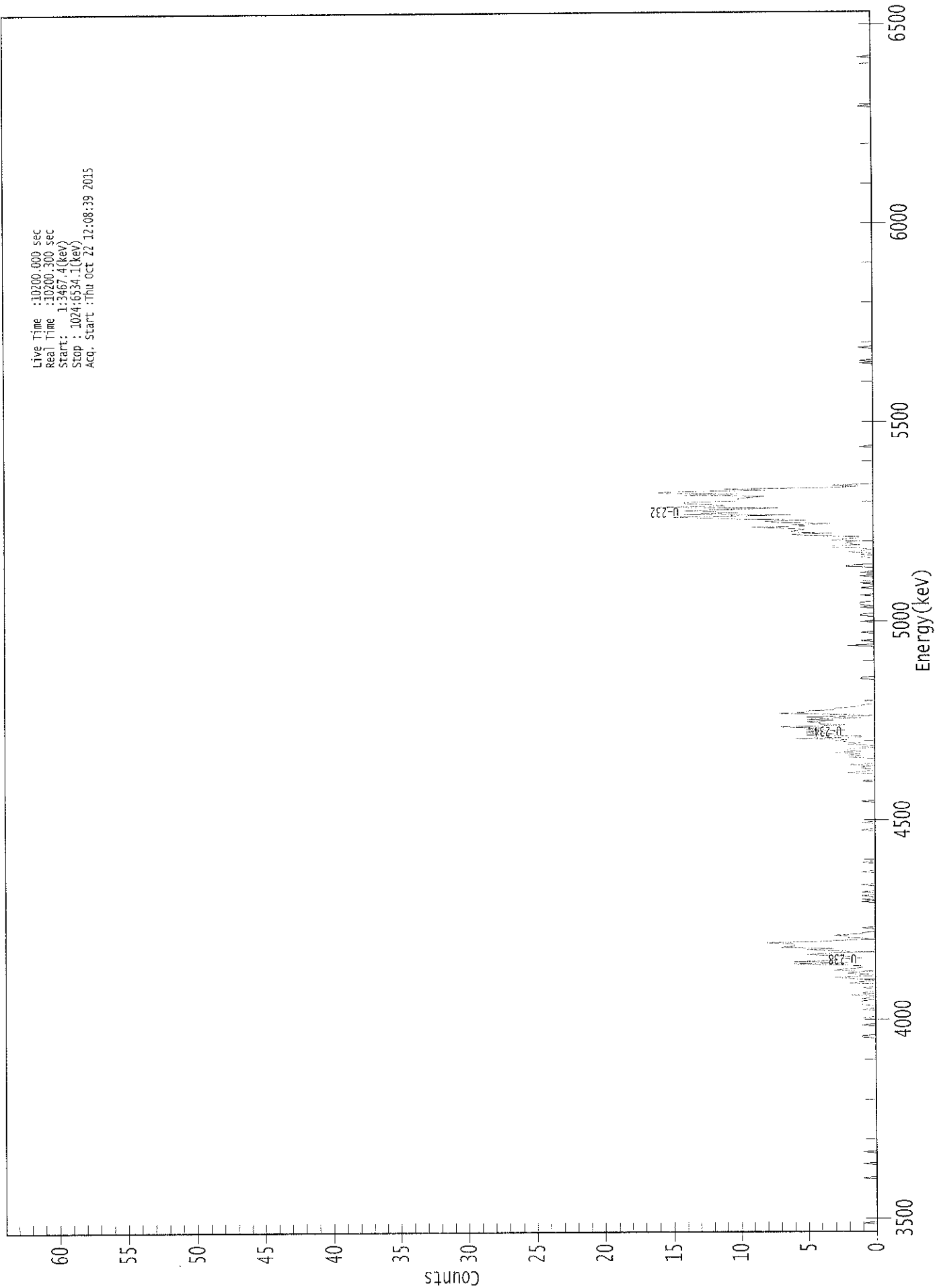
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.996	5302.50*	3.59E+000 +/- 3.84E-001	4.94E-002 +/- 5.28E-003
U-234	0.991	4761.50*	1.18E+000 +/- 2.36E-001	4.19E-002 +/- 4.47E-003
U-235	0.999	4385.50*	8.64E-002 +/- 6.42E-002	6.48E-002 +/- 6.92E-003
U-238	0.994	4184.40*	1.12E+000 +/- 2.28E-001	5.23E-002 +/- 5.59E-003

*AG
10/23/15*

0000131969.CNF

Live Time :10200.000 sec
Real Time :10200.300 sec
Start: 1:3467.4(kev)
Stop : 1024:6534.1(kev)
Acq. Start :Thu Oct 22 12:08:39 2015



01100

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: 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	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	1	0	0
49:	0	0	0	0	0	0	0	0	0
57:	0	1	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	0
81:	0	0	0	0	0	0	0	0	0
89:	0	0	0	0	0	0	0	0	0
97:	0	0	0	0	0	0	0	0	0
105:	0	0	0	0	0	0	0	0	0
113:	0	0	0	0	0	0	0	0	0
121:	0	0	0	0	0	0	0	0	0
129:	0	0	0	0	0	0	0	0	0
137:	0	0	0	0	0	0	0	0	0
145:	0	0	0	0	0	0	0	0	0
153:	0	0	0	0	0	0	0	0	0
161:	0	0	0	1	1	0	0	0	0
169:	0	0	0	0	0	1	0	0	0
177:	0	0	0	1	0	0	0	0	0
185:	0	0	1	0	0	0	1	1	1
193:	1	1	0	1	0	0	2	0	0
201:	1	0	0	0	1	0	0	0	0
209:	2	1	0	1	2	3	0	0	0
217:	2	2	0	3	2	1	1	2	2
225:	6	2	6	3	3	1	2	3	3
233:	5	4	0	3	5	3	7	6	6
241:	6	6	8	4	2	0	2	2	2
249:	3	1	1	0	0	0	1	0	0
257:	0	0	0	0	0	0	0	0	0
265:	0	0	0	0	0	0	0	0	0
273:	0	0	0	0	1	0	1	0	0
281:	0	1	0	0	1	0	0	0	0
289:	0	0	1	0	0	0	0	0	0
297:	0	0	0	0	0	1	0	0	0
305:	0	0	0	0	0	1	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:	1	0	0	0	0	0	1	0	0
345:	0	0	0	0	0	0	0	0	0
353:	0	0	0	0	0	0	0	0	0
361:	1	0	0	0	0	0	0	0	0

369: 0 0 0 0 0 0 0 0 0

Sample Title: 07

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

801: 0 0 0 0 0 0 0 0 0

Sample Title: 07

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

Apex-Alpha™

10/23/15

Sample Description: CP2211S06-07
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001319
 Batch Identification: 1510064A-UU
 Sample Identification: 08
 Sample Geometry: Shelf 2
 Procedure Description: U iso

Detector Name: Alpha_041
 Chamber Serial Number: 05026930A
 Detector Serial Number: 91087
 Env. Background: System Bkgd 131877
 Reagent Blank: <not performed>

Sample Size: 1.518E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/6/2015 6:05:32 AM
 Acquisition Date/Time: 10/22/2015 12:08:41 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: 0.1859 +/- 0.0104
 Counting Efficiency: 0.1873 +/- 0.0033 on 10/25/2014 3:00:28 PM
 Chem. Recovery Factor: 0.9927 +/- 0.0580

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 5.278	387.83	9.96	0.17	0.00E+000	18.0
U-234	4.733	142.15	16.50	0.85	0.00E+000	5.1
U-235	4.392	15.66	50.15	0.34	0.00E+000	3.0
U-238	4.160	141.79	16.61	2.21	0.00E+000	18.4

T = Tracer Peak used for Effective Efficiency

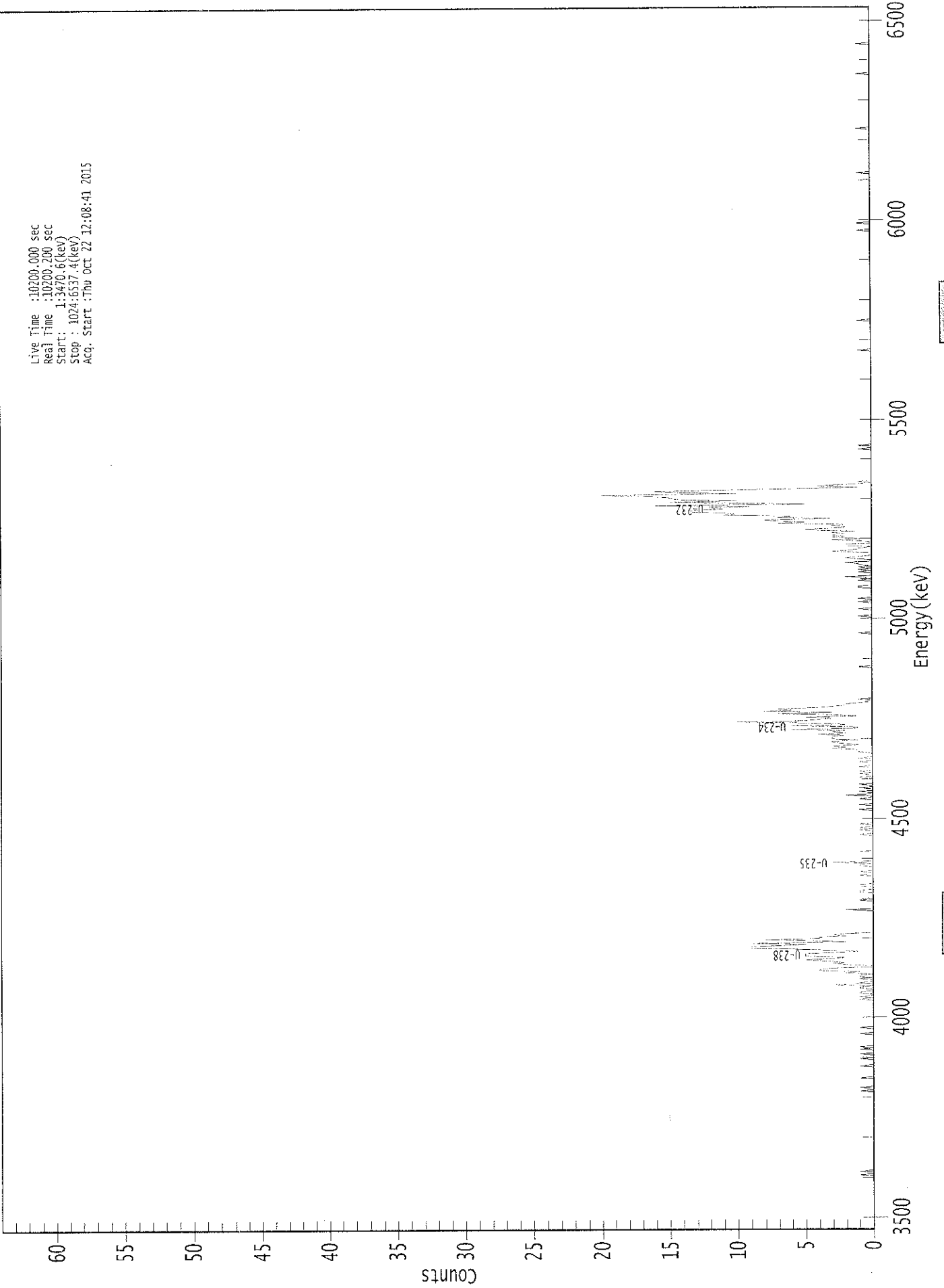
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.996	5302.50*	3.65E+000 +/- 3.99E-001	3.93E-002 +/- 4.29E-003
U-234	0.994	4761.50*	1.34E+000 +/- 2.65E-001	5.63E-002 +/- 6.16E-003
U-235	1.000	4385.50*	1.82E-001 +/- 9.33E-002	5.55E-002 +/- 6.06E-003
U-238	0.996	4184.40*	1.33E+000 +/- 2.64E-001	7.49E-002 +/- 8.19E-003

AL
 10/23/15

0000131976.CNF

Live Time :10200.000 Sec
Real Time :10200.200 Sec
Start : 1:3470.6(keV)
Stop : 1024:5537.4(keV)
Acq. Start :Thu Oct 22 12:08:41 2015



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:	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	1	0	0	0
49:	1	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	1	0	0
121:	0	0	0	0	0	0	1	0	0
129:	0	0	0	0	0	0	0	0	0
137:	1	0	0	0	0	0	1	0	0
145:	0	0	1	0	0	0	1	0	0
153:	1	0	0	0	0	0	0	0	0
161:	0	0	0	1	0	0	0	0	0
169:	1	0	0	0	0	0	0	0	0
177:	0	0	0	0	0	0	0	0	0
185:	0	0	0	0	0	0	0	0	0
193:	1	0	1	0	0	1	1	0	0
201:	0	1	1	0	3	0	1	0	0
209:	0	1	0	1	1	0	2	1	1
217:	4	4	3	0	0	2	3	2	2
225:	4	5	3	2	5	5	5	3	3
233:	1	3	6	9	9	7	5	9	9
241:	2	4	8	4	4	2	3	2	2
249:	0	0	0	0	0	0	0	0	0
257:	0	0	0	0	0	0	0	0	0
265:	0	0	0	2	0	0	0	0	0
273:	0	0	0	1	0	0	0	0	0
281:	0	0	1	1	0	0	0	1	1
289:	1	0	0	0	0	0	0	0	0
297:	1	0	0	1	0	0	0	0	0
305:	1	1	0	3	0	0	0	0	0
313:	0	0	0	0	1	0	0	0	0
321:	0	0	0	0	0	0	0	0	0
329:	0	0	1	0	0	0	1	0	0
337:	1	0	0	1	0	0	0	0	0
345:	0	0	0	0	0	0	0	1	1
353:	0	0	0	1	0	0	0	0	0
361:	1	0	0	2	0	0	1	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	1
385:	0	0	0	1	0	0	0	1
393:	0	0	1	0	0	0	0	1
401:	1	1	3	2	3	1	2	3
409:	3	1	3	3	3	2	4	2
417:	3	2	6	1	1	6	2	3
425:	10	5	4	3	5	1	3	7
433:	3	8	6	7	4	3	2	2
441:	1	0	0	1	0	0	0	0
449:	0	0	0	0	0	0	0	0
457:	0	0	0	0	0	0	0	0
465:	0	0	0	0	0	0	1	0
473:	0	0	0	0	0	0	0	0
481:	0	0	0	0	0	0	0	0
489:	0	0	0	0	0	0	0	0
497:	0	0	1	0	0	0	0	0
505:	0	0	0	0	0	0	0	0
513:	1	0	0	0	0	0	1	0
521:	0	0	0	0	1	0	0	1
529:	0	0	0	0	0	0	0	0
537:	1	1	0	0	0	0	1	0
545:	0	2	0	0	0	1	0	1
553:	0	1	0	1	1	2	0	0
561:	1	2	1	0	0	0	3	2
569:	1	1	0	2	2	0	0	1
577:	3	0	3	2	3	2	3	1
585:	4	5	2	2	3	2	7	5
593:	7	8	3	7	6	11	10	11
601:	14	13	11	12	9	16	5	10
609:	15	10	14	15	15	17	20	10
617:	14	16	11	5	1	4	3	1
625:	0	1	0	0	0	0	0	0
633:	0	0	0	0	0	0	0	0
641:	0	0	0	0	0	0	0	0
649:	0	0	0	0	1	0	0	1
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	1
737:	0	0	0	0	0	0	0	0
745:	0	0	0	0	0	0	0	0
753:	0	0	0	0	0	0	0	0
761:	1	0	0	0	0	0	0	0
769:	0	0	0	0	0	0	0	0
777:	0	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0

801: 0 0 0 0 0 0 0 0

Sample Title: 08

Channel								
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	1	0	0	0	0
841:	0	1	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	1	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	0
921:	1	0	0	0	0	0	0	0
929:	0	0	0	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	1	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	1
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™

KCB
10/22/15

Sample Description: CP2211S11-12
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001319
 Batch Identification: 1510064A-UU
 Sample Identification: 09
 Sample Geometry: Shelf 2
 Procedure Description: U iso

Detector Name: Alpha_042
 Chamber Serial Number: 05026930B
 Detector Serial Number: 84185
 Env. Background: System Bkgd 131878
 Reagent Blank: <not performed>

Sample Size: 1.526E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/6/2015 6:05:32 AM
 Acquisition Date/Time: 10/22/2015 12:08:43 PM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
 Tracer Quantity: 0.652 mL
 Effective Efficiency: 0.1856 +/- 0.0104
 Counting Efficiency: 0.1737 +/- 0.0030 on 10/25/2014 3:04:21 PM
 Chem. Recovery Factor: 1.0681 +/- 0.0629

Peak Match Tolerance: 0.150 MeV

 PEAK AREA REPORT

Nuclide	Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
U-232	T 5.277	381.15	10.05	0.85	0.00E+000	4.3
U-234	4.727	103.83	19.25	0.17	0.00E+000	3.7
U-235	4.368	5.83	82.55	0.17	0.00E+000	3.0
U-238	4.150	123.83	17.63	0.17	0.00E+000	5.5

T = Tracer Peak used for Effective Efficiency

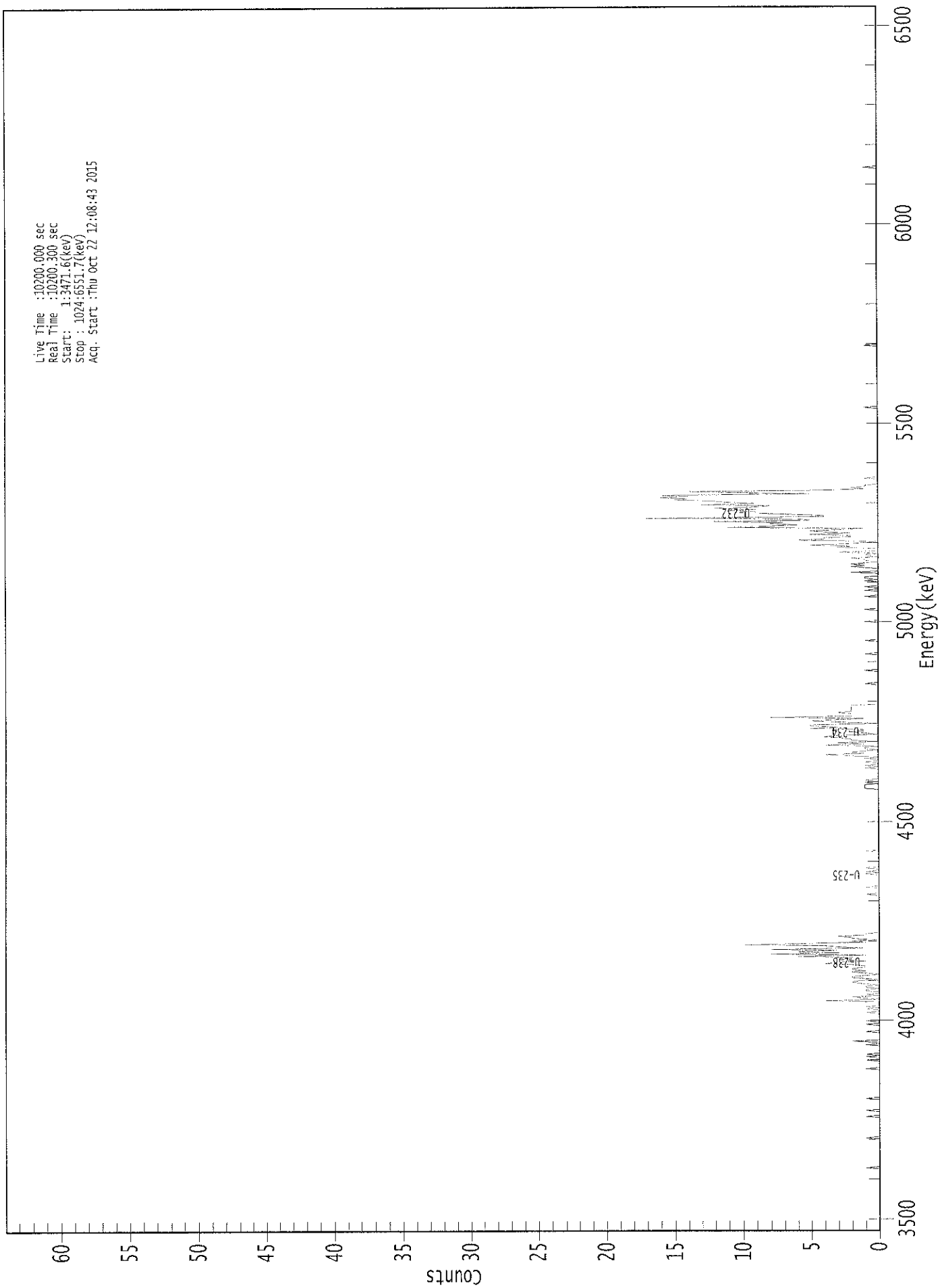
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.995	5302.50*	3.57E+000 +/- 3.94E-001	5.61E-002 +/- 6.19E-003
U-234	0.992	4761.50*	9.73E-001 +/- 2.16E-001	3.91E-002 +/- 4.31E-003
U-235	0.998	4385.50*	6.74E-002 +/- 5.61E-002	4.83E-002 +/- 5.32E-003
U-238	0.992	4184.40*	1.16E+000 +/- 2.40E-001	3.90E-002 +/- 4.29E-003

Ag
10/23/15

0000131970.CNF

Live Time :10200.000 sec
Real Time :10200.300 sec
Start : 1:3471.6(kev)
Stop : 1024:6551.7(kev)
Acq. Start :Thu Oct 22 12:08:43 2015



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: 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	1	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	1	0	0	0
81:	0	0	0	0	0	0	0	0	0
89:	0	0	0	0	0	0	0	0	1
97:	0	0	0	0	1	0	0	0	0
105:	0	0	0	0	0	0	1	0	0
113:	0	0	0	0	0	0	0	0	0
121:	0	0	0	0	0	0	0	0	0
129:	0	0	0	0	0	0	0	0	1
137:	0	0	0	0	0	0	1	0	0
145:	0	1	0	1	0	0	0	0	0
153:	0	0	0	1	0	0	2	0	0
161:	0	0	0	0	0	0	1	0	0
169:	0	0	0	0	1	0	0	0	1
177:	0	0	0	0	0	0	1	0	0
185:	0	1	0	1	0	0	0	0	0
193:	4	0	1	2	0	1	0	0	0
201:	1	1	0	1	1	0	1	2	0
209:	2	1	0	2	2	1	0	1	0
217:	2	1	2	2	1	1	2	4	0
225:	3	1	3	2	2	6	1	8	0
233:	3	6	3	8	1	3	4	10	0
241:	5	1	2	0	2	2	3	1	0
249:	1	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	1	0	0	0	0	0	1	0
289:	0	0	0	0	0	0	0	0	0
297:	0	0	1	0	1	0	0	1	0
305:	0	0	0	0	0	0	0	0	0
313:	0	0	0	0	0	1	0	0	0
321:	0	0	0	0	0	0	0	0	0
329:	0	0	0	0	0	0	0	0	0
337:	0	0	0	0	0	0	0	0	0
345:	0	0	0	0	0	0	0	0	0
353:	0	0	0	0	0	0	0	0	0
361:	0	0	0	0	0	0	0	0	0

369: 0 1 1 1 1 0 1 0

Sample Title: 09

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

801: 0 0 0 0 0 0 0 0

Sample Title: 09

Channel								
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	1
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	0	0
937:	0	0	0	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
10/22/15

Apex-Alpha™

Sample Description: CP2211S13-14
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001319
 Batch Identification: 1510064A-UU
 Sample Identification: 10
 Sample Geometry: Shelf 2
 Procedure Description: U iso

Detector Name: Alpha_043
 Chamber Serial Number: 04026481A
 Detector Serial Number: 91088
 Env. Background: System Bkgd 131879
 Reagent Blank: <not performed>

Sample Size: 1.501E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/6/2015 6:05:32 AM
 Acquisition Date/Time: 10/22/2015 12:08:44 PM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
 Tracer Quantity: 0.652 mL
 Effective Efficiency: 0.2157 +/- 0.0114
 Counting Efficiency: 0.1998 +/- 0.0035 on 10/25/2014 3:08:45 PM
 Chem. Recovery Factor: 1.0795 +/- 0.0600

Peak Match Tolerance: 0.150 MeV

 PEAK AREA REPORT

Nuclide	Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
U-232	T 5.279	442.49	9.32	0.51	0.00E+000	26.3
U-234	4.736	94.15	20.31	0.85	0.00E+000	12.0
U-235	4.426	8.83	66.70	0.17	0.00E+000	3.0
U-238	4.156	98.00	19.90	0.00	0.00E+000	13.5

T = Tracer Peak used for Effective Efficiency

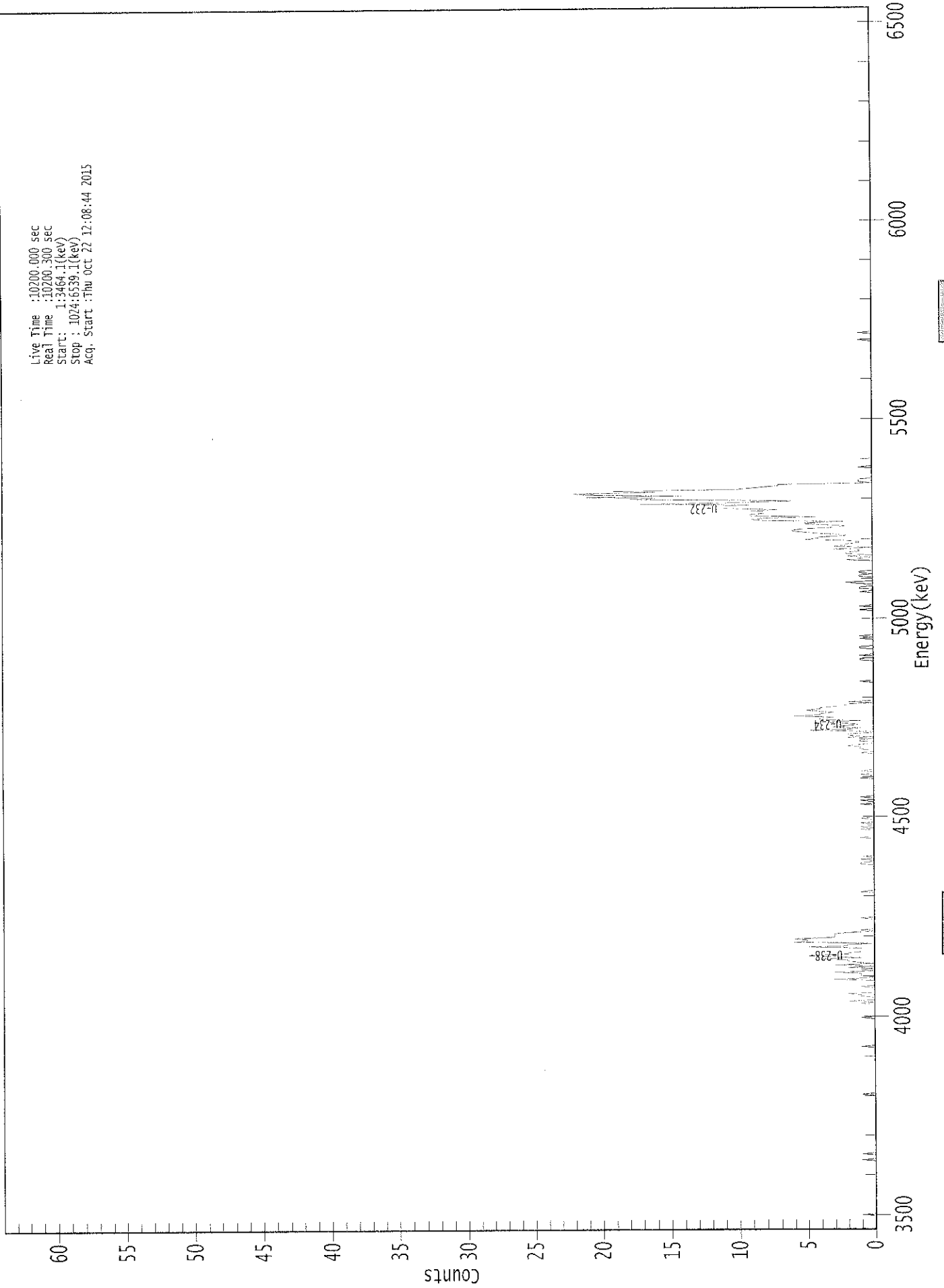
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.996	5302.50*	3.63E+000 +/- 3.76E-001	4.30E-002 +/- 4.46E-003
U-234	0.996	4761.50*	7.72E-001 +/- 1.76E-001	4.91E-002 +/- 5.08E-003
U-235	0.988	4385.50*	8.93E-002 +/- 6.03E-002	4.22E-002 +/- 4.37E-003
U-238	0.994	4184.40*	8.00E-001 +/- 1.79E-001	4.89E-002 +/- 5.07E-003

AG
10/23/15

0000131971.CNF

Live Time :10200.000 sec
Real Time :10260.300 sec
Start: 1:3464.1(keV)
Stop : 1024:6539.1(keV)
Acq. Start :Thu Oct 22 12:08:44 2015



ROI Type: 1

ROI Type: 3

0000131971

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

Sample Title: 10

Elapsed Live time: 10200
 Elapsed Real Time: 10200

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	1	0	0	0
17:	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0
57:	0	0	1	0	0	0	0	1
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	1	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	1	0	0	0	0	0	0
161:	0	0	0	0	0	0	0	0
169:	0	0	0	0	0	0	0	0
177:	0	1	0	0	0	0	0	0
185:	0	0	0	0	0	1	0	2
193:	0	0	0	1	1	2	0	0
201:	0	0	0	1	0	0	0	0
209:	0	3	1	0	1	1	1	3
217:	0	1	0	2	0	3	0	1
225:	2	2	4	1	4	5	2	2
233:	1	1	1	1	5	2	2	0
241:	6	5	5	6	3	3	3	3
249:	2	0	1	0	0	0	0	0
257:	0	0	0	0	1	0	0	0
265:	0	0	0	0	0	0	0	0
273:	0	0	0	0	0	0	0	0
281:	0	0	1	0	0	0	0	0
289:	0	0	0	0	0	0	0	0
297:	0	0	0	0	0	0	0	0
305:	0	1	1	0	0	1	0	0
313:	0	0	0	0	0	0	0	0
321:	0	0	0	0	0	0	0	1
329:	0	0	0	0	0	0	1	0
337:	1	0	0	1	0	0	0	1
345:	0	0	0	0	0	0	0	0
353:	0	0	0	1	0	0	1	0
361:	0	1	0	0	0	0	0	0

369: 0 0 0 0 0 0 0 0 0

Sample Title: 10

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

801: 0 0 0 0 0 0 0 0

Sample Title: 10

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

Apex-Alpha™

*KB
10/23/15*

Sample Description: CP2211S16-17
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001319
 Batch Identification: 1510064A-UU
 Sample Identification: 11
 Sample Geometry: Shelf 2
 Procedure Description: U iso

Detector Name: Alpha_044
 Chamber Serial Number: 04026481B
 Detector Serial Number: 84168
 Env. Background: System Bkgd 131880
 Reagent Blank: <not performed>

Sample Size: 1.517E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/6/2015 6:05:32 AM
 Acquisition Date/Time: 10/22/2015 12:08:46 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: 0.1698 +/- 0.0099
 Counting Efficiency: 0.1837 +/- 0.0032 on 10/25/2014 3:13:11 PM
 Chem. Recovery Factor: 0.9245 +/- 0.0563

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 5.288	349.00	10.51	0.00	0.00E+000	10.5
U-234	4.740	83.83	21.43	0.17	0.00E+000	3.3
U-235	4.393	5.00	96.02	0.00	0.00E+000	3.0
U-238	4.155	102.66	19.38	0.34	0.00E+000	8.2

T = Tracer Peak used for Effective Efficiency

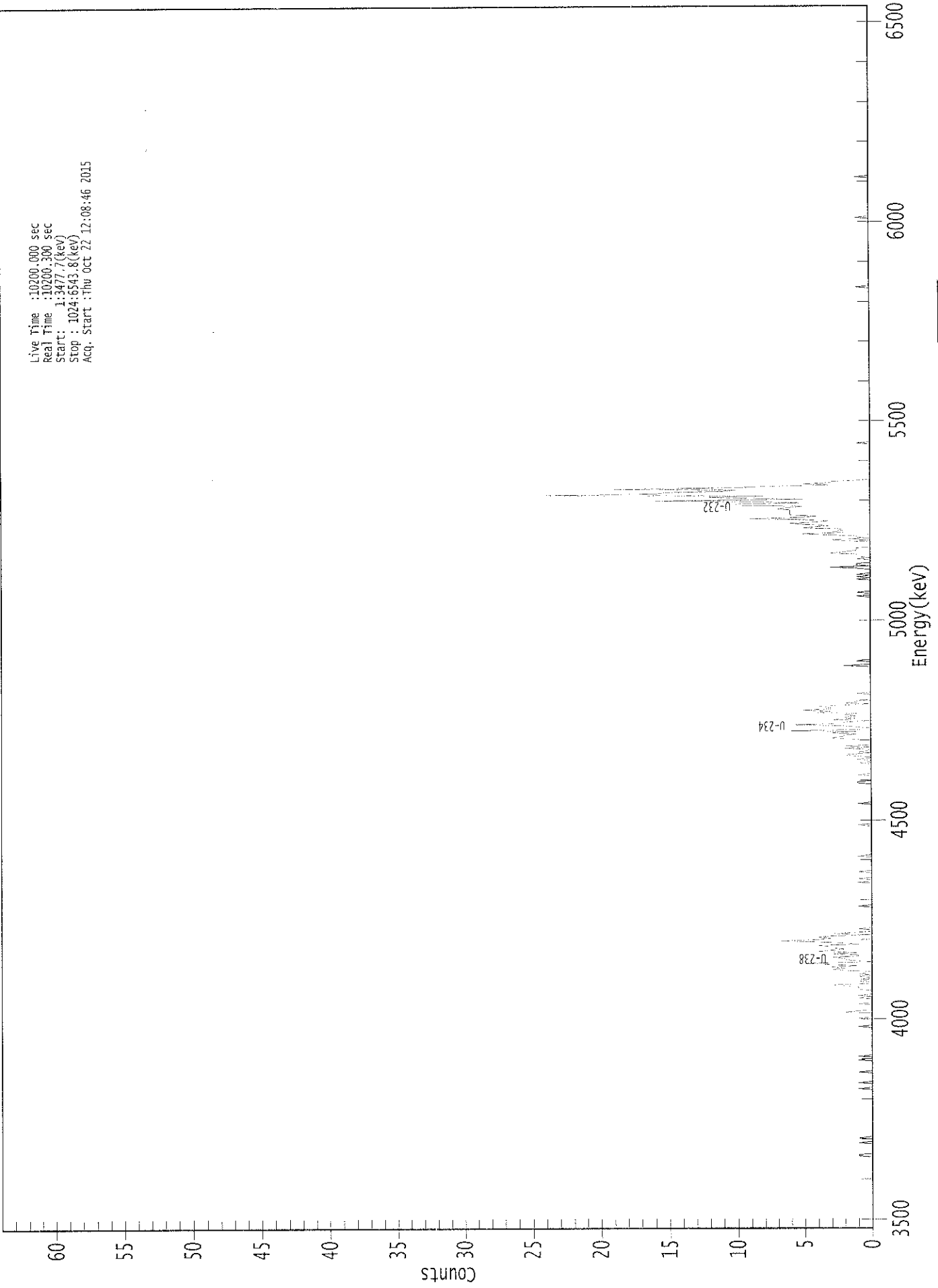
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.998	5302.50*	3.60E+000 +/- 4.12E-001	6.18E-002 +/- 7.07E-003
U-234	0.997	4761.50*	8.64E-001 +/- 2.10E-001	4.30E-002 +/- 4.92E-003
U-235	1.000	4385.50*	6.36E-002 +/- 6.15E-002	7.62E-002 +/- 8.72E-003
U-238	0.994	4184.40*	1.05E+000 +/- 2.37E-001	4.91E-002 +/- 5.61E-003

*AG
10/23/15*

0000131972.CNF

Live Time :10200.000 sec
Real Time :10200.300 sec
Start : 1:3477.7(Rev)
Stop : 1024:6543.8(Rev)
Acq. Start :Thu Oct 22 12:08:46 2015



ROI Type: 1

ROI Type: 3

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

Sample Title: 11

Elapsed Live time: 10200
 Elapsed Real Time: 10200

Channel	1	2	3	4	5	6	7	8	9
1:	0	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0	0
33:	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	1	1	0	0	0
65:	0	0	0	0	0	0	0	0	1
73:	0	0	0	1	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	1	0	0	0	0
121:	0	1	0	0	0	0	0	0	0
129:	0	0	1	0	0	0	0	0	0
137:	0	0	0	0	1	0	0	0	1
145:	0	0	0	0	0	0	0	0	0
153:	0	0	0	0	0	0	0	0	0
161:	0	0	0	0	0	0	0	0	0
169:	1	0	0	0	0	0	0	0	1
177:	0	0	0	0	2	1	0	0	0
185:	0	0	0	1	0	0	0	0	0
193:	1	0	1	0	0	0	0	0	1
201:	1	1	2	3	0	0	1	0	0
209:	0	0	1	0	1	0	0	0	2
217:	3	2	3	1	3	5	0	0	1
225:	2	2	3	1	1	3	1	0	4
233:	3	2	3	3	4	1	2	0	4
241:	7	4	3	4	3	0	3	0	1
249:	0	0	1	0	0	0	0	0	0
257:	0	0	0	0	0	0	0	0	0
265:	0	0	0	0	0	1	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	1	0	0	1	0	0	0	0
297:	0	0	1	0	0	0	0	0	0
305:	0	0	0	0	0	0	0	0	1
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	1	0	0	0	0	0
361:	0	0	0	0	0	0	0	0	0

369: 0 0 0 0 1 1 0 0

Sample Title: 11

Channel	1	2	3	4	5	6	7	8
377:	0	0	0	1	0	0	0	0
385:	0	0	0	0	0	1	0	0
393:	1	0	0	2	2	0	1	0
401:	0	2	0	2	0	0	0	0
409:	0	2	3	2	2	1	3	1
417:	6	0	0	1	2	6	2	2
425:	0	3	1	2	1	2	1	4
433:	3	5	3	3	4	2	0	2
441:	1	1	0	0	0	0	0	1
449:	0	0	0	0	0	0	0	0
457:	0	0	0	0	0	0	0	0
465:	0	0	0	0	0	0	2	0
473:	0	0	1	0	0	0	0	0
481:	0	0	0	0	0	0	0	0
489:	0	0	0	0	0	0	0	0
497:	0	0	0	0	0	0	0	0
505:	0	0	0	0	0	0	0	0
513:	0	0	0	0	0	0	0	0
521:	0	0	0	0	0	0	0	0
529:	1	0	0	1	0	0	0	0
537:	0	0	0	0	0	0	1	0
545:	1	0	1	0	0	0	0	1
553:	3	0	1	1	0	0	0	1
561:	0	1	1	1	3	2	1	1
569:	1	0	0	0	0	0	2	3
577:	0	1	1	3	5	2	3	2
585:	2	5	4	3	5	6	4	3
593:	5	9	5	4	6	6	6	6
601:	6	7	6	5	10	10	5	9
609:	16	5	9	12	8	24	16	15
617:	11	10	19	10	8	3	5	3
625:	3	1	0	0	0	0	0	0
633:	0	0	0	0	0	0	0	0
641:	0	0	0	0	0	0	0	0
649:	0	0	0	0	0	0	0	0
657:	1	0	0	0	0	0	0	0
665:	0	0	0	0	0	0	0	0
673:	0	0	0	0	0	0	0	0
681:	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0
713:	0	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	1	0	0	0	0
793:	0	0	0	0	0	0	0	0

801: 0 0 0 0 0 0 0 0 0

Sample Title: 11

Channel								
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	1	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	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

RP
10/22/15

Apex-Alpha™

Sample Description: CP2211S18-19
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001319
 Batch Identification: 1510064A-UU
 Sample Identification: 12
 Sample Geometry: Shelf 2
 Procedure Description: U iso

Detector Name: Alpha_045
 Chamber Serial Number: 04026482A
 Detector Serial Number: 91131
 Env. Background: System Bkgd 131881
 Reagent Blank: <not performed>

Sample Size: 1.512E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/6/2015 6:05:32 AM
 Acquisition Date/Time: 10/22/2015 12:08:48 PM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
 Tracer Quantity: 0.652 mL
 Effective Efficiency: 0.1816 +/- 0.0103
 Counting Efficiency: 0.1760 +/- 0.0031 on 10/25/2014 3:16:42 PM
 Chem. Recovery Factor: 1.0316 +/- 0.0612

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 5.295	372.83	10.15	0.17	0.00E+000	7.8
U-234	4.749	120.32	17.93	0.68	0.00E+000	6.4
U-235	4.414	4.83	91.00	0.17	0.00E+000	3.0
U-238	4.169	107.30	19.10	1.70	0.00E+000	4.5

T = Tracer Peak used for Effective Efficiency

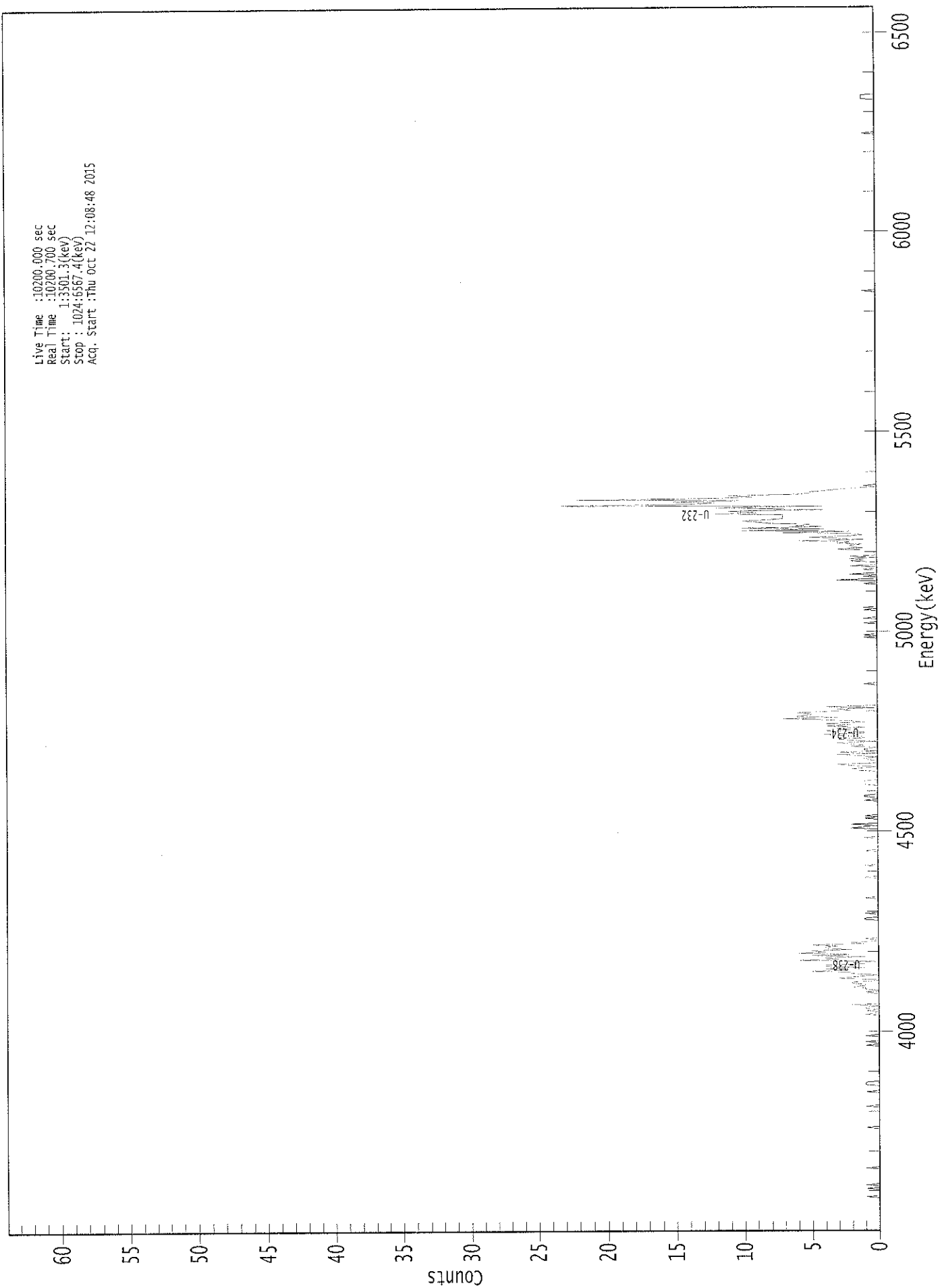
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	1.000	5302.50*	3.61E+000 +/- 4.01E-001	4.04E-002 +/- 4.49E-003
U-234	0.999	4761.50*	1.16E+000 +/- 2.45E-001	5.45E-002 +/- 6.06E-003
U-235	0.994	4385.50*	5.76E-002 +/- 5.28E-002	4.98E-002 +/- 5.53E-003
U-238	0.998	4184.40*	1.03E+000 +/- 2.28E-001	7.07E-002 +/- 7.86E-003

AG
10/23/15

0000131973.CNF

Live Time :10200.000 sec
Real Time :10200.700 sec
Start: 1:3501.3(kev)
Stop : 1024:5367.4(kev)
Acq. Start :Thu Oct 22 12:08:48 2015



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: 10201

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	1	0	0	0
33:	0	0	0	1	0	0	0	1	0
41:	0	0	0	0	0	0	0	0	0
49:	0	0	0	0	1	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	1	0
89:	0	0	0	0	0	0	0	0	0
97:	0	0	0	0	0	0	0	0	0
105:	1	0	0	0	0	0	0	0	0
113:	0	0	0	0	0	1	0	0	0
121:	0	0	1	1	1	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	1	0	0	0	1	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	0	0	0	1	0	0
185:	1	0	1	1	0	2	0	0	0
193:	0	0	0	0	0	0	0	0	1
201:	1	0	1	1	2	1	1	1	2
209:	2	0	0	3	2	1	0	0	2
217:	2	5	2	4	1	4	4	4	1
225:	2	0	6	3	4	1	5	2	2
233:	6	4	5	2	4	4	3	5	5
241:	1	2	0	0	1	0	0	0	0
249:	0	0	0	0	0	0	0	0	0
257:	0	0	0	0	1	1	0	0	0
265:	0	1	0	0	0	0	0	0	0
273:	0	0	0	0	0	0	1	0	0
281:	0	0	0	0	0	0	0	0	0
289:	0	0	0	0	0	0	0	0	1
297:	0	0	0	0	0	0	0	0	0
305:	0	1	0	0	0	0	0	0	0
313:	0	0	0	0	0	1	0	0	0
321:	0	0	0	0	0	0	0	0	0
329:	1	0	0	0	0	0	0	0	0
337:	2	1	0	2	0	0	0	0	0
345:	1	0	1	0	0	0	0	0	0
353:	0	0	0	0	0	0	0	0	1
361:	0	0	1	1	0	0	0	0	0

369: 0 0 0 0 1 1 1 1

Sample Title: 12

Channel	1	2	3	4	5	6	7	8	9
377:	0	0	0	0	0	0	0	0	0
385:	2	2	1	0	2	3	0	0	0
393:	0	1	1	0	1	3	0	3	3
401:	0	1	1	0	2	1	2	3	3
409:	0	2	3	1	1	3	4	1	1
417:	1	4	2	3	1	4	2	4	4
425:	1	2	4	7	3	6	5	5	5
433:	6	4	2	3	0	4	0	0	0
441:	0	0	0	0	0	0	0	0	0
449:	0	0	0	0	0	0	0	0	0
457:	1	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:	0	0	0	0	0	0	0	1	1
497:	0	1	0	0	0	0	0	0	0
505:	0	0	0	1	0	0	0	1	1
513:	0	0	0	0	0	0	1	0	0
521:	1	0	0	0	0	0	0	0	0
529:	0	0	0	0	0	0	0	0	0
537:	0	0	0	0	1	0	0	3	3
545:	0	0	1	0	2	0	0	0	0
553:	1	0	0	2	0	0	0	2	2
561:	1	2	0	2	0	0	0	1	1
569:	1	3	1	2	2	1	3	2	2
577:	6	1	3	5	2	1	2	7	7
585:	2	10	4	10	4	6	5	8	8
593:	9	10	8	7	7	7	7	12	12
601:	9	11	4	9	12	4	24	14	14
609:	12	15	10	22	12	9	11	6	6
617:	5	5	4	3	2	0	1	0	0
625:	0	0	0	0	0	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:	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:	1	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: 12

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



Apex-Alpha™

KB
10/22/15

Sample Description: CP2211S21-22
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001319
 Batch Identification: 1510064A-UU
 Sample Identification: 13
 Sample Geometry: Shelf 2
 Procedure Description: U iso

Detector Name: Alpha_046
 Chamber Serial Number: 04026482B
 Detector Serial Number: 58762
 Env. Background: System Bkgd 131882
 Reagent Blank: <not performed>

Sample Size: 1.511E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/6/2015 6:05:32 AM
 Acquisition Date/Time: 10/22/2015 12:08:50 PM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
 Tracer Quantity: 0.652 mL
 Effective Efficiency: 0.1791 +/- 0.0102
 Counting Efficiency: 0.1776 +/- 0.0031 on 10/25/2014 3:20:08 PM
 Chem. Recovery Factor: 1.0083 +/- 0.0602

Peak Match Tolerance: 0.150 MeV

	Energy	Net	Pk Area	Ambient	Reagent	FWHM
Nuclide	(MeV)	Pk Area	Error %	Backgnd	Backgnd	(keV)

U-232	T 5.274	367.32	10.24	0.68	0.00E+000	13.2
U-234	4.725	115.32	18.31	0.68	0.00E+000	4.3
U-235	4.416	6.98	80.28	1.02	0.00E+000	3.0
U-238	4.144	85.83	21.18	0.17	0.00E+000	5.3

T = Tracer Peak used for Effective Efficiency

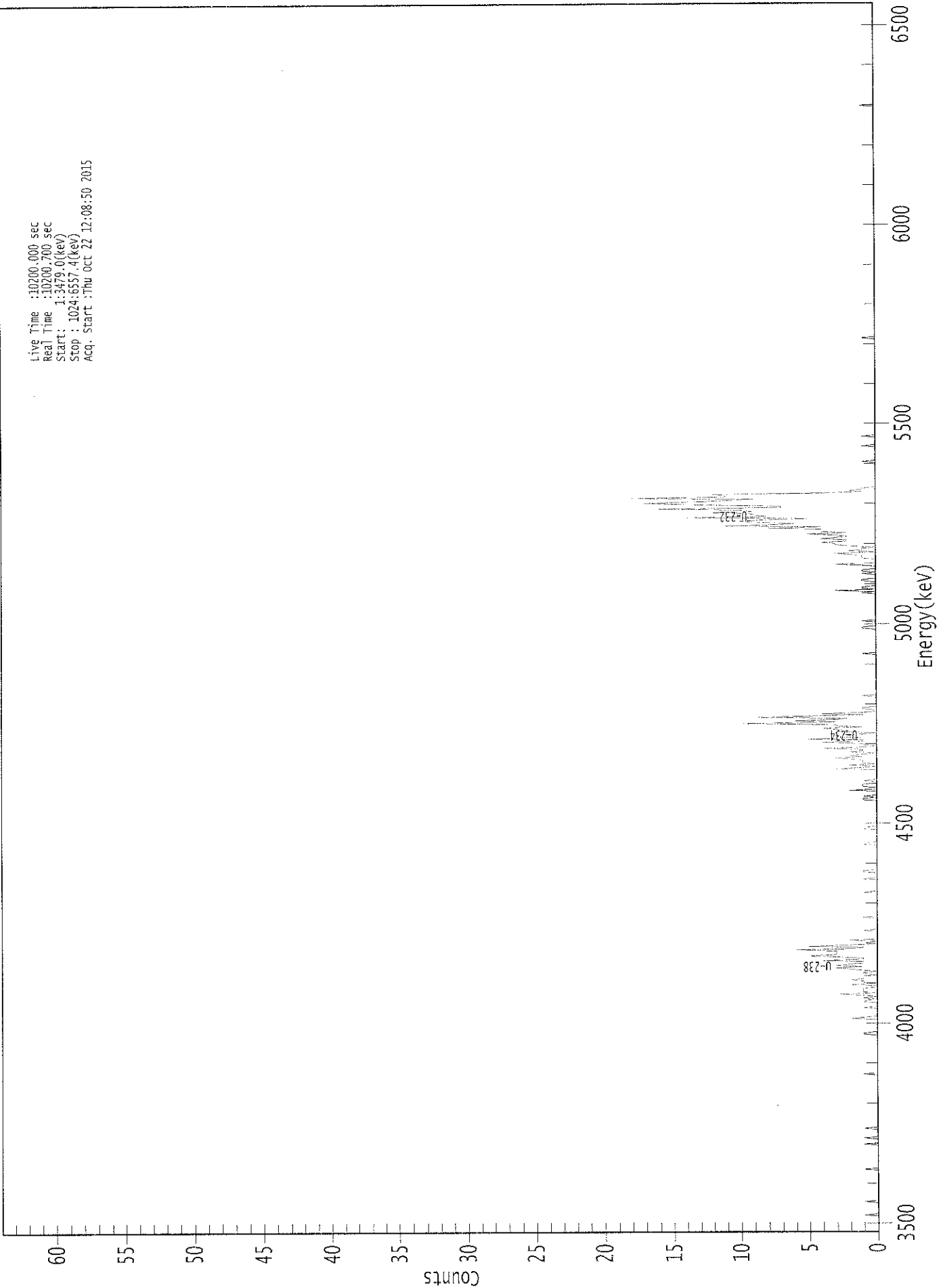
	Id	Energy	Activity	MDA		
Nuclide	Conf.	(keV)	(pCi/gram)	(pCi/gram)		

U-232	0.994	5302.50*	3.61E+000 +/- 4.03E-001	5.54E-002 +/-	6.20E-003	
U-234	0.991	4761.50*	1.13E+000 +/- 2.43E-001	5.54E-002 +/-	6.19E-003	
U-235	0.994	4385.50*	8.45E-002 +/- 6.85E-002	7.63E-002 +/-	8.53E-003	
U-238	0.988	4184.40*	8.39E-001 +/- 2.01E-001	4.08E-002 +/-	4.56E-003	

AG
10/23/15

0000131974.CNF

Live Time :10200.000 sec
Real Time :10200.700 sec
Start : 1:3479.0(keV)
Stop : 1024:6557.4(keV)
Acq. Start :Thu Oct 22 12:08:50 2015



ROI Type: 1

ROI Type: 3

04100 :

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

Sample Title: 13

Elapsed Live time: 10200
 Elapsed Real Time: 10201

Channel	1	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	1	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:	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	1	0
81:	0	0	0	0	0	0	0	1	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	1	0	0	0	0	0
137:	0	0	0	0	0	0	0	0	0
145:	0	0	0	0	0	0	0	0	0
153:	0	0	0	0	0	0	0	0	0
161:	0	0	0	0	1	1	0	0	0
169:	0	0	0	0	0	0	0	0	0
177:	0	2	1	0	0	0	0	0	0
185:	0	0	1	0	0	0	0	0	1
193:	1	0	1	0	1	3	0	0	1
201:	1	1	1	0	0	2	0	0	1
209:	1	2	1	1	1	0	1	1	1
217:	0	1	2	3	1	3	2	1	1
225:	1	4	1	1	3	5	3	3	3
233:	3	3	6	2	1	5	2	0	0
241:	0	0	2	0	0	0	0	0	0
249:	0	0	1	0	0	0	0	0	0
257:	0	0	0	0	0	1	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	1	0	0	0	0	0	0
289:	0	0	0	0	0	1	0	0	0
297:	0	0	0	1	1	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	1	1	0	0	0	0	0
329:	0	0	0	0	0	0	0	0	1
337:	1	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	1
361:	1	0	1	0	0	0	0	0	2

369: 0 0 1 1 1 0 0 1

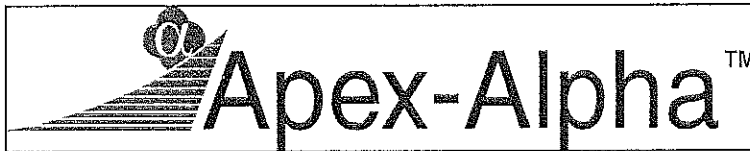
Sample Title: 13

Channel	1	2	3	4	5	6	7	8	9
377:	0	0	0	0	0	0	0	0	0
385:	0	3	1	0	2	0	1	1	1
393:	1	2	3	1	2	1	0	2	2
401:	1	1	4	1	0	1	1	4	4
409:	1	1	5	1	3	3	1	0	0
417:	3	2	3	4	1	3	3	10	10
425:	3	6	3	2	9	5	1	4	4
433:	1	0	0	1	1	0	0	0	0
441:	0	0	0	0	0	0	1	0	0
449:	0	0	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	1	0	0	0	0	0	0	0
489:	0	0	0	0	0	0	0	0	0
497:	0	0	0	0	0	0	1	1	1
505:	0	0	0	0	1	0	0	0	0
513:	0	0	0	0	0	0	0	0	0
521:	0	0	0	0	0	0	0	0	0
529:	0	0	0	1	0	3	0	1	1
537:	1	0	0	0	0	1	1	0	0
545:	0	0	0	1	0	1	1	0	0
553:	0	0	1	3	0	0	0	0	0
561:	1	1	1	2	3	0	2	1	1
569:	1	0	2	3	3	4	2	2	2
577:	4	3	2	3	5	2	4	4	4
585:	4	8	4	11	7	6	9	10	10
593:	8	5	14	8	9	9	12	9	9
601:	10	16	7	7	11	15	17	13	13
609:	11	9	18	11	11	12	4	1	1
617:	2	1	1	0	0	0	0	0	0
625:	0	0	0	0	0	0	0	0	0
633:	0	0	0	0	0	0	0	0	0
641:	1	0	0	0	0	0	0	0	0
649:	0	0	0	0	0	1	0	0	0
657:	0	0	0	0	0	1	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	1	1
745:	0	0	0	0	0	0	0	0	0
753:	0	0	0	0	0	0	0	0	0
761:	0	0	0	0	0	0	0	0	0
769:	0	0	0	0	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: 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	1	0	0	0	0	0	0
945:	0	0	0	0	0	0	0	0
953:	0	0	0	0	0	0	0	0
961:	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	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 : 10/22/2015
Time : 5:43:31 AM

CHAMBER	DEVICE	PARAMETER	FLAG	DATE
Alpha 001	21f	ALL	Not Done	
Alpha 002	21f	ALL	Not Done	
Alpha 003	21f	ALL	Passed	10/21/2015 5:31:56 AM
Alpha 004	21f	ALL	Passed	10/22/2015 5:28:32 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	10/22/2015 5:28:33 AM
Alpha 011	21f	ALL	Passed	10/22/2015 5:28:34 AM
Alpha 012	21f	ALL	Passed	10/22/2015 5:28:35 AM
Alpha 013	21f	ALL	Not Done	
Alpha 014	21f	ALL	Passed	10/22/2015 5:28:35 AM
Alpha 015	21f	ALL	Passed	10/22/2015 5:28:36 AM
Alpha 016	21f	ALL	Not Done	
Alpha 033	Alpha Analyst100DC	ALL	Passed	10/22/2015 5:28:38 AM
Alpha 034	Alpha Analyst100DC	ALL	Passed	10/22/2015 5:28:39 AM
Alpha 035	Alpha Analyst100DC	ALL	Passed	10/22/2015 5:28:40 AM
Alpha 036	Alpha Analyst100DC	ALL	Passed	10/22/2015 5:28:42 AM
Alpha 037	Alpha Analyst100DC	ALL	Passed	10/22/2015 5:28:43 AM
Alpha 038	Alpha Analyst100DC	Peak Energy	Action	10/22/2015 5:28:45 AM
Alpha 039	Alpha Analyst100DC	ALL	Passed	10/22/2015 5:28:46 AM
Alpha 040	Alpha Analyst100DC	ALL	Passed	10/22/2015 5:28:48 AM
Alpha 041	Alpha Analyst100DC	ALL	Passed	10/22/2015 5:28:49 AM
Alpha 042	Alpha Analyst100DC	ALL	Passed	10/22/2015 5:28:51 AM
Alpha 043	Alpha Analyst100DC	ALL	Passed	10/22/2015 5:28:52 AM
Alpha 044	Alpha Analyst100DC	ALL	Passed	10/22/2015 5:28:54 AM
Alpha 045	Alpha Analyst100DC	ALL	Passed	10/22/2015 5:28:56 AM
Alpha 046	Alpha Analyst100DC	ALL	Passed	10/22/2015 5:28:58 AM
Alpha 047	Alpha Analyst100DC	ALL	Passed	10/22/2015 5:28:59 AM
Alpha 048	Alpha Analyst100DC	ALL	Passed	10/22/2015 5:29:01 AM
Alpha 049	Alpha Analyst100DC	ALL	Passed	10/22/2015 5:29:03 AM
Alpha 050	Alpha Analyst100DC	ALL	Passed	10/22/2015 5:29:05 AM
Alpha 051	Alpha Analyst100DC	ALL	Passed	10/22/2015 5:29:08 AM
Alpha 052	Alpha Analyst100DC	ALL	Passed	10/22/2015 5:29:10 AM
Alpha 053	Alpha Analyst100DC	ALL	Passed	10/22/2015 5:29:12 AM
Alpha 054	Alpha Analyst100DC	ALL	Passed	10/22/2015 5:29:15 AM
Alpha 055	Alpha Analyst100DC	ALL	Passed	10/22/2015 5:29:17 AM
Alpha 056	Alpha Analyst100DC	ALL	Passed	10/22/2015 5:29:20 AM
Alpha 057	Alpha Analyst100DC	ALL	Passed	10/22/2015 5:29:23 AM
Alpha 058	Alpha Analyst100DC	ALL	Passed	10/22/2015 5:29:25 AM

***** 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	15-10064
Analysis Code	ThISO
Run	1
Date Received	10/12/2015
Lab Deadline	11/3/2015
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		10/12/15 00:00	1.0000E+00
02	MBL	BLANK		10/12/15 00:00	1.5000E+00
03	DUP	CP5005S14-15	36	10/06/15 09:50	1.5063E+00
04	DO	CP5005S14-15	36	10/06/15 09:50	1.5112E+00
05	TRG	CP5005S16-17 5	35	10/06/15 10:00	1.5548E+00
06	TRG	CP2211S01-02	32	10/06/15 10:20	1.5258E+00
07	TRG	CP2211S04-05	34	10/06/15 10:40	1.5181E+00
08	TRG	CP2211S06-07	36	10/06/15 10:50	1.5265E+00
09	TRG	CP2211S11-12	35	10/06/15 11:10	1.5282E+00
10	TRG	CP2211S13-14	34	10/06/15 11:20	1.5071E+00
11	TRG	CP2211S16-17	38	10/06/15 11:30	1.5077E+00
12	TRG	CP2211S18-19	34	10/06/15 11:40	1.5066E+00
13	TRG	CP2211S21-22	37	10/06/15 11:50	1.5007E+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.

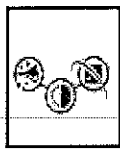
Preliminary Data Report & Analytical Calculations
Work Order: 15-10064-THISO-1

Lab Fraction	Nuclide	Sample Desc	Sample Date	Sample Aliquot	Radiometric % Rec	Grav % Rec	Mean % Rec	SAF	Sep 10 Date/Time	Sep 11 Date/Time
01	TH-228	LCS	10/12/15 00:00	1.00E+00	94.12	0.00	0.00			
02	TH-228	MBL	10/12/15 00:00	1.50E+00	91.37	0.00	0.00			
03	TH-228	DUP	10/06/15 09:50	1.51E+00	57.10	0.00	0.00			
04	TH-228	DO	10/06/15 09:50	1.51E+00	93.45	0.00	0.00			
05	TH-228	TRG	10/06/15 10:00	1.55E+00	102.86	0.00	0.00			
06	TH-228	TRG	10/06/15 10:20	1.53E+00	87.71	0.00	0.00			
07	TH-228	TRG	10/06/15 10:40	1.52E+00	109.63	0.00	0.00			
08	TH-228	TRG	10/06/15 10:50	1.53E+00	115.54	0.00	0.00			
09	TH-228	TRG	10/06/15 11:10	1.53E+00	115.50	0.00	0.00			
10	TH-228	TRG	10/06/15 11:20	1.51E+00	97.30	0.00	0.00			
11	TH-228	TRG	10/06/15 11:30	1.51E+00	90.25	0.00	0.00			
12	TH-228	TRG	10/06/15 11:40	1.51E+00	100.09	0.00	0.00			
13	TH-228	TRG	10/06/15 11:50	1.50E+00	123.99	0.00	0.00			

		Run
Analysis Code		THISO
Eberline Services Work Order		15-10064
Client		Auxier & Associates, Inc.

Lab Fraction	Nuclide	Sample Desc	Counting Date/Time	Half-life (days)	Detect	Carrier	Count Time	Counts	Big CPM	Eff
01	TH-228	LCS	10/21/15 08:50		A_Spec	Alpha_047	170	3.10 E+02	1.00 E-03	16.5
02	TH-228	MBL	10/21/15 08:50		A_Spec	Alpha_048	170	4.70 E-01	9.00 E-03	17
03	TH-228	DUP	10/21/15 08:50		A_Spec	Alpha_049	170	7.90 E+01	6.00 E-03	15.3
04	TH-228	DO	10/21/15 08:50		A_Spec	Alpha_050	170	1.20 E+02	6.00 E-03	14.3
05	TH-228	TRG	10/21/15 08:50		A_Spec	Alpha_051	170	1.49 E+02	3.64 E-02	15.2
06	TH-228	TRG	10/21/15 08:50		A_Spec	Alpha_052	170	7.17 E+01	1.36 E-02	16.1
07	TH-228	TRG	10/21/15 08:50		A_Spec	Alpha_053	170	1.20 E+02	8.00 E-03	14.6
08	TH-228	TRG	10/21/15 08:50		A_Spec	Alpha_054	170	1.15 E+02	5.00 E-03	14.5
09	TH-228	TRG	10/21/15 08:50		A_Spec	Alpha_055	170	1.03 E+02	1.00 E-02	15.6
10	TH-228	TRG	10/21/15 08:50		A_Spec	Alpha_056	170	1.36 E+02	8.00 E-03	16
11	TH-228	TRG	10/21/15 11:47		A_Spec	Alpha_033	170	1.23 E+02	7.00 E-03	18
12	TH-228	TRG	10/21/15 11:47		A_Spec	Alpha_034	170	1.38 E+02	2.00 E-03	17.9
13	TH-228	TRG	10/21/15 11:47		A_Spec	Alpha_035	170	1.34 E+02	5.00 E-03	16.5

		1
Run	Analysis Code	THISO
Eberline Services Work Order		15-10064
Client		Auxier & Associates, Inc.



Run

Analysis Code

Eberline Services Work Order

Client

1

THISO

15-10064

Auxier & Associates, Inc.

Lab Fraction	Nuclide	Sample Desc	Client Identification	Activity Units	Results	Error Estimate	MDA	LCS Known	LCS %R	LCS Flag	RPD Flag	MDA Flag	Blank Flag
01	TH-230	LCS	LCS	pCi/g	6.34E+00	1.07E+00	7.13E-02	5.30E+00	119.54	OK		OK	
02	TH-230	MBL	BLANK	pCi/g	6.42E-02	6.11E-02	7.81E-02					OK	OK
03	TH-230	DUP	CP5005S14-15	pCi/g	2.34E+00	6.86E-01	9.67E-02				INV	OK	
04	TH-230	DO	CP5005S14-15	pCi/g	1.72E+00	4.38E-01	6.91E-02					OK	
05	TH-230	TRG	CP5005S16-17 5	pCi/g	1.46E+00	3.61E-01	1.13E-01					OK	
06	TH-230	TRG	CP2211S01-02	pCi/g	2.26E+00	5.30E-01	7.40E-02					OK	
07	TH-230	TRG	CP2211S04-05	pCi/g	1.89E+00	4.33E-01	6.91E-02					OK	
08	TH-230	TRG	CP2211S06-07	pCi/g	1.40E+00	3.35E-01	4.96E-02					OK	
09	TH-230	TRG	CP2211S11-12	pCi/g	1.04E+00	2.62E-01	6.34E-02					OK	
10	TH-230	TRG	CP2211S13-14	pCi/g	1.43E+00	3.56E-01	9.27E-02					OK	
11	TH-230	TRG	CP2211S16-17	pCi/g	1.36E+00	3.38E-01	5.67E-02					OK	
12	TH-230	TRG	CP2211S18-19	pCi/g	1.44E+00	3.39E-01	7.00E-02					OK	
13	TH-230	TRG	CP2211S21-22	pCi/g	1.41E+00	3.11E-01	4.88E-02					OK	

Client		Auxier & Associates, Inc.	
Eberline Services-Work Order		15-10064	
Run		THISO	
Analysis Code		1	
			

Lab Fraction	Nuclide	Sample Desc	Sample Date	Sample Aliquot	Radiometric % Rec	Grav % Rec	Mean % Rec	SAF	Sep t0 Date/Time	Sep t1 Date/Time
01	TH-230	LCS	10/12/15 00:00	1.00E+00	94.12	0.00	0.00			
02	TH-230	MBL	10/12/15 00:00	1.50E+00	91.37	0.00	0.00			
03	TH-230	DUP	10/06/15 09:50	1.51E+00	57.10	0.00	0.00			
04	TH-230	DO	10/06/15 09:50	1.51E+00	93.45	0.00	0.00			
05	TH-230	TRG	10/06/15 10:00	1.55E+00	102.86	0.00	0.00			
06	TH-230	TRG	10/06/15 10:20	1.53E+00	87.71	0.00	0.00			
07	TH-230	TRG	10/06/15 10:40	1.52E+00	109.53	0.00	0.00			
08	TH-230	TRG	10/06/15 10:50	1.53E+00	115.54	0.00	0.00			
09	TH-230	TRG	10/06/15 11:10	1.53E+00	115.50	0.00	0.00			
10	TH-230	TRG	10/06/15 11:20	1.51E+00	97.30	0.00	0.00			
11	TH-230	TRG	10/06/15 11:30	1.51E+00	90.25	0.00	0.00			
12	TH-230	TRG	10/06/15 11:40	1.51E+00	100.09	0.00	0.00			
13	TH-230	TRG	10/06/15 11:50	1.50E+00	123.99	0.00	0.00			



Run

Analysis Code

Eberline Services Work Order

Client

THISO

15-10064

Auxier & Associates, Inc.

Lab Fraction	Nuclide	Sample Desc	Counting Date/Time	Half-life (days)	Detect	Carrier	Count Time	Counts	Bkg CPM	Eif
01	TH-230	LCS	10/21/15 08:50		A_Spec	Alpha_047	170	3.71 E+02	1.00 E-03	16.5
02	TH-230	MBL	10/21/15 08:50		A_Spec	Alpha_048	170	5.64 E+00	8.00 E-03	17
03	TH-230	DUP	10/21/15 08:50		A_Spec	Alpha_049	170	1.16 E+02	2.00 E-03	15.3
04	TH-230	DO	10/21/15 08:50		A_Spec	Alpha_050	170	1.30 E+02	3.00 E-03	14.3
05	TH-230	TRG	10/21/15 08:50		A_Spec	Alpha_051	170	1.34 E+02	1.82 E-02	15.2
06	TH-230	TRG	10/21/15 08:50		A_Spec	Alpha_052	170	1.83 E+02	0.00 E+00	16.1
07	TH-230	TRG	10/21/15 08:50		A_Spec	Alpha_053	170	1.72 E+02	6.00 E-03	14.6
08	TH-230	TRG	10/21/15 08:50		A_Spec	Alpha_054	170	1.35 E+02	2.00 E-03	14.5
09	TH-230	TRG	10/21/15 08:50		A_Spec	Alpha_055	170	1.08 E+02	7.00 E-03	15.6
10	TH-230	TRG	10/21/15 08:50		A_Spec	Alpha_056	170	1.27 E+02	1.40 E-02	16
11	TH-230	TRG	10/21/15 11:47		A_Spec	Alpha_033	170	1.25 E+02	3.00 E-03	18
12	TH-230	TRG	10/21/15 11:47		A_Spec	Alpha_034	170	1.46 E+02	9.00 E-03	17.9
13	TH-230	TRG	10/21/15 11:47		A_Spec	Alpha_035	170	1.62 E+02	4.00 E-03	16.5



Run

Analysis Code

Eberline Services Work Order

Client

THISO

15-10064

Auxier & Associates, Inc.

Lab Fraction	Nuclide	Sample Desc	Client Identification	Activity Units	Results	Error Estimate	MDA	LCS Known	LCS %R	LCS Flag	RPD Flag	MDA Flag	Blank Flag
01	TH-232	LCS	LCS	pCi/g	5.33E+00	9.29E-01	9.62E-02	4.71E+00	113.08	OK		OK	
02	TH-232	MBL	BLANK	pCi/g	4.33E-02	5.14E-02	7.49E-02					OK	OK
03	TH-232	DUP	CP5005S14-15	pCi/g	1.84E+00	5.69E-01	1.14E-01				OK	OK	
04	TH-232	DO	CP6005S14-15	pCi/g	1.88E+00	4.31E-01	7.88E-02					OK	
05	TH-232	TRG	CP5005S16-17 5	pCi/g	1.25E+00	3.20E-01	7.13E-02					OK	
06	TH-232	TRG	CP2211S01-02	pCi/g	7.39E-01	2.33E-01	7.39E-02					OK	
07	TH-232	TRG	CP2211S04-05	pCi/g	1.18E+00	3.03E-01	6.18E-02					OK	
08	TH-232	TRG	CP2211S06-07	pCi/g	1.19E+00	2.97E-01	4.32E-02					OK	
09	TH-232	TRG	CP2211S11-12	pCi/g	1.04E+00	2.63E-01	4.01E-02					OK	
10	TH-232	TRG	CP2211S13-14	pCi/g	1.39E+00	3.47E-01	6.37E-02					OK	
11	TH-232	TRG	CP2211S16-17	pCi/g	1.15E+00	3.00E-01	6.47E-02					OK	
12	TH-232	TRG	CP2211S18-19	pCi/g	1.19E+00	2.94E-01	5.16E-02					OK	
13	TH-232	TRG	CP2211S21-22	pCi/g	1.37E+00	3.05E-01	5.18E-02					OK	

Run	1
Analysis Code	THISO
Eberline Services Work Order	15-10064
Client	Auxier & Associates, Inc.

Lab Fraction	Nuclide	Sample Desc	Sample Date	Sample Aliquot	Radiometric % Rec	Grav % Rec	Mean % Rec	SAF	Sep 10 Date/Time	Sep 11 Date/Time
01	TH-232	LCS	10/12/15 00:00	1.00E+00	94.12	0.00	0.00			
02	TH-232	MBL	10/12/15 00:00	1.50E+00	91.37	0.00	0.00			
03	TH-232	DUP	10/06/15 09:50	1.51E+00	57.10	0.00	0.00			
04	TH-232	DO	10/06/15 09:50	1.51E+00	93.45	0.00	0.00			
05	TH-232	TRG	10/06/15 10:00	1.55E+00	102.86	0.00	0.00			
06	TH-232	TRG	10/06/15 10:20	1.53E+00	87.71	0.00	0.00			
07	TH-232	TRG	10/06/15 10:40	1.52E+00	109.53	0.00	0.00			
08	TH-232	TRG	10/06/15 10:50	1.53E+00	115.54	0.00	0.00			
09	TH-232	TRG	10/06/15 11:10	1.53E+00	115.50	0.00	0.00			
10	TH-232	TRG	10/06/15 11:20	1.51E+00	97.30	0.00	0.00			
11	TH-232	TRG	10/06/15 11:30	1.51E+00	90.25	0.00	0.00			
12	TH-232	TRG	10/06/15 11:40	1.51E+00	100.09	0.00	0.00			
13	TH-232	TRG	10/06/15 11:50	1.50E+00	123.99	0.00	0.00			



Run

Analysis Code

Eberline Services Work Order

Client

1

THISO

15-10064

Auxier & Associates, Inc.

Lab Fraction	Nuclide	Sample Desc	Counting Date/Time	Half-life (days)	Detect	Carrier	Count Time	Counts	Bkg CPM	Eff
01	TH-232	LCS	10/21/15 08:50		A_Spec	Alpha_047	170	3.12 E+02	4.00 E-03	16.5
02	TH-232	MBL	10/21/15 08:50		A_Spec	Alpha_048	170	3.81 E+00	7.00 E-03	17
03	TH-232	DUP	10/21/15 08:50		A_Spec	Alpha_049	170	9.13 E+01	4.00 E-03	15.3
04	TH-232	DO	10/21/15 08:50		A_Spec	Alpha_050	170	1.28 E+02	0.00 E+00	14.3
05	TH-232	TRG	10/21/15 08:50		A_Spec	Alpha_051	170	1.15 E+02	4.55 E-03	15.2
06	TH-232	TRG	10/21/15 08:50		A_Spec	Alpha_052	170	6.00 E+01	0.00 E+00	16.1
07	TH-232	TRG	10/21/15 08:50		A_Spec	Alpha_053	170	1.07 E+02	4.00 E-03	14.6
08	TH-232	TRG	10/21/15 08:50		A_Spec	Alpha_054	170	1.15 E+02	1.00 E-03	14.5
09	TH-232	TRG	10/21/15 08:50		A_Spec	Alpha_055	170	1.09 E+02	1.00 E-03	15.6
10	TH-232	TRG	10/21/15 08:50		A_Spec	Alpha_056	170	1.23 E+02	4.00 E-03	16
11	TH-232	TRG	10/21/15 11:47		A_Spec	Alpha_033	170	1.07 E+02	0.00 E+00	18
12	TH-232	TRG	10/21/15 11:47		A_Spec	Alpha_034	170	1.21 E+02	3.00 E-03	17.9
13	TH-232	TRG	10/21/15 11:47		A_Spec	Alpha_035	170	1.58 E+02	0.00 E+00	16.5

Internal Fraction	Sample Desc	Client ID	Sample Date	Sample Aliquot	Tracer Aliquot (g)	Tracer ACT (dpm)	Radiometric Tracer (pCi)	Radiometric % Rec	SAF 1*	SAF 2*
01	LCS	LCS	10/12/15 00:00	1.0000	0.4510	10.1295		0.00		
02	MBL	BLANK	10/12/15 00:00	1.5000	0.2390	5.3679		0.00		
03	DUP	CP5005S14-15	10/06/15 09:50	1.5063	0.2385	5.3567		0.00		
04	DO	CP5005S14-15	10/06/15 09:50	1.5112	0.2385	5.3567		0.00		
05	TRG	CP5005S16-17 5	10/06/15 10:00	1.5548	0.2384	5.3545		0.00		
06	TRG	CP2211S01-02	10/06/15 10:20	1.5258	0.2383	5.3522		0.00		
07	TRG	CP2211S04-05	10/06/15 10:40	1.5181	0.2391	5.3702		0.00		
08	TRG	CP2211S06-07	10/06/15 10:50	1.5265	0.2386	5.3590		0.00		
09	TRG	CP2211S11-12	10/06/15 11:10	1.5282	0.2317	5.2040		0.00		
10	TRG	CP2211S13-14	10/06/15 11:20	1.5071	0.2410	5.4129		0.00		
11	TRG	CP2211S16-17	10/06/15 11:30	1.5077	0.2259	5.0737		0.00		
12	TRG	CP2211S18-19	10/06/15 11:40	1.5066	0.2253	5.0602		0.00		
13	TRG	CP2211S21-22	10/06/15 11:50	1.5007	0.2295	5.1546		0.00		

Handwritten signatures and initials are present at the bottom of the page, including what appears to be 'AF', '2180', and a large signature.

Internal Work Order 15-10064	Run 1	Analysis Code THISO	Date 10/15/2015 13:07	Technician JPACHELLA	Technician Initials <i>JP</i>	Witness Initials							
LCS & Matrix Spikes													
Isotope	Sol #	Activity cpm/g	Solution Date	Approx Addition	LCS Volume Used (g)	MS Volume Used (g)	LCS Volume Used (g)	MSD Volume Used (g)	LCS Known pCi	MS Added pCi	LCS Error Estimate	MSD Added pCi	MSD Error Estimate
Th-228	Th-8b	103.560	10/15/2015	0.100	0.1010				4.71	0.00	0.170	0.00	0.000
Th-230	Th-1b	23.520	10/15/2015	0.500	0.5004				5.30	0.00	0.143	0.00	0.000
Th-232	Th-8b	103.560	10/15/2015	0.100	0.1010				4.71	0.00	0.170	0.00	0.000
TC-99 MS	TC-2a	22043.636	7/5/2014	0.1									

Tracers													
fraction	Isotope	Sol #	Activity dpm/g	Solution Date	Volume Used (g)	Approx Addition	Tracer						LCS
01	Th-229	Th-18a	22.460	10/15/2015	0.4510	0.2200							
02	Th-229	Th-18a	22.460	10/15/2015	0.2390	0.2200							
03	Th-229	Th-18a	22.460	10/15/2015	0.2385	0.2200							
04	Th-229	Th-18a	22.460	10/15/2015	0.2385	0.2200							
05	Th-229	Th-18a	22.460	10/15/2015	0.2384	0.2200							
06	Th-229	Th-18a	22.460	10/15/2015	0.2383	0.2200							
07	Th-229	Th-18a	22.460	10/15/2015	0.2391	0.2200							
08	Th-229	Th-18a	22.460	10/15/2015	0.2386	0.2200							
09	Th-229	Th-18a	22.460	10/15/2015	0.2317	0.2200							
10	Th-229	Th-18a	22.460	10/15/2015	0.2410	0.2200							
11	Th-229	Th-18a	22.460	10/15/2015	0.2259	0.2200							
12	Th-229	Th-18a	22.460	10/15/2015	0.2253	0.2200							
13	Th-229	Th-18a	22.460	10/15/2015	0.2295	0.2200							
Matrix Spike													

Aliquot Worksheet

Work Order	Run	Analysis Code	Rpt Units	Lab Deadline	Technician
15-10064	1	THISO	grams	11/3/2015	JPACHELLA

Lab Fraction	Auxier & Associates, Inc.		Sample Type	Muffle Data		Dilution Data			Aliquot Data		MS Aliquot Data		H-3 Solids Only	
	Client ID	LCS		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	CP5005S14-15		DUP					1.5063E+00	1.5063E+00					
04	CP5005S14-15		DO					1.5112E+00	1.5112E+00					
05	CP5005S16-17 5		TRG					1.5548E+00	1.5548E+00					
06	CP2011S01-02		TRG					1.5258E+00	1.5258E+00					
07	CP2011S04-05		TRG					1.5181E+00	1.5181E+00					
08	CP2011S06-07		TRG					1.5265E+00	1.5265E+00					
09	CP2011S11-12		TRG					1.5282E+00	1.5282E+00					
10	CP2011S13-14		TRG					1.5071E+00	1.5071E+00					
11	CP2011S16-17		TRG					1.5077E+00	1.5077E+00					
12	CP2011S18-19		TRG					1.5066E+00	1.5066E+00					
13	CP2011S21-22		TRG					1.5007E+00	1.5007E+00					

Comments

0169A

Technician: JPachella Date: 10/15/15

**Rough Sample Preparation
 Log Book**

Work Order	Lab Deadline	Date Received in Prep	Date Sealed	Date Returned	Technician
15-10064	11/3/2015	10/12/2015	10/13/2015	10/14/2015	KSALLINGS

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	CP5005S14-15	14.5400	579.5100	744.8100	579.5100	730.2700	564.9700	22.64%	77.36%			
05	CP5005S16-17 5	14.4700	600.0800	773.6400	600.0800	759.1700	585.6100	22.86%	77.14%			
06	CP2011S01-02	14.4800	870.1800	1015.4200	870.1800	1000.9400	855.7000	14.51%	85.49%			
07	CP2011S04-05	14.5200	838.5600	1059.7800	838.5600	1045.2600	824.0400	21.16%	78.84%			
08	CP2011S06-07	14.5300	780.3800	968.3000	780.3800	953.7700	765.8500	19.70%	80.30%			
09	CP2011S11-12	14.4900	807.9800	1014.0000	807.9800	999.5100	793.4900	20.61%	79.39%			
10	CP2011S13-14	14.4700	744.3700	914.1000	744.3700	899.6300	729.9000	18.87%	81.13%			
11	CP2011S16-17	14.4800	509.0100	650.2700	509.0100	635.7900	494.5300	22.22%	77.78%			
12	CP2011S18-19	14.4900	554.9000	722.1900	554.9000	707.7000	540.4100	23.64%	76.36%			
13	CP2011S21-22	14.5500	717.8000	919.5800	717.8000	905.0300	703.2500	22.30%	77.70%			

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

Technician: Kary Suggs



Sample Description: SPIKE
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001319
 Batch Identification: 1510064A-TH
 Sample Identification: 01
 Sample Geometry: Shelf 2
 Procedure Description: Th iso

Detector Name: Alpha_047
 Chamber Serial Number: 02030596A
 Detector Serial Number: 91086
 Env. Background: System Bkgd 131883
 Reagent Blank: <not performed>

Sample Size: 1.000E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/21/2015 6:41:34 AM
 Acquisition Date/Time: 10/21/2015 8:50:08 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
 Tracer Quantity: 0.451 mL
 Effective Efficiency: 0.1553 +/- 0.0107
 Counting Efficiency: 0.1650 +/- 0.0029 on 10/25/2014 3:23:35 PM
 Chem. Recovery Factor: 0.9412 +/- 0.0667

Control Certificate Name: NatTh_Th-8
 Chem. Recov. of Control: TH-232 1.130786 +/- 0.106184
 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	5.800	7.00	79.20	0.00	0.00E+000	3.0
TH-228	5.361	309.83	11.14	0.17	0.00E+000	8.9
TH-229 T	4.851	267.49	12.00	0.51	0.00E+000	11.9
TH-230	4.625	370.83	10.18	0.17	0.00E+000	5.0
TH-232	3.934	312.32	11.10	0.68	0.00E+000	6.1

T = Tracer Peak used for Effective Efficiency

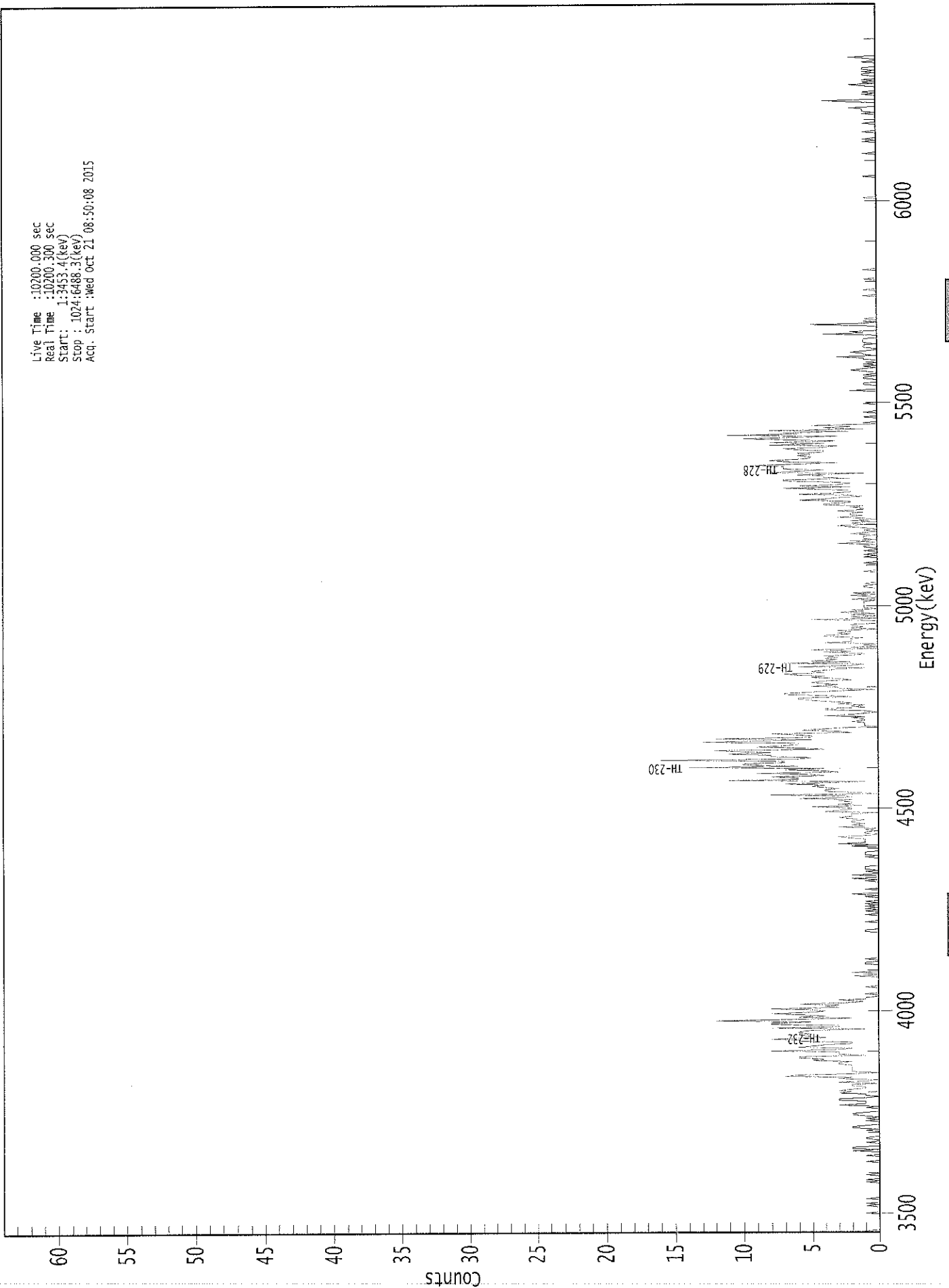
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.987	5850.00*	1.22E-001 +/- 9.84E-002	1.05E-001 +/- 1.41E-002
TH-228	0.992	5400.00*	5.29E+000 +/- 9.24E-001	7.12E-002 +/- 9.58E-003
TH-229	0.998	4872.00*	4.58E+000 +/- 6.17E-001	8.99E-002 +/- 1.21E-002
TH-230	0.989	4672.00*	6.34E+000 +/- 1.07E+000	7.13E-002 +/- 9.59E-003
TH-232	0.979	3997.00*	5.33E+000 +/- 9.29E-001	9.62E-002 +/- 1.29E-002

AG
 10/22/15

0000131829.CNF

Live Time : 10200.000 sec
Real Time : 10200.300 sec
Start : 1:3453.4(keV)
Stop : 1024:6488.3(keV)
Acq. Start : Wed Oct 21 08:50:08 2015



ROI Type: 3

ROI Type: 1

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

Sample Title: 01

Elapsed Live time: 10200

Elapsed Real Time: 10200

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

369: 4 3 4 5 4 7 4 1

Sample Title: 01

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

801: 0 1 0 0 0 0 0 0 0

Sample Title: 01

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



KBS
10/21/15

Sample Description: BLANK
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001318
 Batch Identification: 1510064A-TH
 Sample Identification: 02
 Sample Geometry: Shelf 2
 Procedure Description: Th iso

Detector Name: Alpha_048
 Chamber Serial Number: 02030596B
 Detector Serial Number: 83111
 Env. Background: System Bkgd 131884
 Reagent Blank: <not performed>

Sample Size: 1.500E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/21/2015 6:41:34 AM
 Acquisition Date/Time: 10/21/2015 8:50:09 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
 Tracer Quantity: 0.239 mL
 Effective Efficiency: 0.1554 +/- 0.0140
 Counting Efficiency: 0.1700 +/- 0.0030 on 10/25/2014 3:27:02 PM
 Chem. Recovery Factor: 0.9137 +/- 0.0840

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	5.809	4.81	101.48	1.19	0.00E+000	3.0
TH-228	5.343	0.47	626.93	1.53	0.00E+000	3.0
TH-229 T	4.885	141.79	16.61	2.21	0.00E+000	6.3
TH-230	4.591	5.64	93.45	1.36	0.00E+000	3.0
TH-232	3.971	3.81	117.34	1.19	0.00E+000	3.0

T = Tracer Peak used for Effective Efficiency

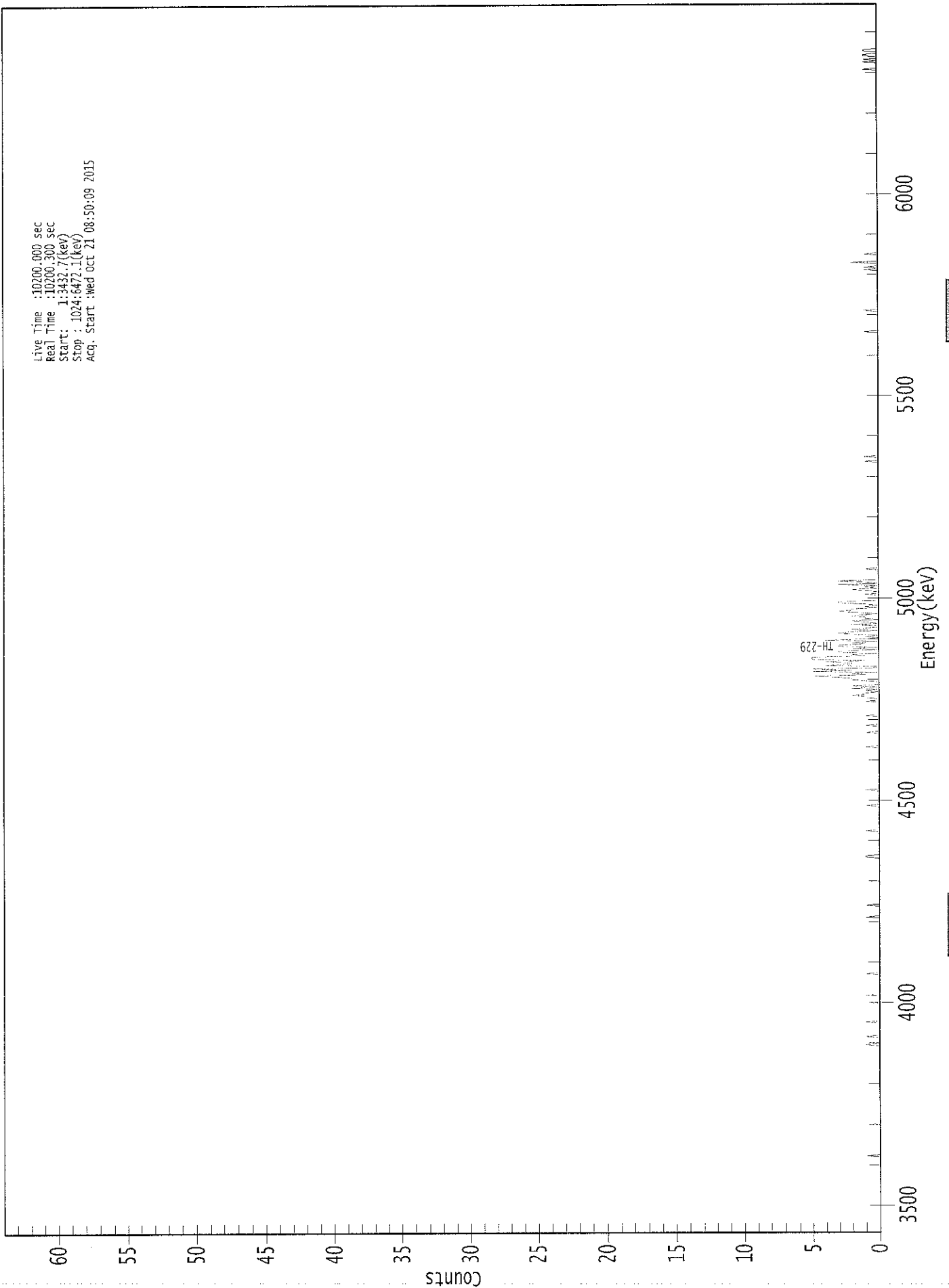
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.991	5850.00*	5.61E-002 +/- 5.78E-002	7.68E-002 +/- 1.36E-002
TH-228	0.983	5400.00*	5.35E-003 +/- 3.35E-002	8.09E-002 +/- 1.43E-002
TH-229	0.999	4872.00*	1.62E+000 +/- 2.86E-001	9.14E-002 +/- 1.62E-002
TH-230	0.966	4672.00*	6.42E-002 +/- 6.11E-002	7.81E-002 +/- 1.38E-002
TH-232	0.996	3997.00*	4.33E-002 +/- 5.14E-002	7.49E-002 +/- 1.32E-002

AG
 10/22/15

0000131830.CNF

00177



Live Time :10200.000 sec
Real Time :10200.300 sec
Start : 1:3432.7(keV)
Stop : 1024:6472.1(keV)
Acq. Start :Wed Oct 21 08:50:09 2015

ROI Type: 3

ROI Type: 1

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

Sample Title: 02

Elapsed Live time: 10200
 Elapsed Real Time: 10200

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0
65:	1	0	0	0	0	0	0	0
73:	0	0	0	0	0	0	0	0
81:	0	0	0	0	0	0	0	0
89:	0	0	0	0	0	0	0	0
97:	0	0	0	0	0	0	0	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	1	0	0	0
161:	0	0	0	1	0	0	0	0
169:	0	0	0	0	0	0	0	1
177:	0	0	0	0	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	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:	0	0	0	0	0	0	0	0
249:	0	0	0	0	0	0	0	0
257:	0	0	0	0	0	0	1	0
265:	0	0	0	0	0	0	0	0
273:	1	0	0	0	0	0	0	0
281:	0	0	0	0	0	0	0	0
289:	0	0	0	0	0	0	0	0
297:	0	0	0	0	0	0	0	0
305:	0	0	0	0	0	0	0	0
313:	1	1	0	0	0	0	0	0
321:	0	0	0	0	0	0	0	0
329:	0	0	0	0	0	0	1	0
337:	0	0	0	0	0	0	0	0
345:	0	0	0	0	0	0	0	0
353:	0	0	0	1	0	0	0	0
361:	0	0	0	0	0	0	0	0

369: 1 0 0 0 0 0 0 0 0

Sample Title: 02

Channel	-----	-----	-----	-----	-----	-----	-----	-----
377:	0	0	0	0	0	0	0	0
385:	0	0	0	0	0	0	0	0
393:	0	0	0	0	0	0	0	0
401:	0	0	0	0	1	0	0	0
409:	0	0	0	0	0	0	0	0
417:	1	0	0	0	0	0	1	0
425:	0	0	0	0	0	0	1	0
433:	0	0	0	0	0	0	0	0
441:	0	0	1	0	0	1	1	2
449:	1	1	0	1	0	2	0	2
457:	0	0	0	1	2	2	3	5
465:	1	2	0	5	2	5	0	0
473:	4	2	2	4	1	5	5	5
481:	1	2	0	3	3	0	2	0
489:	3	3	1	2	0	4	1	0
497:	1	0	2	3	2	0	2	1
505:	0	0	2	0	1	2	0	1
513:	1	2	1	0	2	3	2	2
521:	0	1	0	1	3	3	0	0
529:	0	0	0	1	0	0	1	2
537:	0	1	0	3	0	1	3	0
545:	0	0	0	0	0	0	0	0
553:	1	0	0	0	0	0	0	0
561:	0	0	0	0	0	0	0	0
569:	0	0	0	0	0	0	0	0
577:	0	0	0	0	0	0	0	0
585:	0	0	0	0	0	0	0	0
593:	0	0	0	0	0	0	0	0
601:	0	0	0	0	0	0	0	0
609:	0	0	0	0	0	0	0	0
617:	0	0	0	0	0	0	0	0
625:	0	0	0	0	0	0	0	0
633:	0	0	0	0	0	0	0	0
641:	0	1	0	0	0	1	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	1	0	0
753:	0	0	0	0	0	0	0	0
761:	0	0	0	0	0	0	0	1
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 1 0 1 0 0 0 2

Sample Title: 02

Channel	-----	-----	-----	-----	-----	-----	-----	-----
809:	0	0	0	0	0	0	1	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	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:	1	0	0	0	0	0	1	0
977:	1	0	0	1	1	0	0	1
985:	1	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

KB
10/21/15

Apex-Alpha™

Sample Description: CP5005S14-15-DUP
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001318
 Batch Identification: 1510064A-TH
 Sample Identification: 03
 Sample Geometry: Shelf 2
 Procedure Description: Th iso

Detector Name: Alpha_049
 Chamber Serial Number: 10006121A
 Detector Serial Number: 49
 Env. Background: System Bkgd 131885
 Reagent Blank: <not performed>

Sample Size: 1.506E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/6/2015 6:41:34 AM
 Acquisition Date/Time: 10/21/2015 8:50:11 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
 Tracer Quantity: 0.238 mL
 Effective Efficiency: 0.0871 +/- 0.0102
 Counting Efficiency: 0.1525 +/- 0.0027 on 12/13/2014 2:45:02 PM
 Chem. Recovery Factor: 0.5710 +/- 0.0676

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	5.819	10.66	61.14	0.34	0.00E+000	3.0
TH-228	5.319	78.98	22.22	1.02	0.00E+000	3.7
TH-229 T	4.860	79.32	22.12	0.68	0.00E+000	3.7
TH-230	4.582	115.66	18.26	0.34	0.00E+000	6.9
TH-232	3.935	91.32	20.60	0.68	0.00E+000	4.4

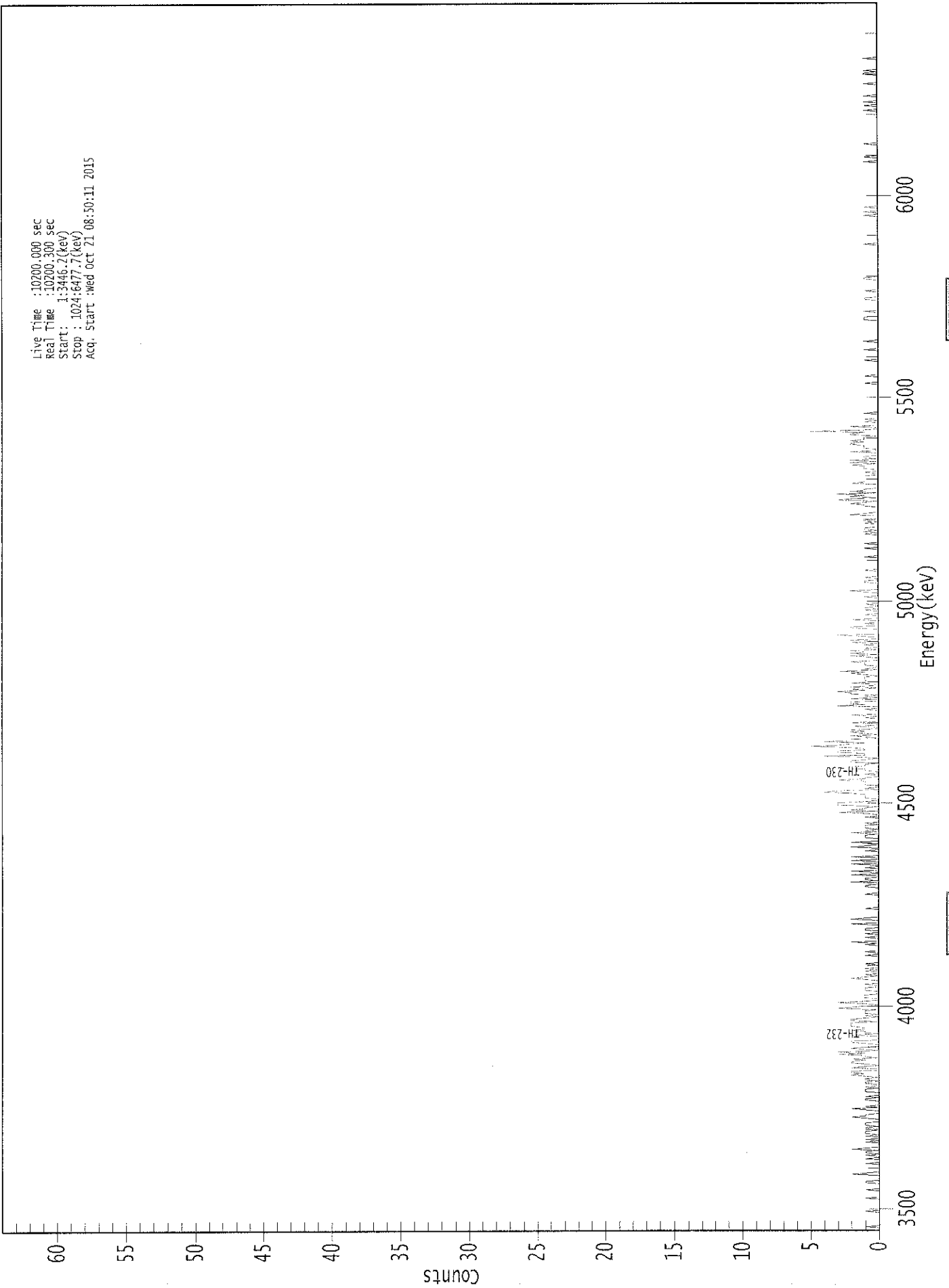
T = Tracer Peak used for Effective Efficiency

----- ----- NUCLIDE ANALYSIS RESULTS ----- -----						
Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)		
TH-227	0.995	5850.00*	2.21E-001 +/- 1.44E-001	9.92E-002 +/-	2.27E-002	
TH-228	0.966	5400.00*	1.62E+000 +/- 5.17E-001	1.29E-001 +/-	2.96E-002	
TH-229	0.999	4872.00*	1.61E+000 +/- 3.69E-001	1.14E-001 +/-	2.63E-002	
TH-230	0.959	4672.00*	2.34E+000 +/- 6.86E-001	9.67E-002 +/-	2.22E-002	
TH-232	0.980	3997.00*	1.84E+000 +/- 5.69E-001	1.14E-001 +/-	2.61E-002	

As
10/22/15

0000131831.CNF

Live Time :10200.000 sec
Real Time :10200.300 Sec
Start : 1:3446.2(kev)
Stop : 1024:6477.7(kev)
Acq. Start :Wed Oct 21 08:30:11 2015



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

369: 1 0 0 1 1 1 1 3

Sample Title: 03

Channel	-----	-----	-----	-----	-----	-----	-----	-----
377:	1	1	0	0	1	0	0	1
385:	1	3	2	1	1	0	2	2
393:	1	0	1	4	1	1	3	3
401:	1	1	2	5	3	2	1	4
409:	2	2	0	1	2	0	1	2
417:	1	2	0	0	2	0	0	2
425:	0	0	0	1	0	2	0	0
433:	0	0	1	0	0	3	1	2
441:	2	0	0	2	0	1	0	2
449:	2	3	1	2	0	2	0	0
457:	2	0	1	1	1	1	0	1
465:	2	1	3	0	1	0	0	1
473:	1	1	2	0	0	0	1	2
481:	0	2	1	2	0	1	0	0
489:	1	0	2	0	2	0	0	1
497:	3	0	0	0	0	0	2	2
505:	0	0	1	0	0	2	0	0
513:	0	1	0	0	0	1	0	1
521:	0	0	1	0	0	0	0	0
529:	1	0	0	0	1	2	0	0
537:	0	0	0	0	1	1	0	0
545:	1	0	0	0	0	0	1	0
553:	0	0	0	0	0	0	0	0
561:	0	1	0	0	0	0	0	0
569:	1	0	0	0	1	0	0	0
577:	0	0	0	0	1	0	1	0
585:	1	1	0	0	0	1	0	1
593:	1	0	0	0	2	1	0	0
601:	0	0	0	1	1	2	1	0
609:	3	2	0	2	1	3	0	2
617:	1	1	0	0	0	0	2	1
625:	1	1	1	1	1	0	0	1
633:	0	0	1	1	1	2	0	2
641:	0	2	0	1	1	0	0	0
649:	2	0	0	1	1	1	2	2
657:	1	2	1	1	1	0	2	2
665:	1	5	1	0	0	2	0	0
673:	0	1	0	1	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	1	0	0	0	0	0	1
713:	0	0	0	0	0	0	0	0
721:	0	0	0	0	1	0	0	0
729:	0	0	0	0	0	1	0	0
737:	0	0	0	0	1	0	0	0
745:	0	0	0	0	0	0	0	0
753:	0	0	0	0	0	0	1	1
761:	1	0	0	0	0	1	0	0
769:	0	0	0	0	0	0	0	1
777:	1	0	0	0	0	0	1	0
785:	0	0	0	0	0	0	0	0
793:	1	1	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	1	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	1	0	0
849:	1	0	0	0	1	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	1	0	0	0	1	0
897:	0	0	0	0	0	0	0	0
905:	0	1	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	1	0	0
937:	0	1	0	0	1	0	0	0
945:	0	1	0	0	0	0	0	0
953:	0	0	0	1	0	0	0	0
961:	0	0	0	1	1	0	1	0
969:	0	0	0	0	0	0	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

Apex-Alpha™

YS
10/21/15

Sample Description: CP5005S14-15
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001318
 Batch Identification: 1510064A-TH
 Sample Identification: 04
 Sample Geometry: Shelf 2
 Procedure Description: Th iso

Detector Name: Alpha_050
 Chamber Serial Number: 10006121B
 Detector Serial Number: 50
 Env. Background: System Bkgd 131886
 Reagent Blank: <not performed>

Sample Size: 1.511E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/6/2015 6:41:34 AM
 Acquisition Date/Time: 10/21/2015 8:50:13 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
 Tracer Quantity: 0.238 mL
 Effective Efficiency: 0.1334 +/- 0.0128
 Counting Efficiency: 0.1428 +/- 0.0026 on 12/13/2014 2:43:59 PM
 Chem. Recovery Factor: 0.9345 +/- 0.0914

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	6.98	80.28	1.02	0.00E+000	4.4
TH-228	5.382	119.98	17.98	1.02	0.00E+000	7.1
TH-229 T	4.873	121.49	17.83	0.51	0.00E+000	3.3
TH-230	4.645	130.49	17.20	0.51	0.00E+000	4.6
TH-232	3.971	128.00	17.39	0.00	0.00E+000	16.3

T = Tracer Peak used for Effective Efficiency

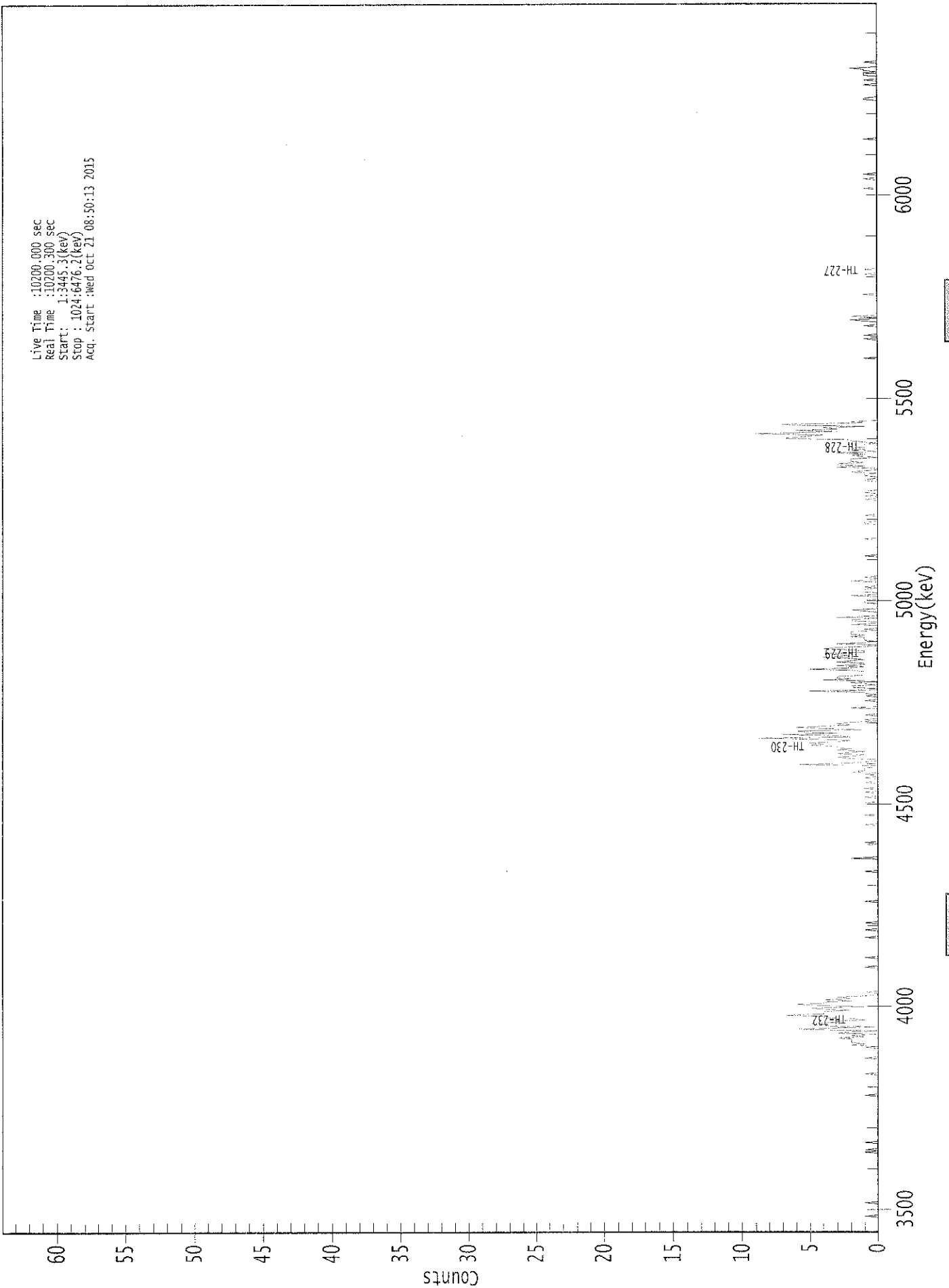
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.995	5850.00*	9.42E-002 +/- 7.77E-002	8.50E-002 +/- 1.60E-002
TH-228	0.998	5400.00*	1.60E+000 +/- 4.17E-001	8.41E-002 +/- 1.58E-002
TH-229	1.000	4872.00*	1.60E+000 +/- 3.02E-001	6.93E-002 +/- 1.31E-002
TH-230	0.996	4672.00*	1.72E+000 +/- 4.38E-001	6.91E-002 +/- 1.30E-002
TH-232	0.996	3997.00*	1.68E+000 +/- 4.31E-001	7.88E-002 +/- 1.48E-002

AG
10/22/15

0000131823.CNF

Live Time :10200.000 sec
Real Time :10200.300 sec
Start : 1:3445.3(kev)
Stop : 1024.6476.2(kev)
Acq. Start :Wed Oct 21 08:50:13 2015



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: 04

Elapsed Live time: 10200
 Elapsed Real Time: 10200

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

369: 0 1 0 0 0 0 1 0

Sample Title: 04

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

801: 0 1 0 0 0 0 0 0 0

Sample Title: 04

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

10/21/15

Apex-Alpha™

Sample Description: CP5005S16-17 5
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001318
 Batch Identification: 1510064A-TH
 Sample Identification: 05
 Sample Geometry: Shelf 2
 Procedure Description: Th iso

Detector Name: Alpha_051
 Chamber Serial Number: 10006123A
 Detector Serial Number: 51
 Env. Background: System Bkgd 131887
 Reagent Blank: <not performed>

Sample Size: 1.555E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/6/2015 6:41:34 AM
 Acquisition Date/Time: 10/21/2015 8:50:16 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
 Tracer Quantity: 0.238 mL
 Effective Efficiency: 0.1567 +/- 0.0142
 Counting Efficiency: 0.1524 +/- 0.0027 on 12/13/2014 2:42:37 PM
 Chem. Recovery Factor: 1.0286 +/- 0.0948

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	5.830	20.68	47.19	2.32	0.00E+000	3.0
TH-228	5.358	148.82	16.65	6.18	0.00E+000	3.6
TH-229 T	4.874	142.68	16.64	2.32	0.00E+000	5.2
TH-230	4.623	133.91	17.28	3.09	0.00E+000	6.8
TH-232	3.956	115.23	18.37	0.77	0.00E+000	4.9

T = Tracer Peak used for Effective Efficiency

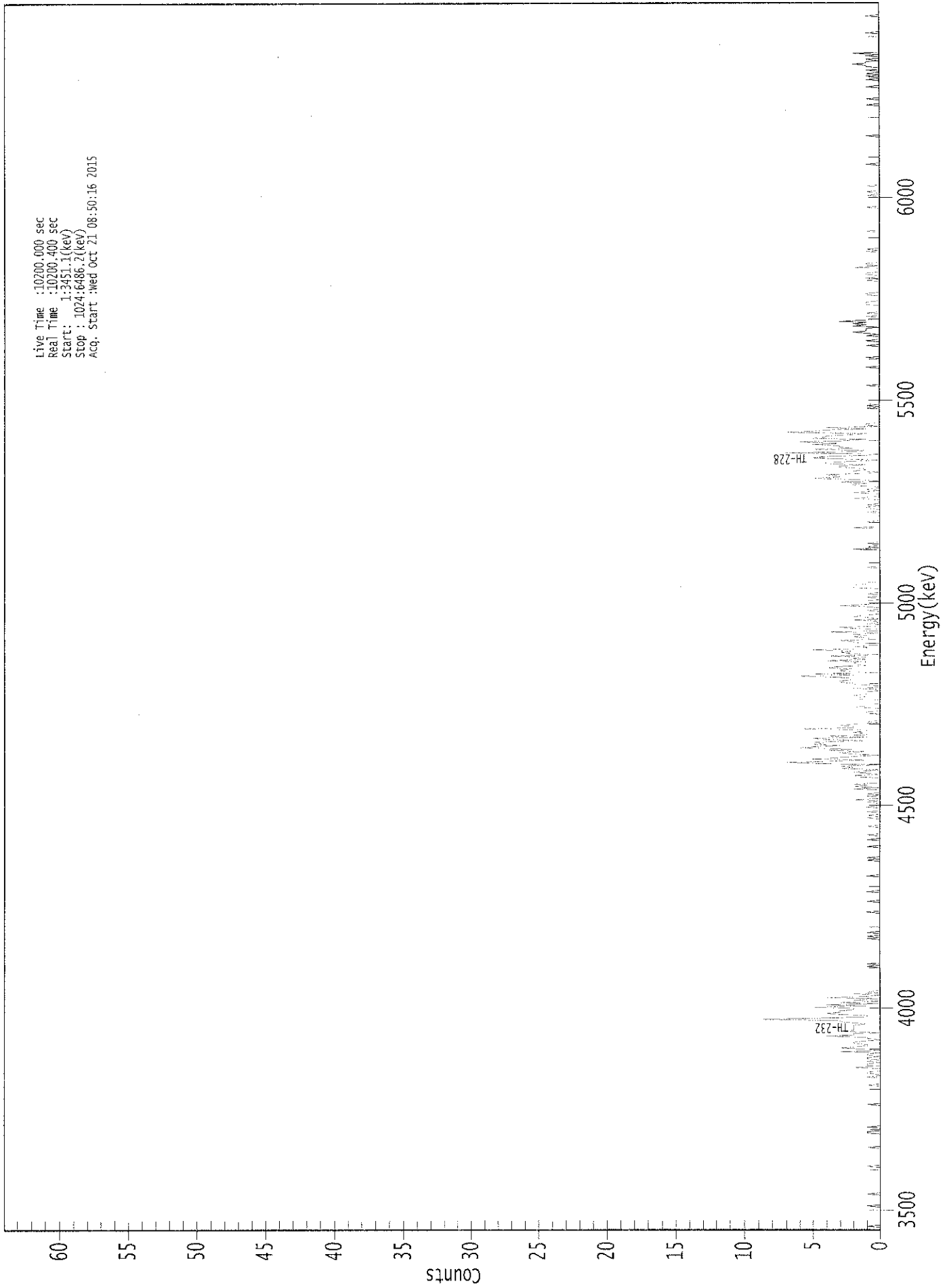
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.998	5850.00*	2.31E-001 +/- 1.16E-001	1.05E-001 +/- 1.85E-002
TH-228	0.991	5400.00*	1.64E+000 +/- 4.00E-001	1.50E-001 +/- 2.66E-002
TH-229	1.000	4872.00*	1.56E+000 +/- 2.76E-001	1.02E-001 +/- 1.81E-002
TH-230	0.987	4672.00*	1.46E+000 +/- 3.61E-001	1.13E-001 +/- 2.01E-002
TH-232	0.991	3997.00*	1.25E+000 +/- 3.20E-001	7.13E-002 +/- 1.26E-002

AG
 10/21/15

0000131832.CNF

Live Time :10200.000 sec
Real Time :10200.400 sec
Start : 1:3451.1(keV)
Stop : 1024:6486.2(keV)
Acq. Start :Wed Oct 21 08:50:16 2015



ROI Type: 1

ROI Type: 3

20109

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

Sample Title: 05

Elapsed Live time: 10200
 Elapsed Real Time: 10200

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

369: 0 2 1 2 0 0 0 0

Sample Title: 05

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

801: 0 2 0 1 1 0 0 0

Sample Title: 05

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

Apex-Alpha™

KS
10/22/15

Sample Description: CP2211S01-02
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001318
 Batch Identification: 1510064A-TH
 Sample Identification: 06
 Sample Geometry: Shelf 2
 Procedure Description: Th iso

Detector Name: Alpha_052
 Chamber Serial Number: 10006123B
 Detector Serial Number: 52
 Env. Background: System Bkgd 131888
 Reagent Blank: <not performed>

Sample Size: 1.526E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/6/2015 6:41:34 AM
 Acquisition Date/Time: 10/21/2015 8:50:18 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
 Tracer Quantity: 0.238 mL
 Effective Efficiency: 0.1409 +/- 0.0133
 Counting Efficiency: 0.1607 +/- 0.0029 on 12/13/2014 2:40:57 PM
 Chem. Recovery Factor: 0.8771 +/- 0.0839

Peak Match Tolerance: 0.175 MeV

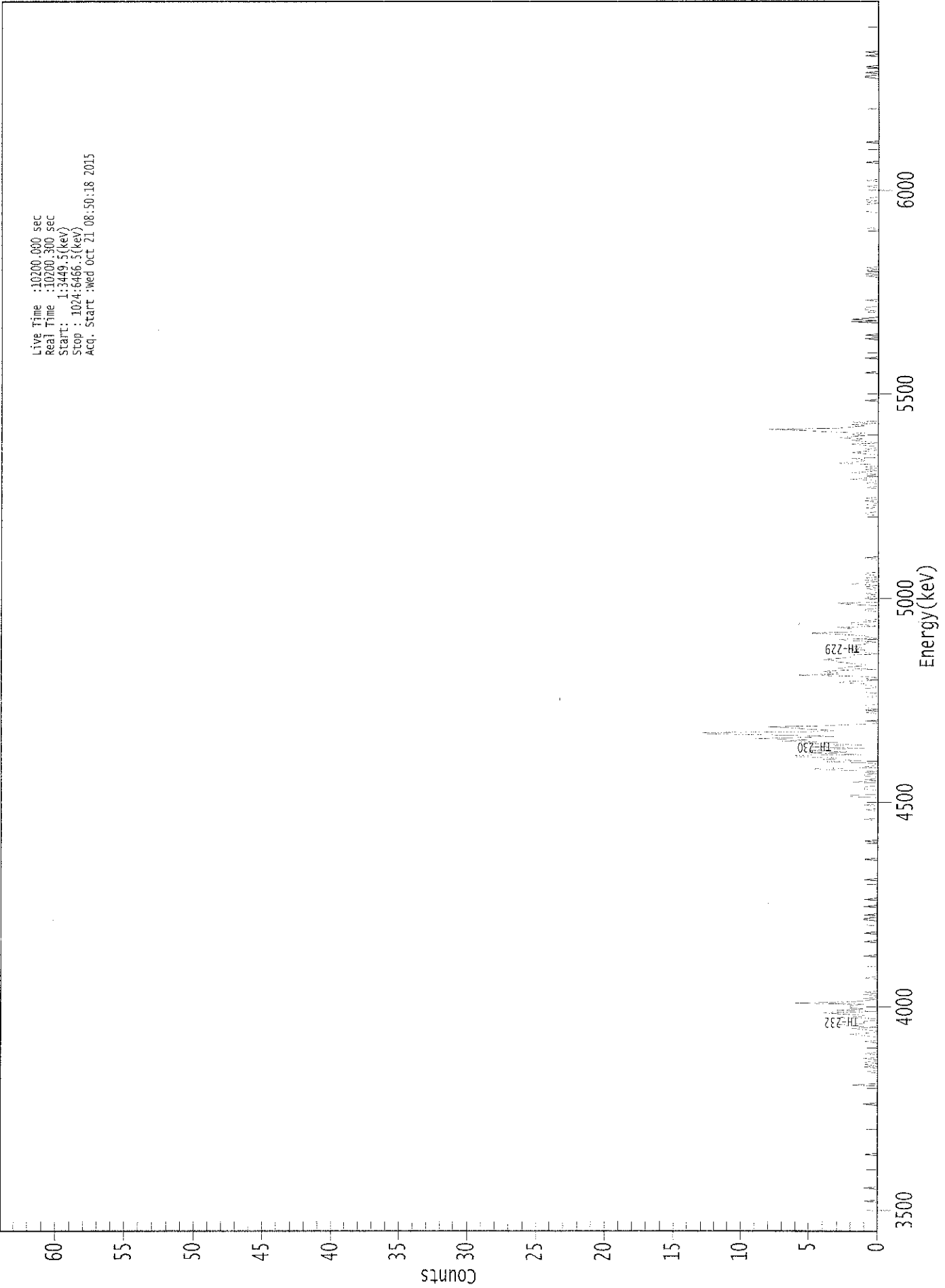
----- ----- PEAK AREA REPORT ----- -----						
Nuclide	Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
TH-227	5.864	15.23	52.44	0.77	0.00E+000	8.8
TH-228	5.364	71.68	23.80	2.32	0.00E+000	8.3
TH-229 T	4.880	128.23	17.40	0.77	0.00E+000	4.7
TH-230	4.637	183.00	14.53	0.00	0.00E+000	8.4
TH-232	3.966	60.00	25.51	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)		
TH-227	0.999	5850.00*	1.93E-001 +/- 1.07E-001	8.30E-002 +/- 1.53E-002		
TH-228	0.993	5400.00*	8.97E-001 +/- 2.70E-001	1.17E-001 +/- 2.16E-002		
TH-229	1.000	4872.00*	1.59E+000 +/- 2.93E-001	8.12E-002 +/- 1.50E-002		
TH-230	0.994	4672.00*	2.26E+000 +/- 5.30E-001	7.40E-002 +/- 1.36E-002		
TH-232	0.995	3997.00*	7.39E-001 +/- 2.33E-001	7.39E-002 +/- 1.36E-002		

AG
10/22/15

0000131824.CNF



Live Time :10200.690 sec
Real Time :10200.300 sec
Start: 1:3449.5(keV)
Stop : 1024.6466.5(keV)
Acq. Start :Wed Oct 21 08:50:18 2015

76700 :

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

369: 1 1 0 0 0 2 0 1

Sample Title: 06

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

801: 1 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	1	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	1
849:	0	0	0	0	0	1	0	1
857:	0	1	1	0	0	0	0	0
865:	0	0	0	0	1	0	0	0
873:	0	1	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	1	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	1	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	0	0
937:	0	0	0	0	0	0	0	0
945:	0	0	0	0	0	0	0	0
953:	0	0	0	0	0	0	0	1
961:	1	0	0	1	0	0	0	0
969:	1	0	0	0	0	0	0	0
977:	0	1	0	0	1	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
10/21/15

Apex-Alpha™

Sample Description: CP2211S04-05
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001318
 Batch Identification: 1510064A-TH
 Sample Identification: 07
 Sample Geometry: Shelf 2
 Procedure Description: Th iso

Detector Name: Alpha_053
 Chamber Serial Number: 10006122A
 Detector Serial Number: 53
 Env. Background: System Bkgd 131889
 Reagent Blank: <not performed>

Sample Size: 1.518E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/6/2015 6:41:34 AM
 Acquisition Date/Time: 10/21/2015 8:50:15 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
 Tracer Quantity: 0.239 mL
 Effective Efficiency: 0.1594 +/- 0.0141
 Counting Efficiency: 0.1455 +/- 0.0026 on 12/13/2014 2:39:33 PM
 Chem. Recovery Factor: 1.0953 +/- 0.0991

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	5.807	17.15	48.68	0.85	0.00E+000	3.0
TH-228	5.345	119.64	18.04	1.36	0.00E+000	5.0
TH-229 T	4.870	145.49	16.28	0.51	0.00E+000	6.2
TH-230	4.605	171.98	15.00	1.02	0.00E+000	4.4
TH-232	3.951	107.32	18.99	0.68	0.00E+000	3.7

T = Tracer Peak used for Effective Efficiency

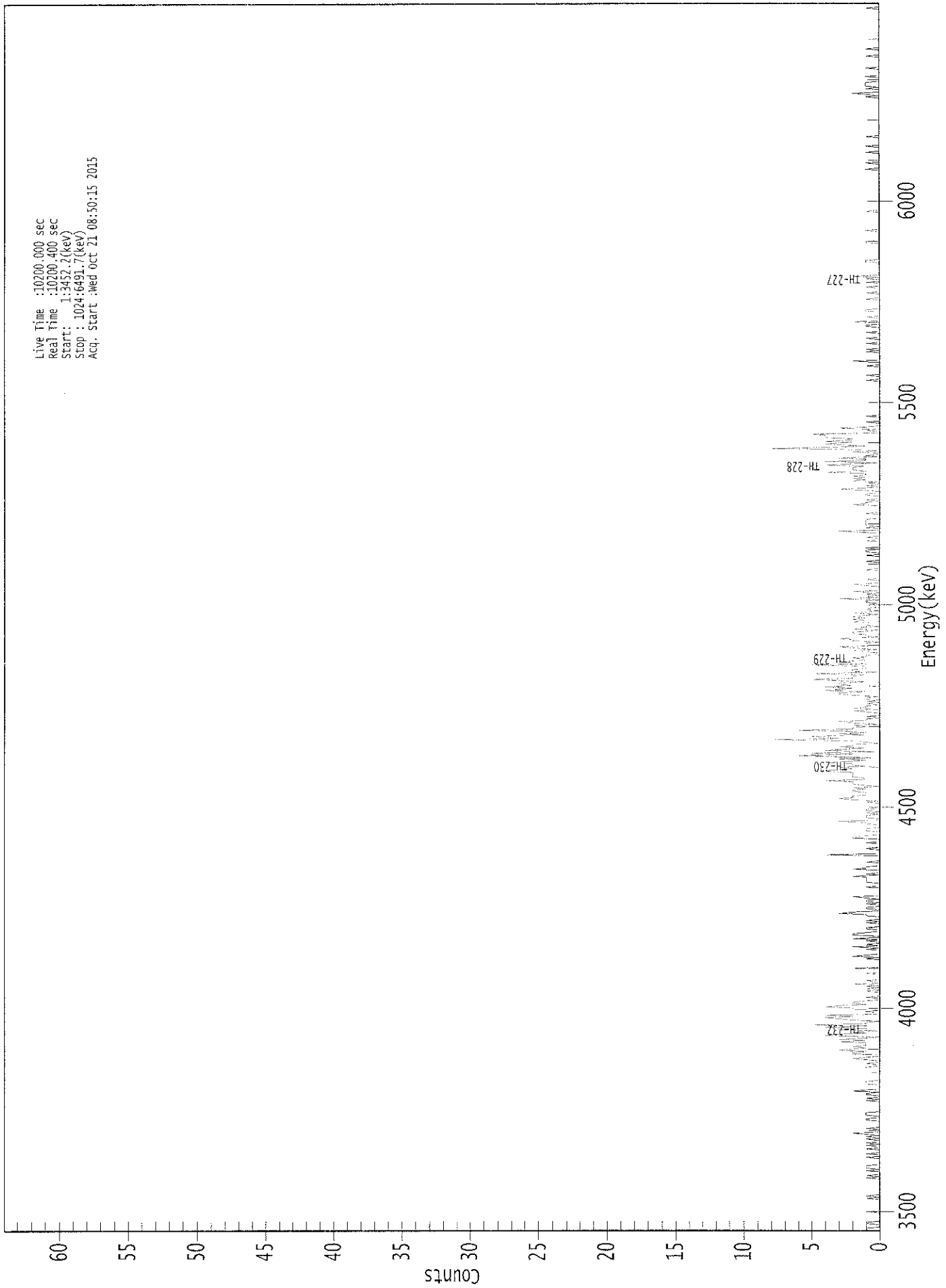
 ----- NUCLIDE ANALYSIS RESULTS -----

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.991	5850.00*	1.93E-001 +/- 9.97E-002	6.73E-002 +/- 1.17E-002
TH-228	0.984	5400.00*	1.33E+000 +/- 3.33E-001	7.63E-002 +/- 1.33E-002
TH-229	1.000	4872.00*	1.60E+000 +/- 2.78E-001	5.78E-002 +/- 1.00E-002
TH-230	0.977	4672.00*	1.89E+000 +/- 4.33E-001	6.91E-002 +/- 1.20E-002
TH-232	0.989	3997.00*	1.18E+000 +/- 3.03E-001	6.18E-002 +/- 1.07E-002

AG
 10/22/15

0000131825.CNF

Live Time :10200.000 sec
Real Time :10200.400 sec
Start : 1:3452.2(keV)
Stop : 1024:6491.7(keV)
Acq. Start :Wed Oct 21 08:30:15 2015



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

369: 1 2 0 1 2 2 2 4

Sample Title: 07

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

801: 0 0 0 0 0 0 0 0 1

Sample Title: 07

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

Apex-Alpha™

LB
10/21/15

Sample Description: CP2211S06-07
 Spectrum File: \\OR-ALPHA\Canberra\ApexAlpha\Root\Data\00001318
 Batch Identification: 1510064A-TH
 Sample Identification: 08
 Sample Geometry: Shelf 2
 Procedure Description: Th iso

Detector Name: Alpha_054
 Chamber Serial Number: 10006122B
 Detector Serial Number: 54
 Env. Background: System Bkgd 131890
 Reagent Blank: <not performed>

Sample Size: 1.526E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/6/2015 6:41:34 AM
 Acquisition Date/Time: 10/21/2015 8:50:20 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
 Tracer Quantity: 0.239 mL
 Effective Efficiency: 0.1678 +/- 0.0145
 Counting Efficiency: 0.1452 +/- 0.0026 on 12/13/2014 2:38:19 PM
 Chem. Recovery Factor: 1.1554 +/- 0.1023

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	5.843	19.49	45.07	0.51	0.00E+000	3.0
TH-228	5.374	115.15	18.34	0.85	0.00E+000	4.5
TH-229 T	4.864	152.83	15.86	0.17	0.00E+000	6.3
TH-230	4.631	134.66	16.92	0.34	0.00E+000	6.7
TH-232	3.948	114.83	18.31	0.17	0.00E+000	5.0

T = Tracer Peak used for Effective Efficiency

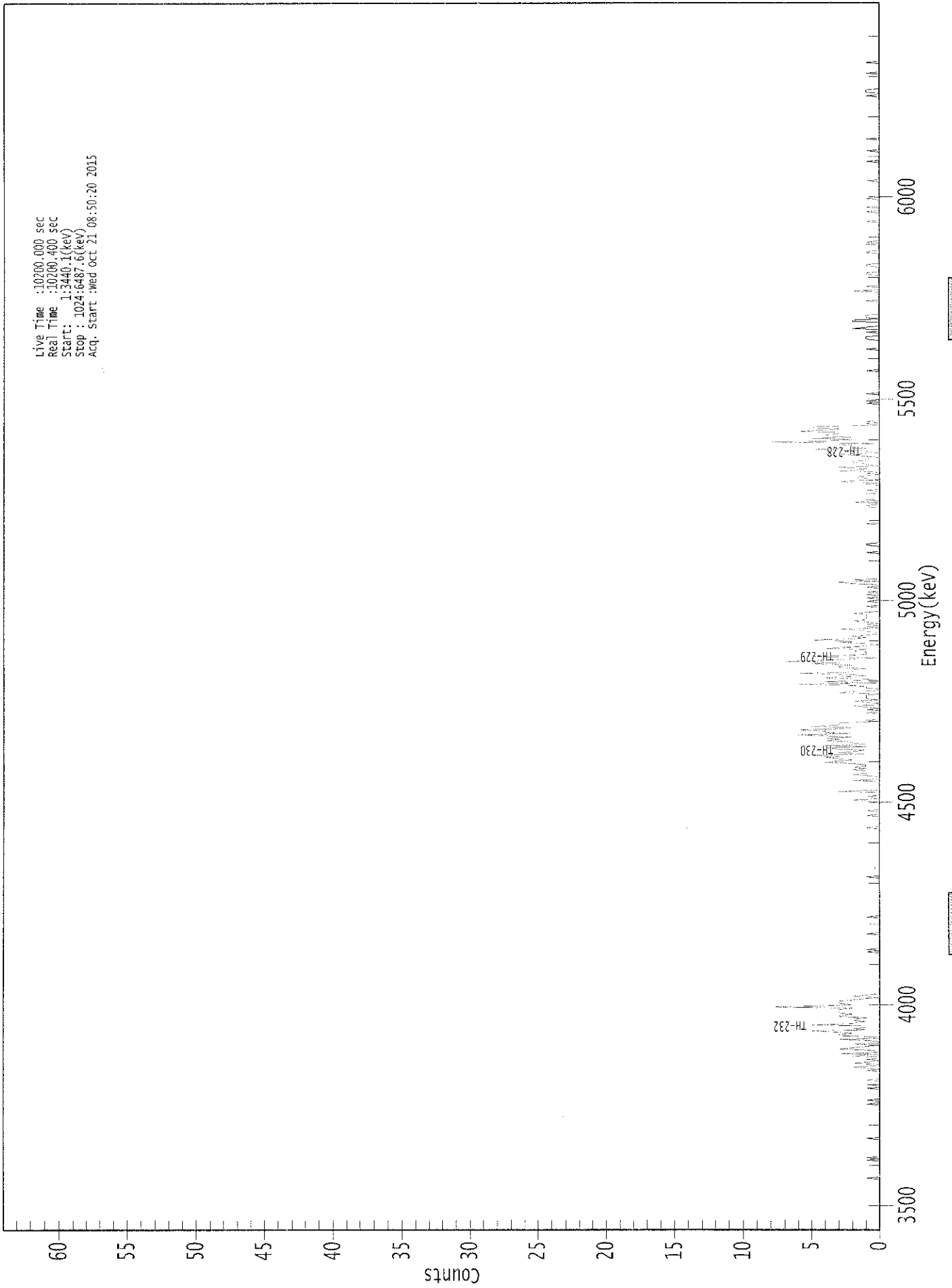
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	1.000	5850.00*	2.07E-001 +/- 9.98E-002	5.58E-002 +/- 9.47E-003
TH-228	0.996	5400.00*	1.21E+000 +/- 3.03E-001	6.29E-002 +/- 1.07E-002
TH-229	1.000	4872.00*	1.59E+000 +/- 2.70E-001	4.34E-002 +/- 7.37E-003
TH-230	0.991	4672.00*	1.40E+000 +/- 3.35E-001	4.96E-002 +/- 8.42E-003
TH-232	0.988	3997.00*	1.19E+000 +/- 2.97E-001	4.32E-002 +/- 7.34E-003

AG
10/22/15

0000131826.CNF

Live Time :10200.000 sec
Real Time :10200.400 sec
Start : 1:3440.1(kev)
Stop : 1024:6487.6(kev)
Acq. Start :wed Oct 21 08:50:20 2015



ROI Type: 3

ROI Type: 1

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

Sample Title: 08

Elapsed Live time: 10200

Elapsed Real Time: 10200

Channel	1	2	3	4	5	6	7	8	9
1:	0	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0	0
41:	0	0	0	1	0	0	0	0	0
49:	0	0	0	0	0	0	0	0	0
57:	0	0	1	0	1	0	0	0	0
65:	0	0	0	0	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	1	0	0	1	0	0	0	0
113:	0	0	0	0	0	0	1	0	0
121:	0	1	0	0	0	1	0	0	0
129:	0	0	0	0	0	1	0	1	1
137:	2	0	0	2	1	0	1	0	0
145:	0	2	0	3	0	0	1	3	3
153:	2	1	0	2	0	0	1	3	3
161:	0	0	3	3	2	3	5	1	1
169:	2	1	1	5	2	2	1	2	2
177:	2	1	3	3	2	3	3	3	3
185:	3	2	8	4	2	3	3	3	3
193:	2	1	0	2	1	0	0	0	0
201:	0	0	0	0	0	0	0	0	0
209:	0	0	0	0	0	0	0	0	0
217:	0	0	0	0	0	0	0	0	0
225:	0	0	0	0	0	0	0	0	0
233:	1	0	1	0	0	0	0	0	0
241:	0	0	0	0	0	0	0	1	1
249:	0	0	0	0	0	0	0	0	0
257:	0	0	0	0	0	1	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	1	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	1	1
337:	0	0	0	0	0	0	0	0	0
345:	0	1	0	0	0	1	0	0	0
353:	0	0	0	0	0	1	2	0	0
361:	0	1	0	0	0	3	0	0	0

369: 0 0 0 0 0 0 0 2 0

Sample Title: 08

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

801: 0 0 1 1 0 0 0 0

Sample Title: 08

Channel	-----	-----	-----	-----	-----	-----	-----	-----
809:	0	0	0	0	0	1	1	0
817:	0	0	0	0	1	0	1	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	1
841:	0	0	0	0	0	0	0	1
849:	0	0	0	1	0	0	0	0
857:	0	0	1	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	1	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	1	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	0	0
945:	1	0	0	1	1	1	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	1	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

MS
10/21/15

Apex-Alpha™

Sample Description: CP2211S11-12
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001318
 Batch Identification: 1510064A-TH
 Sample Identification: 09
 Sample Geometry: Shelf 2
 Procedure Description: Th iso

Detector Name: Alpha_055
 Chamber Serial Number: 10006124A
 Detector Serial Number: 55
 Env. Background: System Bkgd 131891
 Reagent Blank: <not performed>

Sample Size: 1.528E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/6/2015 6:41:34 AM
 Acquisition Date/Time: 10/21/2015 8:50:22 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
 Tracer Quantity: 0.232 mL
 Effective Efficiency: 0.1806 +/- 0.0154
 Counting Efficiency: 0.1564 +/- 0.0028 on 12/13/2014 2:35:48 PM
 Chem. Recovery Factor: 1.1550 +/- 0.1006

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	5.811	8.49	69.59	0.51	0.00E+000	3.0
TH-228	5.369	103.30	19.47	1.70	0.00E+000	4.3
TH-229 T	4.885	159.81	15.57	1.19	0.00E+000	4.9
TH-230	4.631	107.81	19.00	1.19	0.00E+000	3.5
TH-232	3.968	108.83	18.81	0.17	0.00E+000	15.9

T = Tracer Peak used for Effective Efficiency

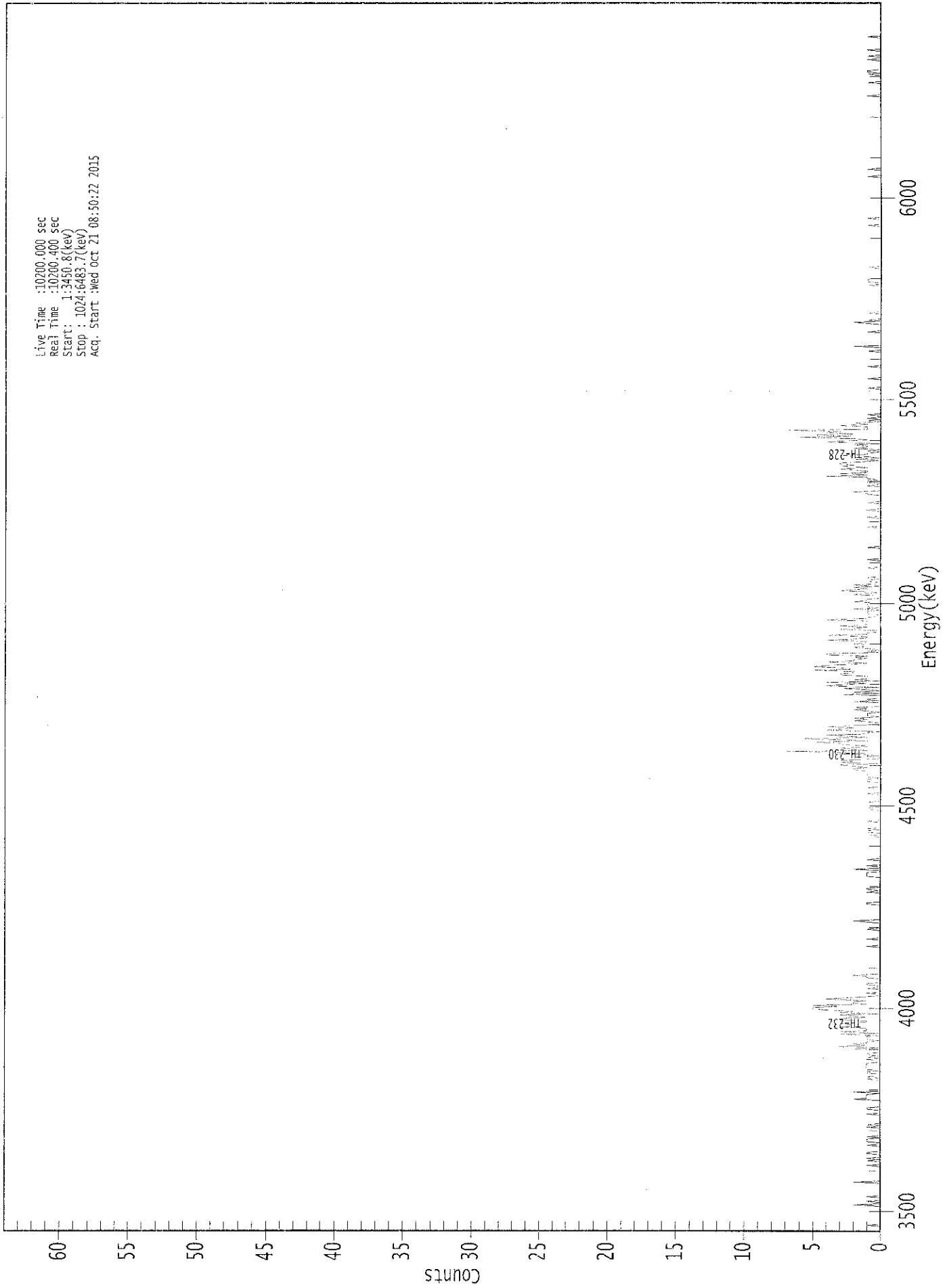
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.992	5850.00*	8.37E-002 +/- 5.99E-002	5.17E-002 +/- 8.65E-003
TH-228	0.995	5400.00*	1.01E+000 +/- 2.58E-001	7.16E-002 +/- 1.20E-002
TH-229	0.999	4872.00*	1.54E+000 +/- 2.58E-001	6.35E-002 +/- 1.06E-002
TH-230	0.991	4672.00*	1.04E+000 +/- 2.62E-001	6.34E-002 +/- 1.06E-002
TH-232	0.996	3997.00*	1.04E+000 +/- 2.63E-001	4.01E-002 +/- 6.70E-003

AG
 10/22/15

0000131827.CNF

Live Time :10200.000 sec
Real Time :10200.400 sec
Start : 1:3450.8(kev)
Stop : 1024:6483.7(kev)
Acq. Start :Wed Oct 21 08:50:22 2015



ROI Type: 3

ROI Type: 1

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

Sample Title: 09

Elapsed Live time: 10200
Elapsed Real Time: 10200

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

369: 0 1 0 0 0 0 1 1

Sample Title: 09

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

801: 0 0 1 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	1	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	1	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	0	0
937:	0	0	0	0	0	0	0	0
945:	0	1	0	0	0	0	0	0
953:	0	0	0	0	1	0	0	0
961:	0	0	0	1	0	1	1	0
969:	0	0	0	0	0	0	0	1
977:	0	0	1	0	0	0	0	1
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

Apex-Alpha™

YCB
10/22/15

Sample Description: CP2211S13-14
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001318
 Batch Identification: 1510064A-TH
 Sample Identification: 10
 Sample Geometry: Shelf 2
 Procedure Description: Th iso

Detector Name: Alpha_056
 Chamber Serial Number: 10006124B
 Detector Serial Number: 56
 Env. Background: System Bkgd 131892
 Reagent Blank: <not performed>

Sample Size: 1.507E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/6/2015 6:41:34 AM
 Acquisition Date/Time: 10/21/2015 8:50:24 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
 Tracer Quantity: 0.241 mL
 Effective Efficiency: 0.1557 +/- 0.0140
 Counting Efficiency: 0.1600 +/- 0.0028 on 12/13/2014 2:30:22 PM
 Chem. Recovery Factor: 0.9730 +/- 0.0889

Peak Match Tolerance: 0.175 MeV

----- ----- PEAK AREA REPORT ----- -----						
Nuclide	Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
TH-227	5.856	7.98	74.39	1.02	0.00E+000	3.0
TH-228	5.354	135.64	16.93	1.36	0.00E+000	4.4
TH-229	T 4.869	143.30	16.49	1.70	0.00E+000	6.2
TH-230	4.623	126.62	17.61	2.38	0.00E+000	10.2
TH-232	3.961	123.32	17.71	0.68	0.00E+000	5.3

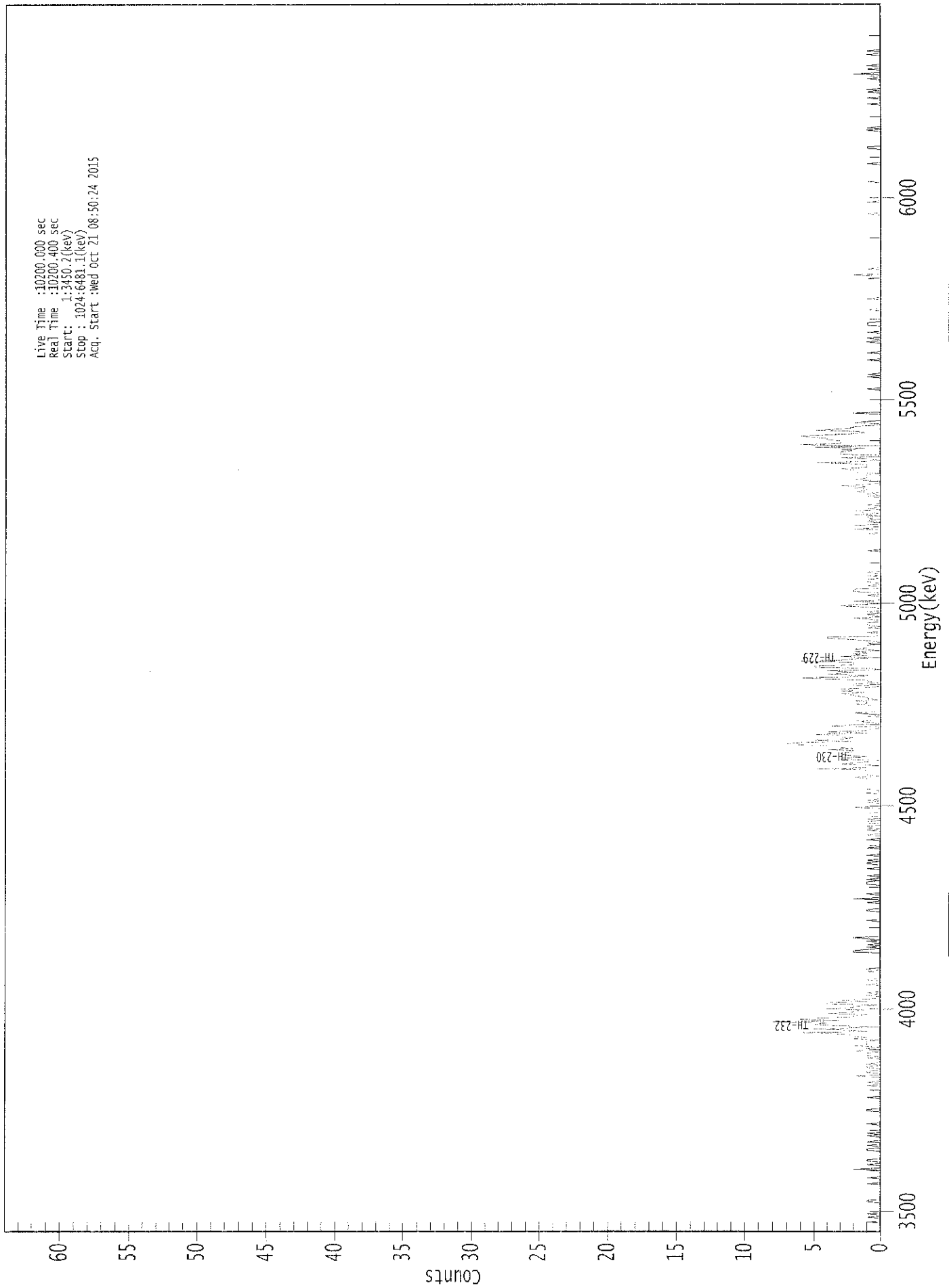
T = Tracer Peak used for Effective Efficiency

----- ----- NUCLIDE ANALYSIS RESULTS ----- -----						
Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)		MDA (pCi/gram)	
TH-227	1.000	5850.00*	9.25E-002 +/-	7.07E-002	7.30E-002 +/-	1.28E-002
TH-228	0.989	5400.00*	1.56E+000 +/-	3.79E-001	7.86E-002 +/-	1.38E-002
TH-229	1.000	4872.00*	1.63E+000 +/-	2.86E-001	8.33E-002 +/-	1.46E-002
TH-230	0.988	4672.00*	1.43E+000 +/-	3.56E-001	9.27E-002 +/-	1.63E-002
TH-232	0.993	3997.00*	1.39E+000 +/-	3.47E-001	6.37E-002 +/-	1.12E-002

AG
10/22/15

0000131828.CNF

Live Time :10200.000 sec
Real Time :10200.400 sec
Start : 1:34:50.2{(keV)
Stop : 1024:6481.1{(keV)
Acq. Start :Wed Oct 21 08:50:24 2015



7120217

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

Sample Title: 10

Elapsed Live time: 10200

Elapsed Real Time: 10200

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

369: 1 0 0 0 0 0 0 0 1

Sample Title: 10

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

801: 0 1 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	1
849:	0	0	0	0	0	0	0	0
857:	0	1	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	1	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	1	0	0	0	0	0	0
897:	0	0	0	0	0	0	1	1
905:	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	1	0	1
921:	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	0	0
937:	0	0	0	1	0	0	0	0
945:	1	0	0	0	0	1	0	1
953:	0	0	0	0	0	0	0	0
961:	1	0	0	0	2	0	0	0
969:	1	0	0	1	0	0	0	0
977:	0	0	0	0	1	0	0	1
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

Apex-Alpha™

UP
10/21/15

Sample Description: CP2211S16-17
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001318
 Batch Identification: 1510064A-TH
 Sample Identification: 11
 Sample Geometry: Shelf 2
 Procedure Description: Th iso

Detector Name: Alpha_033
 Chamber Serial Number: 04026479A
 Detector Serial Number: 91132
 Env. Background: System Bkgd 131869
 Reagent Blank: <not performed>

Sample Size: 1.508E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/6/2015 6:41:34 AM
 Acquisition Date/Time: 10/21/2015 11:47:53 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
 Tracer Quantity: 0.226 mL
 Effective Efficiency: 0.1629 +/- 0.0147
 Counting Efficiency: 0.1805 +/- 0.0032 on 10/25/2014 2:26:39 PM
 Chem. Recovery Factor: 0.9025 +/- 0.0828

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	10.66	61.14	0.34	0.00E+000	3.0
TH-228	5.343	122.81	17.79	1.19	0.00E+000	4.7
TH-229	T 4.878	140.49	16.57	0.51	0.00E+000	6.0
TH-230	4.605	125.49	17.54	0.51	0.00E+000	10.5
TH-232	3.956	107.00	19.04	0.00	0.00E+000	7.0

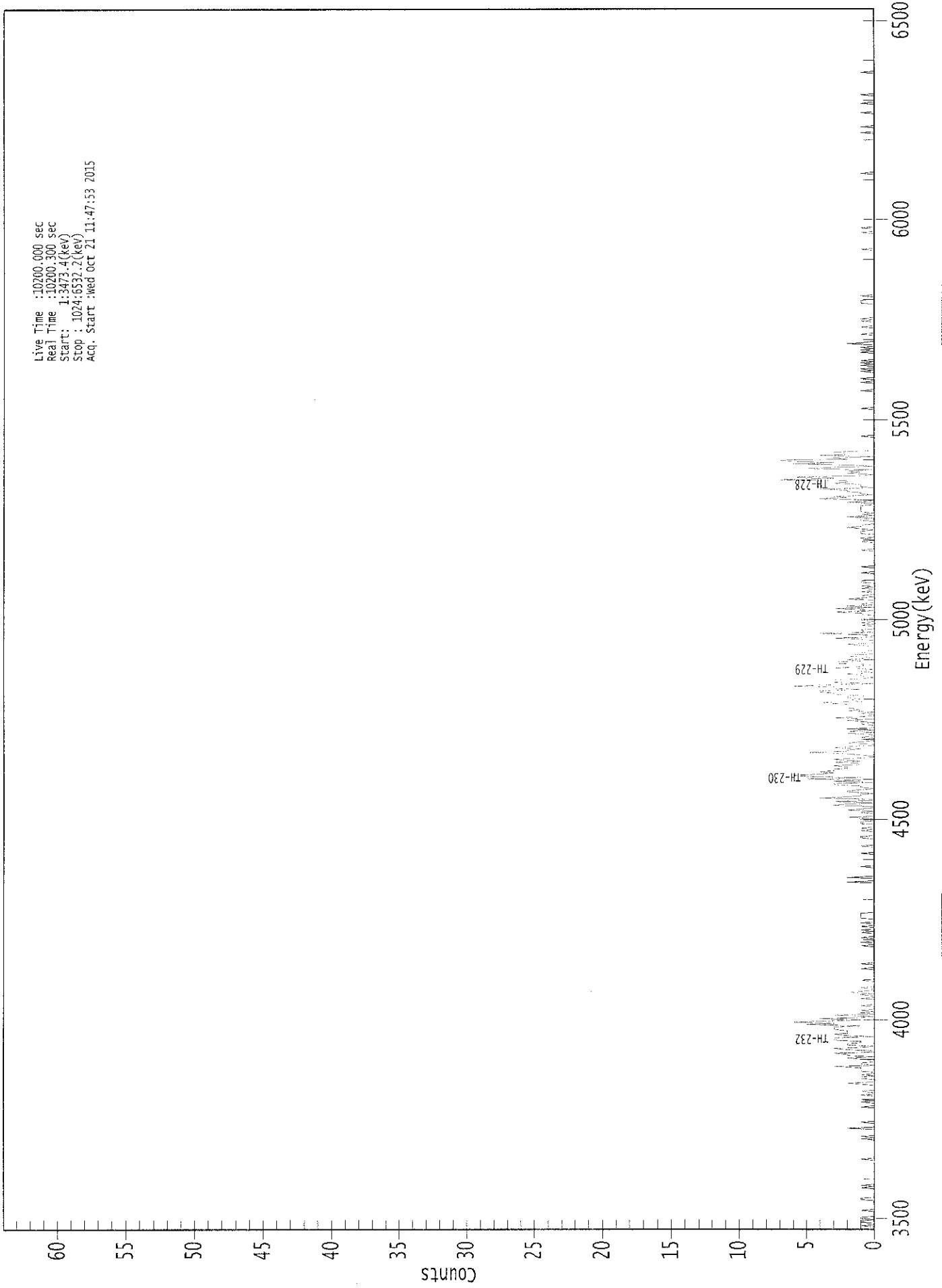
T = Tracer Peak used for Effective Efficiency

----- NUCLIDE ANALYSIS RESULTS -----						
Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)		MDA (pCi/gram)	
TH-227	0.995	5850.00*	1.18E-001 +/-	7.52E-002	5.30E-002 +/-	9.35E-003
TH-228	0.983	5400.00*	1.35E+000 +/-	3.37E-001	7.22E-002 +/-	1.27E-002
TH-229	1.000	4872.00*	1.52E+000 +/-	2.69E-001	5.69E-002 +/-	1.00E-002
TH-230	0.977	4672.00*	1.36E+000 +/-	3.38E-001	5.67E-002 +/-	1.00E-002
TH-232	0.991	3997.00*	1.15E+000 +/-	3.00E-001	6.47E-002 +/-	1.14E-002

AG
10/22/15

0000131841.CNF

Live Time :10200.000 sec
Real Time :10200.300 Sec
Start: 1:3473.4(keV)
Stop : 1024:0532.2(keV)
Acq. Start :Wed Oct 21 11:47:53 2015



: 00222

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

369: 1 0 1 1 3 3 0 3

Sample Title: 11

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

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

Apex-Alpha™

10/21/15

Sample Description: CP2211S18-19
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001318
 Batch Identification: 1510064A-TH
 Sample Identification: 12
 Sample Geometry: Shelf 2
 Procedure Description: Th iso

Detector Name: Alpha_034
 Chamber Serial Number: 04026479B
 Detector Serial Number: 91136
 Env. Background: System Bkgd 131870
 Reagent Blank: <not performed>

Sample Size: 1.507E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/6/2015 6:41:34 AM
 Acquisition Date/Time: 10/21/2015 11:47:55 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
 Tracer Quantity: 0.225 mL
 Effective Efficiency: 0.1790 +/- 0.0155
 Counting Efficiency: 0.1789 +/- 0.0031 on 10/25/2014 2:30:05 PM
 Chem. Recovery Factor: 1.0009 +/- 0.0884

Peak Match Tolerance: 0.175 MeV

 PEAK AREA REPORT

Nuclide	Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
TH-227	5.862	12.15	58.49	0.85	0.00E+000	3.0
TH-228	5.352	137.66	16.73	0.34	0.00E+000	4.4
TH-229 T	4.847	154.00	15.85	0.00	0.00E+000	4.4
TH-230	4.604	146.47	16.29	1.53	0.00E+000	5.0
TH-232	3.934	121.49	17.83	0.51	0.00E+000	5.3

T = Tracer Peak used for Effective Efficiency

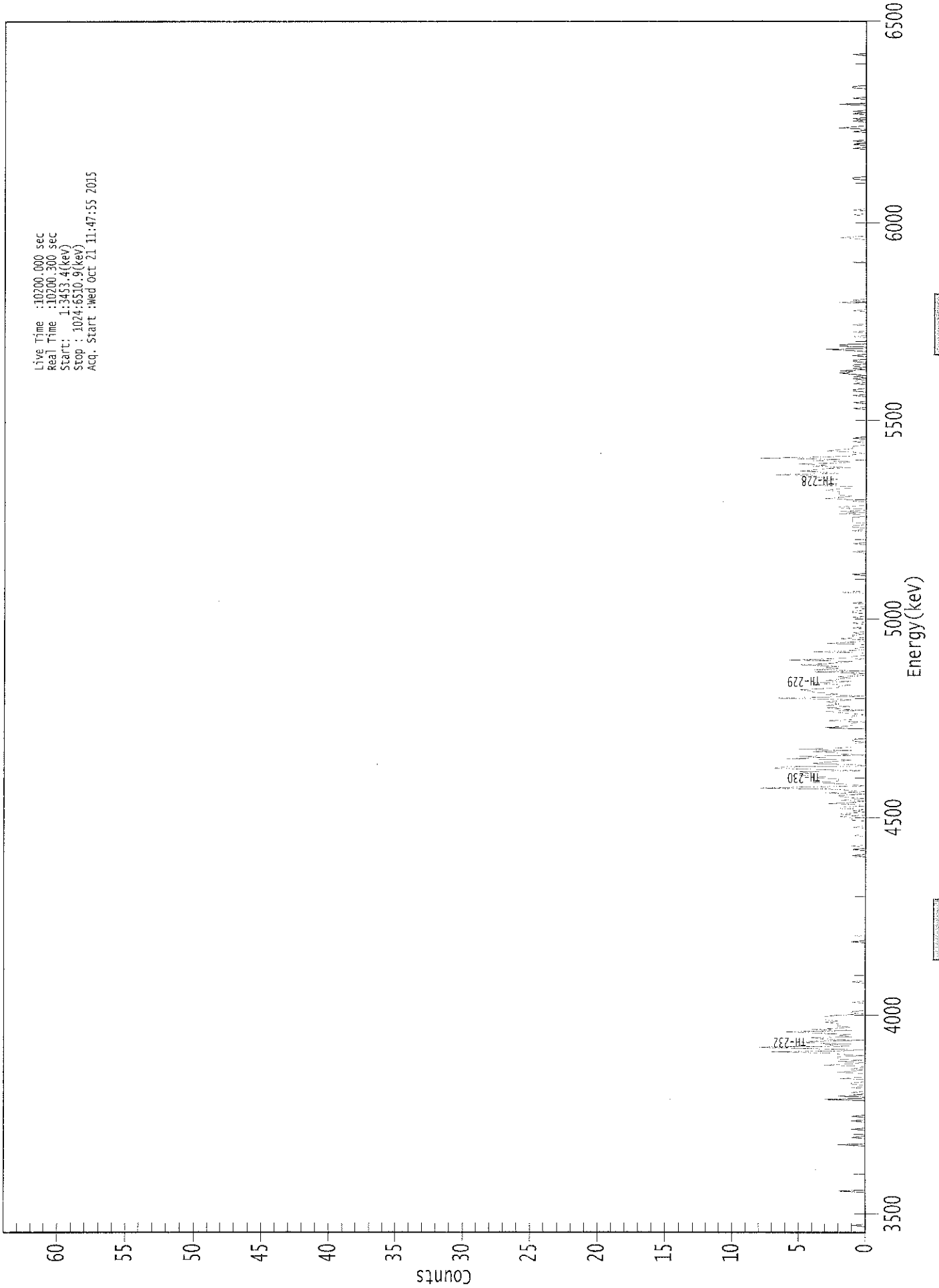
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.999	5850.00*	1.23E-001 +/- 7.47E-002	6.04E-002 +/- 1.03E-002
TH-228	0.988	5400.00*	1.37E+000 +/- 3.27E-001	4.77E-002 +/- 8.10E-003
TH-229	0.997	4872.00*	1.52E+000 +/- 2.58E-001	5.92E-002 +/- 1.00E-002
TH-230	0.976	4672.00*	1.44E+000 +/- 3.39E-001	7.00E-002 +/- 1.19E-002
TH-232	0.979	3997.00*	1.19E+000 +/- 2.94E-001	5.16E-002 +/- 8.75E-003

AG
 10/22/15

0000131842.CNF

Live Time :10200.000 sec
Real Time :10200.300 sec
Start : 1:3453.4(kev)
Stop : 1024:6510.9(kev)
Acq. Start :wed Oct 21 11:47:55 2015



: 00227

 ***** 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	1	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	2	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	2	0	0	0	0	0	0
81:	1	0	0	0	0	0	0	0	1
89:	0	0	0	0	0	0	0	1	0
97:	0	0	1	0	0	0	0	0	0
105:	0	0	0	0	0	0	0	0	0
113:	3	0	0	2	0	0	0	1	0
121:	0	0	1	0	0	0	1	1	0
129:	0	0	2	0	0	0	0	0	2
137:	1	0	1	0	0	0	3	1	0
145:	2	0	2	2	2	0	0	2	2
153:	7	2	0	5	8	1	1	3	1
161:	5	4	0	3	4	1	1	2	1
169:	4	6	1	4	2	1	1	2	2
177:	2	3	2	3	3	3	3	3	2
185:	0	1	1	0	0	0	0	0	0
193:	0	0	1	0	0	0	0	0	0
201:	0	0	0	0	0	0	0	0	0
209:	0	0	0	1	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	1	0	0
249:	0	0	0	0	0	0	0	0	0
257:	0	0	0	0	0	0	0	0	0
265:	0	0	0	0	0	0	0	0	0
273:	0	0	0	0	0	0	0	0	0
281:	0	0	0	0	0	0	0	0	0
289:	0	0	0	0	0	0	0	0	0
297:	0	0	0	0	0	0	0	0	0
305:	0	0	0	0	0	0	0	0	0
313:	0	0	0	0	0	0	0	1	0
321:	0	0	0	1	0	0	0	1	0
329:	0	0	0	0	0	0	0	0	1
337:	0	0	0	0	0	0	0	1	0
345:	0	0	0	0	1	1	1	1	2
353:	0	2	1	0	1	0	0	2	2
361:	0	0	3	1	0	2	0	0	1

369: 2 2 0 3 0 1 2 8

Sample Title: 12

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

801: 0 0 0 0 0 0 0 0 0

Sample Title: 12

Channel	-----	-----	-----	-----	-----	-----	-----	-----
809:	0	0	0	0	0	0	0	0
817:	0	0	0	1	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	1
841:	2	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	1	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	1	1	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0
913:	0	0	0	1	0	0	1	0
921:	0	1	0	0	0	0	0	0
929:	0	1	0	0	2	1	0	0
937:	0	0	1	0	1	0	0	0
945:	1	0	1	0	0	0	0	0
953:	2	0	0	0	0	1	0	0
961:	0	0	0	0	0	0	1	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:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

11/5
10/21/15

Apex-Alpha™

Sample Description: CP2211S21-22
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001318
 Batch Identification: 1510064A-TH
 Sample Identification: 13
 Sample Geometry: Shelf 2
 Procedure Description: Th iso

Detector Name: Alpha_035
 Chamber Serial Number: 04026477A
 Detector Serial Number: 58771
 Env. Background: System Bkgd 131871
 Reagent Blank: <not performed>

Sample Size: 1.501E+000 +/- 0.000E+000 gram
 Sample Date/Time: 10/6/2015 6:41:34 AM
 Acquisition Date/Time: 10/21/2015 11:47:52 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: 0.2043 +/- 0.0166
 Counting Efficiency: 0.1647 +/- 0.0029 on 10/25/2014 2:34:10 PM
 Chem. Recovery Factor: 1.2399 +/- 0.1029

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	5.865	17.15	48.68	0.85	0.00E+000	3.0
TH-228	5.371	134.15	16.98	0.85	0.00E+000	7.5
TH-229 T	4.872	179.00	14.69	0.00	0.00E+000	9.3
TH-230	4.634	162.32	15.42	0.68	0.00E+000	10.1
TH-232	3.958	158.00	15.64	0.00	0.00E+000	4.0

T = Tracer Peak used for Effective Efficiency

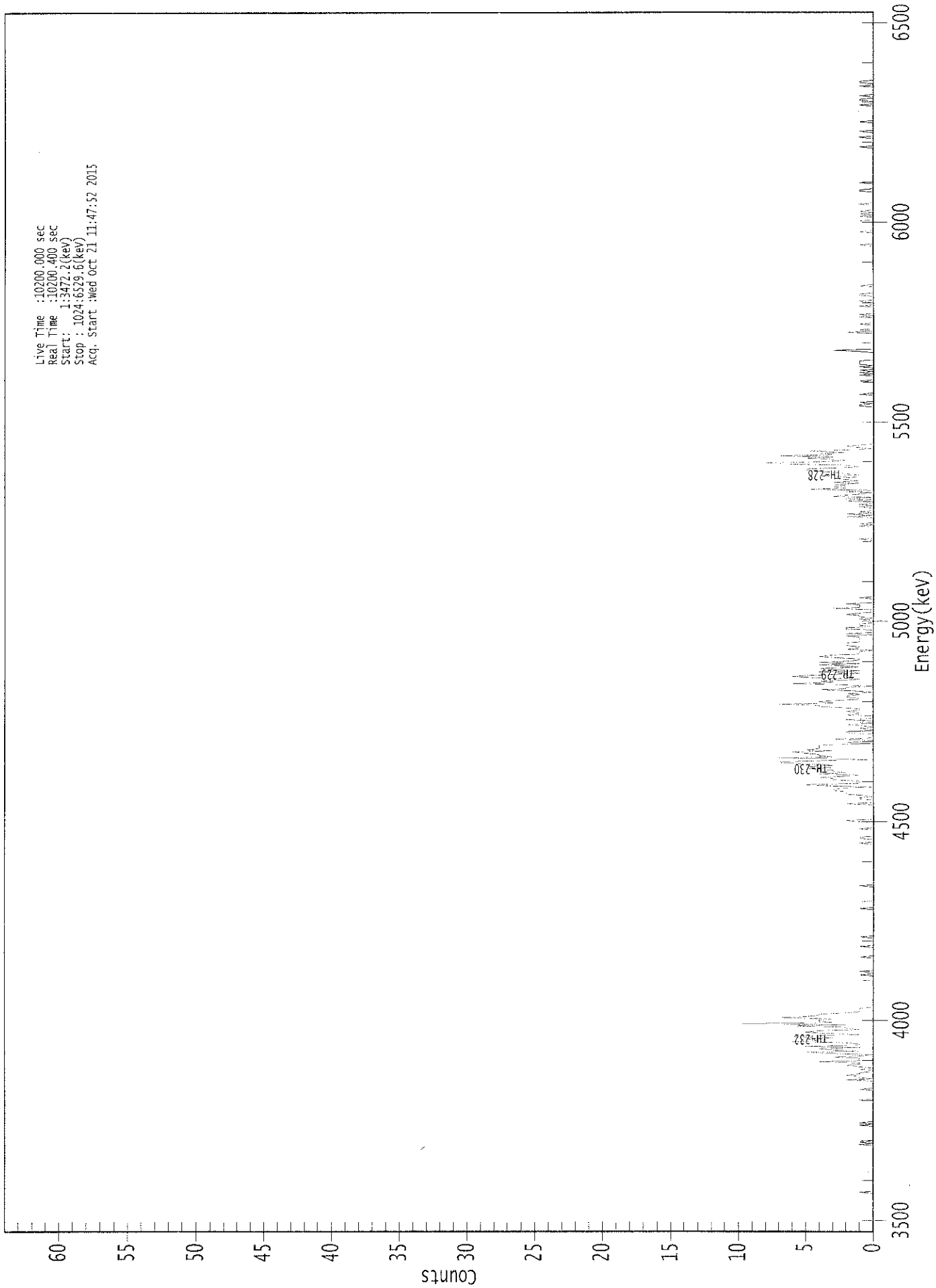
 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.999	5850.00*	1.52E-001 +/- 7.80E-002	5.31E-002 +/- 8.45E-003
TH-228	0.996	5400.00*	1.18E+000 +/- 2.74E-001	5.26E-002 +/- 8.36E-003
TH-229	1.000	4872.00*	1.55E+000 +/- 2.47E-001	5.21E-002 +/- 8.28E-003
TH-230	0.993	4672.00*	1.41E+000 +/- 3.11E-001	4.88E-002 +/- 7.77E-003
TH-232	0.992	3997.00*	1.37E+000 +/- 3.05E-001	5.18E-002 +/- 8.24E-003

AG
10/22/15

0000131837.CNF

Live Time :10200.000 sec
Real Time :10200.400 sec
Start : 1:3472.2(keV)
Stop : 1024:6529.6(keV)
Acq. Start :Wed Oct 21 11:47:52 2015



ROI Type: 3

ROI Type: 1

: 00232

 ***** 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	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	0	0	0	0
65:	0	0	0	0	0	0	0	0	0
73:	0	1	0	1	0	0	0	0	0
81:	0	0	0	0	0	0	0	0	0
89:	0	1	0	1	0	0	0	0	0
97:	0	0	0	0	0	0	0	0	0
105:	0	0	0	0	0	0	0	1	0
113:	0	0	0	0	0	0	0	0	1
121:	0	0	0	0	0	0	0	0	2
129:	0	1	1	2	1	1	1	0	0
137:	1	0	1	2	1	1	1	4	1
145:	1	1	3	1	0	3	3	5	1
153:	3	4	1	5	1	1	1	2	6
161:	4	5	3	6	4	1	1	4	5
169:	4	1	2	2	6	2	2	10	3
177:	4	4	3	7	5	4	4	4	2
185:	1	1	1	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	1
217:	0	0	1	0	0	0	0	0	0
225:	0	0	0	0	0	0	0	1	0
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	0	0	0	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	0	0	0
289:	0	0	1	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	1	0
329:	0	0	1	1	0	0	0	0	0
337:	0	0	1	0	0	0	0	0	0
345:	1	2	0	0	0	0	0	0	0
353:	0	0	0	0	0	0	0	0	2
361:	0	0	0	1	1	0	1	1	2

369: 2 2 3 3 2 0 4 5

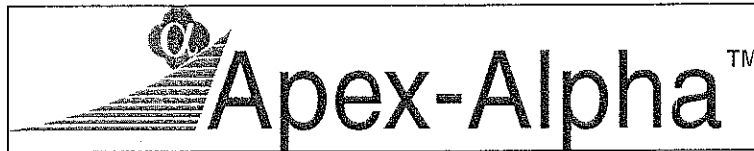
Sample Title: 13

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

801: 0 0 0 0 0 0 0 0 0

Sample Title: 13

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



QA SUMMARY REPORT

Review Of QA Results - Pulser Check

Date : 10/21/2015
Time : 5:50:26 AM

CHAMBER	DEVICE	PARAMETER	FLAG	DATE
Alpha 001	21f	ALL	Not Done	
Alpha 002	21f	ALL	Not Done	
Alpha 003	21f	ALL	Passed	10/21/2015 5:31:56 AM
Alpha 004	21f	ALL	Passed	10/21/2015 5:31:56 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	10/21/2015 5:31:57 AM
Alpha 011	21f	ALL	Passed	10/21/2015 5:31:58 AM
Alpha 012	21f	ALL	Passed	10/21/2015 5:31:59 AM
Alpha 013	21f	ALL	Not Done	
Alpha 014	21f	ALL	Passed	10/21/2015 5:32:00 AM
Alpha 015	21f	ALL	Passed	10/21/2015 5:32:01 AM
Alpha 016	21f	ALL	Not Done	
Alpha 033	Alpha Analyst100DC	ALL	Passed	10/21/2015 5:32:02 AM
Alpha 034	Alpha Analyst100DC	ALL	Passed	10/21/2015 5:32:03 AM
Alpha 035	Alpha Analyst100DC	ALL	Passed	10/21/2015 5:32:05 AM
Alpha 036	Alpha Analyst100DC	ALL	Passed	10/21/2015 5:32:06 AM
Alpha 037	Alpha Analyst100DC	ALL	Passed	10/21/2015 5:32:08 AM
Alpha 038	Alpha Analyst100DC	Peak Energy <i>OK</i>	Action	10/21/2015 5:32:09 AM
Alpha 039	Alpha Analyst100DC	ALL	Passed	10/21/2015 5:32:11 AM
Alpha 040	Alpha Analyst100DC	ALL	Passed	10/21/2015 5:32:12 AM
Alpha 041	Alpha Analyst100DC	ALL	Passed	10/21/2015 5:32:14 AM
Alpha 042	Alpha Analyst100DC	ALL	Passed	10/21/2015 5:32:16 AM
Alpha 043	Alpha Analyst100DC	ALL	Passed	10/21/2015 5:32:17 AM
Alpha 044	Alpha Analyst100DC	ALL	Passed	10/21/2015 5:32:19 AM
Alpha 045	Alpha Analyst100DC	ALL	Passed	10/21/2015 5:32:21 AM
Alpha 046	Alpha Analyst100DC	ALL	Passed	10/21/2015 5:32:22 AM
Alpha 047	Alpha Analyst100DC	ALL	Passed	10/21/2015 5:32:24 AM
Alpha 048	Alpha Analyst100DC	ALL	Passed	10/21/2015 5:32:26 AM
Alpha 049	Alpha Analyst100DC	ALL	Passed	10/21/2015 5:32:28 AM
Alpha 050	Alpha Analyst100DC	ALL	Passed	10/21/2015 5:32:30 AM
Alpha 051	Alpha Analyst100DC	ALL	Passed	10/21/2015 5:32:31 AM
Alpha 052	Alpha Analyst100DC	ALL	Passed	10/21/2015 5:32:33 AM
Alpha 053	Alpha Analyst100DC	ALL	Passed	10/21/2015 5:32:34 AM
Alpha 054	Alpha Analyst100DC	ALL	Passed	10/21/2015 5:32:36 AM
Alpha 055	Alpha Analyst100DC	ALL	Passed	10/21/2015 5:32:38 AM
Alpha 056	Alpha Analyst100DC	ALL	Passed	10/21/2015 5:32:40 AM
Alpha 057	Alpha Analyst100DC	ALL	Passed	10/21/2015 5:32:42 AM
Alpha 058	Alpha Analyst100DC	ALL	Passed	10/21/2015 5:32:43 AM

CHAMBER	DEVICE	PARAMETER	FLAG	DATE
Alpha_059	Alpha Analyst100DC	ALL	Passed	10/21/2015 5:32:45 AM
Alpha_060	Alpha Analyst100DC	ALL	Passed	10/21/2015 5:32:47 AM

APPROVED BY: _____

APPROVAL DATE: 10/21

0236A

***** 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	15-10064
Analysis Code	Gamma
Run	1
Date Received	10/12/2015
Lab Deadline	11/3/2015
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		10/12/15 00:00	1.0000E+00
02	MBL	BLANK		10/12/15 00:00	1.0000E+00
03	DUP	CP5005S14-15	36	10/06/15 09:50	5.0695E+02
04	DO	CP5005S14-15	36	10/06/15 09:50	5.0695E+02
05	TRG	CP5005S16-17 5	35	10/06/15 10:00	5.2498E+02
06	TRG	CP2211S01-02	32	10/06/15 10:20	6.1284E+02
07	TRG	CP2211S04-05	34	10/06/15 10:40	5.8959E+02
08	TRG	CP2211S06-07	36	10/06/15 10:50	6.0979E+02
09	TRG	CP2211S11-12	35	10/06/15 11:10	5.9390E+02
10	TRG	CP2211S13-14	34	10/06/15 11:20	6.0144E+02
11	TRG	CP2211S16-17	38	10/06/15 11:30	4.4090E+02
12	TRG	CP2211S18-19	34	10/06/15 11:40	4.8566E+02
13	TRG	CP2211S21-22	37	10/06/15 11:50	5.4047E+02

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

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

* 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.

00240

Internal Fraction	Sample Desc	Rough Prep Date	Rough Prep By	Prep Date	Prep By	Sep 10 Date/Time	Sep 10 By	Sep 11 Date/Time	Sep 11 By
01	LCS								
02	MBL								
03	DUP								
04	DO	10/13/15 08:51	KSALLINGS						
05	TRG	10/13/15 08:51	KSALLINGS						
06	TRG	10/13/15 08:51	KSALLINGS						
07	TRG	10/13/15 08:51	KSALLINGS						
08	TRG	10/13/15 08:51	KSALLINGS						
09	TRG	10/13/15 08:51	KSALLINGS						
10	TRG	10/13/15 08:51	KSALLINGS						
11	TRG	10/13/15 08:51	KSALLINGS						
12	TRG	10/13/15 08:51	KSALLINGS						
13	TRG	10/13/15 08:51	KSALLINGS						

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

Preliminary Data Report & Analytical Calculations
Work Order: 15-10064-Gamma-1

Lab Fraction	Nuclide	Sample Desc	Client Identification	Activity Units	Results	Error Estimate	MDA	LSC Known	LCS %R	LCS Flag	RPD Flag	Sample Date	Sample Aliquot	Counting Date/Time	Identified
01	CO-60	LCS	LCS	pCi/g	1.35E+02	9.33E+00	1.62E+00	1.37E+02	98.22	OK		10/12/15 00:00	1.00E+00	11/02/15 08:56	YES
01	CS-137	LCS	LCS	pCi/g	8.27E+01	7.94E+00	1.72E+00	8.69E+01	95.17	OK		10/12/15 00:00	1.00E+00	11/02/15 08:56	YES
02	AC-228	MBL	BLANK	pCi/g	4.83E-02	1.60E-01	2.90E-01					10/12/15 00:00	1.00E+00	11/02/15 07:16	NO
02	BI-214	MBL	BLANK	pCi/g	-1.55E-02	8.46E-02	1.34E-01					10/12/15 00:00	1.00E+00	11/02/15 07:16	NO
02	K-40	MBL	BLANK	pCi/g	0.00E+00	0.00E+00	6.99E-01					10/12/15 00:00	1.00E+00	11/02/15 07:16	NO
02	PB-212	MBL	BLANK	pCi/g	3.76E-02	6.16E-02	1.04E-01					10/12/15 00:00	1.00E+00	11/02/15 07:16	NO
02	PB-214	MBL	BLANK	pCi/g	9.59E-02	8.38E-02	1.53E-01					10/12/15 00:00	1.00E+00	11/02/15 07:16	NO
02	RA-226	MBL	BLANK	pCi/g	-1.55E-02	8.46E-02	1.34E-01					10/12/15 00:00	1.00E+00	11/02/15 07:16	NO
02	RA-228	MBL	BLANK	pCi/g	4.83E-02	1.60E-01	2.90E-01					10/12/15 00:00	1.00E+00	11/02/15 07:16	NO
02	TH-234	MBL	BLANK	pCi/g	3.37E-01	4.03E-01	6.67E-01					10/12/15 00:00	1.00E+00	11/02/15 07:16	NO
02	TL-208	MBL	BLANK	pCi/g	-3.71E-02	1.14E-01	1.80E-01					10/12/15 00:00	1.00E+00	11/02/15 07:16	NO
03	AC-228	DUP	CP5005S14-15	pCi/g	1.09E+00	5.05E-01	1.23E+00				OK	10/06/15 09:50	5.07E+02	11/03/15 10:18	YES
03	BI-214	DUP	CP5005S14-15	pCi/g	1.60E+00	3.66E-01	5.37E-01				OK	10/06/15 09:50	5.07E+02	11/03/15 10:18	YES
03	K-40	DUP	CP5005S14-15	pCi/g	2.38E+01	3.91E+00	1.55E+00				OK	10/06/15 09:50	5.07E+02	11/03/15 10:18	YES
03	PB-212	DUP	CP5005S14-15	pCi/g	1.75E+00	3.71E-01	4.89E-01					10/06/15 09:50	5.07E+02	11/03/15 10:18	YES
03	PB-214	DUP	CP5005S14-15	pCi/g	1.49E+00	3.22E-01	5.71E-01					10/06/15 09:50	5.07E+02	11/03/15 10:18	YES
03	RA-226	DUP	CP5005S14-15	pCi/g	1.60E+00	3.66E-01	5.87E-01					10/06/15 09:50	5.07E+02	11/03/15 10:18	YES
03	RA-228	DUP	CP5005S14-15	pCi/g	1.09E+00	5.05E-01	1.23E+00					10/06/15 09:50	5.07E+02	11/03/15 10:18	YES
03	TH-234	DUP	CP5005S14-15	pCi/g	1.67E+00	1.57E+00	2.46E+00					10/06/15 09:50	5.07E+02	11/03/15 10:18	NO
03	TL-208	DUP	CP5005S14-15	pCi/g	1.36E+00	3.51E-01	2.58E-01					10/06/15 09:50	5.07E+02	11/03/15 10:18	YES
04	AC-228	DO	CP5005S14-15	pCi/g	1.46E+00	6.03E-01	1.25E+00					10/06/15 09:50	5.07E+02	11/03/15 11:27	YES
04	BI-214	DO	CP5005S14-15	pCi/g	1.71E+00	3.00E-01	3.04E-01					10/06/15 09:50	5.07E+02	11/03/15 11:27	YES
04	K-40	DO	CP5005S14-15	pCi/g	1.93E+01	3.46E+00	2.09E+00					10/06/15 09:50	5.07E+02	11/03/15 11:27	YES
04	PB-212	DO	CP5005S14-15	pCi/g	1.93E+00	3.81E-01	4.82E-01					10/06/15 09:50	5.07E+02	11/03/15 11:27	YES
04	PB-214	DO	CP5005S14-15	pCi/g	1.61E+00	3.26E-01	4.58E-01					10/06/15 09:50	5.07E+02	11/03/15 11:27	YES
04	RA-226	DO	CP5005S14-15	pCi/g	1.71E+00	3.00E-01	3.04E-01					10/06/15 09:50	5.07E+02	11/03/15 11:27	YES
04	RA-228	DO	CP5005S14-15	pCi/g	1.46E+00	6.03E-01	1.25E+00					10/06/15 09:50	5.07E+02	11/03/15 11:27	YES
04	TH-234	DO	CP5005S14-15	pCi/g	7.70E-01	1.51E+00	2.47E+00					10/06/15 09:50	5.07E+02	11/03/15 11:27	NO
04	TL-208	DO	CP5005S14-15	pCi/g	1.30E+00	3.28E-01	5.03E-01					10/06/15 09:50	5.07E+02	11/03/15 11:27	YES
05	AC-228	TRG	CP5005S16-17 5	pCi/g	1.46E+00	2.34E-01	4.59E-01					10/06/15 10:00	5.25E+02	11/03/15 11:27	YES
05	BI-214	TRG	CP5005S16-17 5	pCi/g	1.40E+00	2.01E-01	2.43E-01					10/06/15 10:00	5.25E+02	11/03/15 11:27	YES
05	K-40	TRG	CP5005S16-17 5	pCi/g	2.23E+01	2.48E+00	8.66E-01					10/06/15 10:00	5.25E+02	11/03/15 11:27	YES
05	PB-212	TRG	CP5005S16-17 5	pCi/g	1.58E+00	1.84E-01	2.50E-01					10/06/15 10:00	5.25E+02	11/03/15 11:27	YES
05	PB-214	TRG	CP5005S16-17 5	pCi/g	1.54E+00	1.66E-01	2.29E-01					10/06/15 10:00	5.25E+02	11/03/15 11:27	YES
05	RA-226	TRG	CP5005S16-17 5	pCi/g	1.40E+00	2.01E-01	2.43E-01					10/06/15 10:00	5.25E+02	11/03/15 11:27	YES
05	RA-228	TRG	CP5005S16-17 5	pCi/g	1.46E+00	2.34E-01	4.59E-01					10/06/15 10:00	5.25E+02	11/03/15 11:27	YES
05	TH-234	TRG	CP5005S16-17 5	pCi/g	2.01E+00	1.87E+00	3.11E+00					10/06/15 10:00	5.25E+02	11/03/15 11:27	YES
05	TL-208	TRG	CP5005S16-17 5	pCi/g	1.34E+00	1.89E-01	9.78E-02					10/06/15 10:00	5.25E+02	11/03/15 11:27	YES

Preliminary Data Report & Analytical Calculations
Work Order: 15-10064-Gamma-1

Lab Fraction	Nuclide	Sample Desc	Client Identification	Activity Units	Results	Error Estimate	MDA	LSC Known	LCS %R	LCS Flag	RPD Flag	Sample Date	Sample Aliquot	Counting Date/Time	Identified
06	AC-228	TRG	CP2211S01-02	pCi/g	8.34E-01	2.28E-01	3.68E-01					10/06/15 10:20	6.13E+02	11/03/15 11:27	YES
06	BI-214	TRG	CP2211S01-02	pCi/g	2.20E+00	2.08E-01	1.93E-01					10/06/15 10:20	6.13E+02	11/03/15 11:27	YES
06	K-40	TRG	CP2211S01-02	pCi/g	1.34E+01	1.86E+00	1.08E+00					10/06/15 10:20	6.13E+02	11/03/15 11:27	YES
06	PB-212	TRG	CP2211S01-02	pCi/g	9.62E-01	1.40E-01	2.03E-01					10/06/15 10:20	6.13E+02	11/03/15 11:27	YES
06	PB-214	TRG	CP2211S01-02	pCi/g	2.41E+00	2.22E-01	2.07E-01					10/06/15 10:20	6.13E+02	11/03/15 11:27	YES
06	RA-226	TRG	CP2211S01-02	pCi/g	2.20E+00	2.08E-01	1.93E-01					10/06/15 10:20	6.13E+02	11/03/15 11:27	YES
06	RA-228	TRG	CP2211S01-02	pCi/g	8.34E-01	2.28E-01	3.68E-01					10/06/15 10:20	6.13E+02	11/03/15 11:27	YES
06	TH-234	TRG	CP2211S01-02	pCi/g	1.93E+00	1.39E+00	2.30E+00					10/06/15 10:20	6.13E+02	11/03/15 11:27	YES
06	TL-208	TRG	CP2211S01-02	pCi/g	7.34E-01	1.35E-01	1.76E-01					10/06/15 10:20	6.13E+02	11/03/15 11:27	YES
07	AC-228	TRG	CP2211S04-05	pCi/g	1.40E+00	3.10E-01	5.47E-01					10/06/15 10:40	5.90E+02	11/03/15 11:27	YES
07	BI-214	TRG	CP2211S04-05	pCi/g	1.40E+00	2.13E-01	3.06E-01					10/06/15 10:40	5.90E+02	11/03/15 11:27	YES
07	K-40	TRG	CP2211S04-05	pCi/g	1.85E+01	2.29E+00	9.61E-01					10/06/15 10:40	5.90E+02	11/03/15 11:27	YES
07	PB-212	TRG	CP2211S04-05	pCi/g	1.63E+00	1.84E-01	3.04E-01					10/06/15 10:40	5.90E+02	11/03/15 11:27	YES
07	PB-214	TRG	CP2211S04-05	pCi/g	1.56E+00	2.20E-01	3.01E-01					10/06/15 10:40	5.90E+02	11/03/15 11:27	YES
07	RA-226	TRG	CP2211S04-05	pCi/g	1.40E+00	2.13E-01	3.06E-01					10/06/15 10:40	5.90E+02	11/03/15 11:27	YES
07	RA-228	TRG	CP2211S04-05	pCi/g	1.40E+00	3.10E-01	5.47E-01					10/06/15 10:40	5.90E+02	11/03/15 11:27	YES
07	TH-234	TRG	CP2211S04-05	pCi/g	1.65E+00	1.48E+00	2.46E+00					10/06/15 10:40	5.90E+02	11/03/15 11:27	YES
07	TL-208	TRG	CP2211S04-05	pCi/g	1.26E+00	2.26E-01	1.85E-01					10/06/15 10:40	5.90E+02	11/03/15 11:27	YES
08	AC-228	TRG	CP2211S06-07	pCi/g	1.34E+00	2.06E-01	3.89E-01					10/06/15 10:50	6.10E+02	11/03/15 12:29	YES
08	BI-214	TRG	CP2211S06-07	pCi/g	1.32E+00	1.61E-01	1.86E-01					10/06/15 10:50	6.10E+02	11/03/15 12:29	YES
08	K-40	TRG	CP2211S06-07	pCi/g	1.93E+01	2.19E+00	1.04E+00					10/06/15 10:50	6.10E+02	11/03/15 12:29	YES
08	PB-212	TRG	CP2211S06-07	pCi/g	1.53E+00	1.68E-01	2.12E-01					10/06/15 10:50	6.10E+02	11/03/15 12:29	YES
08	PB-214	TRG	CP2211S06-07	pCi/g	1.52E+00	1.57E-01	2.25E-01					10/06/15 10:50	6.10E+02	11/03/15 12:29	YES
08	RA-226	TRG	CP2211S06-07	pCi/g	1.32E+00	1.61E-01	1.86E-01					10/06/15 10:50	6.10E+02	11/03/15 12:29	YES
08	RA-228	TRG	CP2211S06-07	pCi/g	1.34E+00	2.06E-01	3.89E-01					10/06/15 10:50	6.10E+02	11/03/15 12:29	YES
08	TH-234	TRG	CP2211S06-07	pCi/g	2.15E+00	1.38E+00	2.28E+00					10/06/15 10:50	6.10E+02	11/03/15 12:29	YES
08	TL-208	TRG	CP2211S06-07	pCi/g	1.18E+00	1.56E-01	1.29E-01					10/06/15 10:50	6.10E+02	11/03/15 12:29	YES
09	AC-228	TRG	CP2211S11-12	pCi/g	1.44E+00	1.94E-01	4.07E-01					10/06/15 11:10	5.94E+02	11/03/15 12:29	YES
09	BI-214	TRG	CP2211S11-12	pCi/g	1.30E+00	1.68E-01	2.18E-01					10/06/15 11:10	5.94E+02	11/03/15 12:29	YES
09	K-40	TRG	CP2211S11-12	pCi/g	1.96E+01	2.48E+00	9.73E-01					10/06/15 11:10	5.94E+02	11/03/15 12:29	YES
09	PB-212	TRG	CP2211S11-12	pCi/g	1.29E+00	1.61E-01	2.27E-01					10/06/15 11:10	5.94E+02	11/03/15 12:29	YES
09	PB-214	TRG	CP2211S11-12	pCi/g	1.51E+00	1.71E-01	1.99E-01					10/06/15 11:10	5.94E+02	11/03/15 12:29	YES
09	RA-226	TRG	CP2211S11-12	pCi/g	1.30E+00	1.68E-01	2.18E-01					10/06/15 11:10	5.94E+02	11/03/15 12:29	YES
09	RA-228	TRG	CP2211S11-12	pCi/g	1.44E+00	1.94E-01	4.07E-01					10/06/15 11:10	5.94E+02	11/03/15 12:29	YES
09	TH-234	TRG	CP2211S11-12	pCi/g	2.25E+00	8.92E-01	1.48E+00					10/06/15 11:10	5.94E+02	11/03/15 12:29	NO
09	TL-208	TRG	CP2211S11-12	pCi/g	1.03E+00	1.59E-01	1.67E-01					10/06/15 11:10	5.94E+02	11/03/15 12:29	YES
10	AC-228	TRG	CP2211S13-14	pCi/g	1.54E+00	2.42E-01	5.16E-01					10/06/15 11:20	6.01E+02	11/03/15 12:30	YES
10	BI-214	TRG	CP2211S13-14	pCi/g	1.17E+00	1.70E-01	4.04E-01					10/06/15 11:20	6.01E+02	11/03/15 12:30	YES

06243

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
10	K-40	TRG	CP2211S13-14	pCi/g	1.84E+01	2.35E+00	1.50E+00					10/06/15 11:20	6.01E+02	11/03/15 12:30	YES
10	PB-212	TRG	CP2211S13-14	pCi/g	1.49E+00	1.70E-01	2.47E-01					10/06/15 11:20	6.01E+02	11/03/15 12:30	YES
10	PB-214	TRG	CP2211S13-14	pCi/g	1.12E+00	1.77E-01	2.50E-01					10/06/15 11:20	6.01E+02	11/03/15 12:30	YES
10	RA-226	TRG	CP2211S13-14	pCi/g	1.17E+00	1.70E-01	4.04E-01					10/06/15 11:20	6.01E+02	11/03/15 12:30	YES
10	RA-228	TRG	CP2211S13-14	pCi/g	1.54E+00	2.42E-01	5.16E-01					10/06/15 11:20	6.01E+02	11/03/15 12:30	YES
10	TH-234	TRG	CP2211S13-14	pCi/g	1.47E+00	1.77E+00	2.96E+00					10/06/15 11:20	6.01E+02	11/03/15 12:30	YES
10	TL-208	TRG	CP2211S13-14	pCi/g	1.12E+00	2.16E-01	2.56E-01					10/06/15 11:30	4.41E+02	11/03/15 12:30	YES
11	AC-228	TRG	CP2211S16-17	pCi/g	1.85E+00	5.56E-01	1.61E+00					10/06/15 11:30	4.41E+02	11/03/15 12:30	YES
11	BI-214	TRG	CP2211S16-17	pCi/g	1.47E+00	3.40E-01	5.23E-01					10/06/15 11:30	4.41E+02	11/03/15 12:30	YES
11	K-40	TRG	CP2211S16-17	pCi/g	2.33E+01	4.03E+00	1.97E+00					10/06/15 11:30	4.41E+02	11/03/15 12:30	YES
11	PB-212	TRG	CP2211S16-17	pCi/g	2.20E+00	4.49E-01	5.83E-01					10/06/15 11:30	4.41E+02	11/03/15 12:30	YES
11	PB-214	TRG	CP2211S16-17	pCi/g	1.58E+00	3.55E-01	4.72E-01					10/06/15 11:30	4.41E+02	11/03/15 12:30	YES
11	RA-226	TRG	CP2211S16-17	pCi/g	1.47E+00	3.40E-01	5.23E-01					10/06/15 11:30	4.41E+02	11/03/15 12:30	YES
11	RA-228	TRG	CP2211S16-17	pCi/g	1.85E+00	5.56E-01	1.61E+00					10/06/15 11:30	4.41E+02	11/03/15 12:30	YES
11	TH-234	TRG	CP2211S16-17	pCi/g	3.20E-01	1.76E+00	2.69E+00					10/06/15 11:30	4.41E+02	11/03/15 12:30	NO
11	TL-208	TRG	CP2211S16-17	pCi/g	1.46E+00	4.08E-01	6.18E-01					10/06/15 11:40	4.86E+02	11/03/15 13:35	YES
12	AC-228	TRG	CP2211S18-19	pCi/g	1.66E+00	2.36E-01	3.54E-01					10/06/15 11:40	4.86E+02	11/03/15 13:35	YES
12	BI-214	TRG	CP2211S18-19	pCi/g	1.52E+00	1.75E-01	2.01E-01					10/06/15 11:40	4.86E+02	11/03/15 13:35	YES
12	K-40	TRG	CP2211S18-19	pCi/g	2.28E+01	2.54E+00	1.07E+00					10/06/15 11:40	4.86E+02	11/03/15 13:35	YES
12	PB-212	TRG	CP2211S18-19	pCi/g	1.70E+00	1.93E-01	2.96E-01					10/06/15 11:40	4.86E+02	11/03/15 13:35	YES
12	PB-214	TRG	CP2211S18-19	pCi/g	1.78E+00	1.89E-01	2.92E-01					10/06/15 11:40	4.86E+02	11/03/15 13:35	YES
12	RA-226	TRG	CP2211S18-19	pCi/g	1.52E+00	1.75E-01	2.01E-01					10/06/15 11:40	4.86E+02	11/03/15 13:35	YES
12	RA-228	TRG	CP2211S18-19	pCi/g	1.66E+00	2.36E-01	3.54E-01					10/06/15 11:40	4.86E+02	11/03/15 13:35	YES
12	TH-234	TRG	CP2211S18-19	pCi/g	1.71E+00	1.63E+00	2.72E+00					10/06/15 11:40	4.86E+02	11/03/15 13:35	YES
12	TL-208	TRG	CP2211S18-19	pCi/g	1.47E+00	1.94E-01	1.06E-01					10/06/15 11:50	5.40E+02	11/03/15 13:35	YES
13	AC-228	TRG	CP2211S21-22	pCi/g	1.55E+00	2.34E-01	4.29E-01					10/06/15 11:50	5.40E+02	11/03/15 13:35	YES
13	BI-214	TRG	CP2211S21-22	pCi/g	1.39E+00	1.82E-01	2.21E-01					10/06/15 11:50	5.40E+02	11/03/15 13:35	YES
13	K-40	TRG	CP2211S21-22	pCi/g	2.13E+01	2.70E+00	1.09E+00					10/06/15 11:50	5.40E+02	11/03/15 13:35	YES
13	PB-212	TRG	CP2211S21-22	pCi/g	1.49E+00	1.83E-01	2.62E-01					10/06/15 11:50	5.40E+02	11/03/15 13:35	YES
13	PB-214	TRG	CP2211S21-22	pCi/g	1.48E+00	1.66E-01	2.28E-01					10/06/15 11:50	5.40E+02	11/03/15 13:35	YES
13	RA-226	TRG	CP2211S21-22	pCi/g	1.39E+00	1.82E-01	2.21E-01					10/06/15 11:50	5.40E+02	11/03/15 13:35	YES
13	RA-228	TRG	CP2211S21-22	pCi/g	1.55E+00	2.34E-01	4.29E-01					10/06/15 11:50	5.40E+02	11/03/15 13:35	YES
13	TH-234	TRG	CP2211S21-22	pCi/g	1.13E+00	1.28E+00	2.14E+00					10/06/15 11:50	5.40E+02	11/03/15 13:35	YES
13	TL-208	TRG	CP2211S21-22	pCi/g	1.23E+00	1.60E-01	1.15E-01					10/06/15 11:50	5.40E+02	11/03/15 13:35	YES

Count Room Report

Client: Auxier Associates, Inc.

15-10064-Gamma-1 (pCi/g) in SO

Tracer ID:

Handwritten signature: J. G. Johnson

Internal Fraction	Sample Desc	Client ID	Sample Date	Sample Aliquot	Tracer Aliquot (g)	Tracer ACT (dpm)	Radiometric Tracer (pCi)	Radiometric % Rec	SAF 1*	SAF 2*
01	LCS	LCS	10/12/15 00:00	1.0000				0.00		
02	MBL	BLANK	10/12/15 00:00	1.0000				0.00		
03	DUP	CP5005S14-15	10/06/15 09:50	506.9500				0.00		
04	DO	CP5005S14-15	10/06/15 09:50	506.9500				0.00		
05	TRG	CP5005S16-17 5	10/06/15 10:00	524.9800				0.00		
06	TRG	CP2211S01-02	10/06/15 10:20	612.8400				0.00		
07	TRG	CP2211S04-05	10/06/15 10:40	589.5900				0.00		
08	TRG	CP2211S06-07	10/06/15 10:50	609.7900				0.00		
09	TRG	CP2211S11-12	10/06/15 11:10	593.9000				0.00		
10	TRG	CP2211S13-14	10/06/15 11:20	601.4400				0.00		
11	TRG	CP2211S16-17	10/06/15 11:30	440.9000				0.00		
12	TRG	CP2211S18-19	10/06/15 11:40	485.6600				0.00		
13	TRG	CP2211S21-22	10/06/15 11:50	540.4700				0.00		

Handwritten initials: JG

Aliquot Worksheet

Work Order	Run	Analysis Code	Rpt Units	Lab Deadline	Technician
15-10064	1	Gamma	grams	11/3/2015	KSALLINGS

Lab Fraction	Auxler & Associates, Inc. Client ID	Sample Type	Muffle Data		Dilution Data			Aliquot Data		MS Aliquot Data		H-3 Solids Only	
			Ratio Post/Pre	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						1.0000E+00	1.0000E+00				
03	CP5005S14-15	DUP						5.0695E+02	5.0695E+02				
04	CP5005S14-15	DO						5.0695E+02	5.0695E+02				
05	CP5005S16-17 5	TRG						5.2498E+02	5.2498E+02				
06	CP2011S01-02	TRG						6.1284E+02	6.1284E+02				
07	CP2011S04-05	TRG						5.8959E+02	5.8959E+02				
08	CP2011S06-07	TRG						6.0979E+02	6.0979E+02				
09	CP2011S11-12	TRG						5.9390E+02	5.9390E+02				
10	CP2011S13-14	TRG						6.0144E+02	6.0144E+02				
11	CP2011S16-17	TRG						4.4090E+02	4.4090E+02				
12	CP2011S18-19	TRG						4.8566E+02	4.8566E+02				
13	CP2011S21-22	TRG						5.4047E+02	5.4047E+02				
	<i>2 reports</i>												
	<i>[Signature]</i>												

Comments

Technician: Kenny Seay Date: 10/13/15

**Rough Sample Preparation
 Log Book**

Work Order	Lab Deadline	Date Received in Prep	Date Sealed	Date Returned	Technician
15-10064	11/3/2015	10/12/2015	10/13/2015	10/14/2015	KSALLINGS

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	CP5005S14-15	14.5400	579.5100	744.8100	579.5100	730.2700	564.9700	22.64%	77.36%			
05	CP5005S16-17 5	14.4700	600.0800	773.6400	600.0800	759.1700	585.6100	22.86%	77.14%			
06	CP2011S01-02	14.4800	870.1800	1015.4200	870.1800	1000.9400	855.7000	14.51%	85.49%			
07	CP2011S04-05	14.5200	838.5600	1059.7800	838.5600	1045.2600	824.0400	21.16%	78.84%			
08	CP2011S06-07	14.5300	780.3800	968.3000	780.3800	953.7700	765.8500	19.70%	80.30%			
09	CP2011S11-12	14.4900	807.9800	1014.0000	807.9800	999.5100	793.4900	20.61%	79.39%			
10	CP2011S13-14	14.4700	744.3700	914.1000	744.3700	899.6300	729.9000	18.87%	81.13%			
11	CP2011S16-17	14.4800	509.0100	650.2700	509.0100	635.7900	494.5300	22.22%	77.78%			
12	CP2011S18-19	14.4900	554.9000	722.1900	554.9000	707.7000	540.4100	23.64%	76.36%			
13	CP2011S21-22	14.5500	717.8000	919.5800	717.8000	905.0300	703.2500	22.30%	77.70%			

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

00247

CERTIFICATE OF CALIBRATION
Standard Radionuclide Source

GAS-1302

94268

Sand in 16 Ounce PP Taral Jar Filled to Top

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

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

Nuclide	Gamma-Ray Energy (keV)	Half-Life, Days	Master Source* γ ps/gram	This Source γ ps	Uncertainty*, %			Calibration Method*
					u_A	u_B	U	
Am-241	59.5	1.580E+05	—	2.094E+03	0.1	1.7	3.5	4 π LS
Cd-109	88.0	4.626E+02	1.641E+05	2.952E+03	0.5	2.3	4.7	HPGe
Co-57	122.1	2.718E+02	8.866E+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: 4 π LS - 4 pi Liquid Scintillation Counting, HPGe - High Purity Germanium Gamma-Ray Spectrometer, IC - Ionization Chamber. **Uncertainty:** U - Relative expanded uncertainty, k = 2. See NIST Technical Note 1297, "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results."

(Certificate continued on reverse side)



Analysis Report for 1510064-01
GAS-1302



GAMMA SPECTRUM ANALYSIS

Sample Identification : 1510064-01
Sample Description : GAS-1302
Sample Type : SOIL

Sample Size : 7.360E+02 grams
Facility : Countroom

Sample Taken On : 7/1/2013 6:42:21AM
Acquisition Started : 11/2/2015 8:56:54AM

Procedure : GAS-1402 pCi
Operator : Administrator
Detector Name : GE4
Geometry : GAS-1402
Live Time : 1800.0 seconds
Real Time : 1839.9 seconds

Dead Time : 2.17 %

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 : 28964

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
11/3/15

Analysis Report for 1510064-01

GAS-1302

PEAK LOCATE REPORT

Peak Locate Performed on : 11/2/2015 9:27:37AM
 Peak Locate From Channel : 1
 Peak Locate To Channel : 4096
 Peak Search Sensitivity : 2.50

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
1	22.34	21.59	0.0000	0.00
2	31.98	31.23	0.0000	0.00
3	53.81	53.07	0.0000	0.00
4	59.38	58.64	0.0000	0.00
5	67.46	66.72	0.0000	0.00
6	87.75	87.02	0.0000	0.00
7	122.02	121.31	0.0000	0.00
8	136.42	135.71	0.0000	0.00
9	165.79	165.10	0.0000	0.00
10	277.11	276.46	0.0000	0.00
11	391.71	391.11	0.0000	0.00
12	438.30	437.73	0.0000	0.00
13	532.17	531.64	0.0000	0.00
14	661.64	661.17	0.0000	0.00
15	797.12	796.72	0.0000	0.00
16	897.84	897.49	0.0000	0.00
17	911.52	911.18	0.0000	0.00
18	1012.90	1012.62	0.0000	0.00
19	1106.42	1106.18	0.0000	0.00
20	1144.15	1143.94	0.0000	0.00
21	1173.26	1173.07	0.0000	0.00
22	1332.49	1332.39	0.0000	0.00
23	1399.23	1399.17	0.0000	0.00
24	1410.41	1410.35	0.0000	0.00
25	1577.42	1577.46	0.0000	0.00
26	1707.70	1707.83	0.0000	0.00
27	1765.55	1765.72	0.0000	0.00
28	1835.94	1836.15	0.0000	0.00
29	1860.07	1860.30	0.0000	0.00
30	1883.92	1884.16	0.0000	0.00
31	1890.94	1891.19	0.0000	0.00
32	2081.77	2082.15	0.0000	0.00
33	2124.84	2125.25	0.0000	0.00
34	2505.61	2506.30	0.0000	0.00

? = Adjacent peak noted

Errors quoted at 2.000sigma

Analysis Report for 1510064-01

GAS-1302

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/2/2015 9:27:37AM

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

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
1	22.34	19 -	25	21.59	7.27E+04	781.85	5.92E+04	2.57
2	31.98	29 -	34	31.23	1.30E+03	234.98	1.01E+04	2.52
M 3	53.81	43 -	62	53.07	1.80E+04	1001.88	5.84E+04	6.63
m 4	59.38	43 -	62	58.64	5.57E+04	601.54	1.89E+04	2.36
5	67.46	64 -	70	66.72	5.84E+02	336.45	2.03E+04	1.98
6	87.75	80 -	93	87.02	2.60E+04	633.21	3.23E+04	2.44
7	122.02	117 -	126	121.31	5.02E+03	355.27	1.50E+04	2.48
8	136.42	132 -	140	135.71	6.95E+02	284.58	1.20E+04	2.76
9	165.79	162 -	169	165.10	6.78E+02	245.76	9.61E+03	2.32
10	277.11	273 -	280	276.46	2.27E+02	194.33	6.13E+03	4.17
11	391.71	388 -	394	391.11	1.56E+02	156.08	4.32E+03	2.72
12	438.30	435 -	441	437.73	1.29E+02	156.30	4.33E+03	3.76
13	532.17	529 -	534	531.64	1.09E+02	108.88	2.26E+03	2.72
14	661.64	656 -	665	661.17	1.17E+04	261.03	3.06E+03	2.67
15	797.12	794 -	799	796.72	1.05E+02	95.08	1.72E+03	2.97
16	897.84	894 -	901	897.49	1.72E+02	131.70	2.78E+03	2.28
17	911.52	909 -	915	911.18	1.23E+02	120.12	2.55E+03	2.76
18	1012.90	1008 -	1016	1012.62	1.61E+02	127.58	2.40E+03	5.04
19	1106.42	1103 -	1110	1106.18	1.28E+02	114.56	2.08E+03	1.63
20	1144.15	1141 -	1148	1143.94	7.37E+01	85.35	1.16E+03	3.51
21	1173.26	1166 -	1179	1173.07	9.83E+03	238.93	1.97E+03	2.85
22	1332.49	1324 -	1339	1332.39	9.10E+03	201.09	4.10E+02	2.81
23	1399.23	1395 -	1405	1399.17	2.15E+01	22.24	5.29E+01	3.93
24	1410.41	1405 -	1415	1410.35	3.65E+01	20.78	3.70E+01	7.84
25	1577.42	1571 -	1584	1577.46	3.70E+01	25.53	5.60E+01	3.39
26	1707.70	1695 -	1719	1707.83	2.60E+01	31.77	6.20E+01	18.94
27	1765.55	1762 -	1771	1765.72	1.21E+01	15.00	2.58E+01	2.48
M 28	1835.94	1829 -	1864	1836.15	7.23E+01	22.29	2.65E+01	3.31
m 29	1860.07	1829 -	1864	1860.30	9.40E+00	14.59	2.07E+01	3.32
M 30	1883.92	1882 -	1897	1884.16	9.13E+00	5.89	5.67E+00	3.13
m 31	1890.94	1882 -	1897	1891.19	1.29E+01	16.09	1.87E+01	5.88
32	2081.77	2078 -	2086	2082.15	1.53E+01	10.98	9.30E+00	2.02
33	2124.84	2119 -	2129	2125.25	1.01E+01	9.07	5.77E+00	3.35
34	2505.61	2502 -	2510	2506.30	2.95E+01	13.29	9.00E+00	2.74

Analysis Report for 1510064-01

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 : 11/2/2015 9:27:37AM

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

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	1	22.34	19 - 25	7.27E+04	781.85	5.92E+04	4.65E+02
	2	31.98	29 - 34	1.30E+03	234.98	1.01E+04	1.84E+02
M	3	53.81	43 - 62	1.80E+04	1001.88	5.84E+04	3.97E+02
m	4	59.38	43 - 62	5.57E+04	601.54	1.89E+04	2.26E+02
	5	67.46	64 - 70	5.84E+02	336.45	2.03E+04	2.74E+02
	6	87.75	80 - 93	2.60E+04	633.21	3.23E+04	4.48E+02
	7	122.02	117 - 126	5.02E+03	355.27	1.50E+04	2.68E+02
	8	136.42	132 - 140	6.95E+02	284.58	1.20E+04	2.30E+02
	9	165.79	162 - 169	6.78E+02	245.76	9.61E+03	1.97E+02
	10	277.11	273 - 280	2.27E+02	194.33	6.13E+03	1.58E+02
	11	391.71	388 - 394	1.56E+02	156.08	4.32E+03	1.27E+02
	12	438.30	435 - 441	1.29E+02	156.30	4.33E+03	1.27E+02
	13	532.17	529 - 534	1.09E+02	108.88	2.26E+03	8.78E+01
	14	661.64	656 - 665	1.17E+04	261.03	3.06E+03	1.20E+02
	15	797.12	794 - 799	1.05E+02	95.08	1.72E+03	7.63E+01
	16	897.84	894 - 901	1.72E+02	131.70	2.78E+03	1.06E+02
	17	911.52	909 - 915	1.23E+02	120.12	2.55E+03	9.70E+01
	18	1012.90	1008 - 1016	1.61E+02	127.58	2.40E+03	1.03E+02
	19	1106.42	1103 - 1110	1.28E+02	114.56	2.08E+03	9.23E+01
	20	1144.15	1141 - 1148	7.37E+01	85.35	1.16E+03	6.87E+01
	21	1173.26	1166 - 1179	9.83E+03	238.93	1.97E+03	1.10E+02
	22	1332.49	1324 - 1339	9.10E+03	201.09	4.10E+02	5.21E+01
	23	1399.23	1395 - 1405	2.15E+01	22.24	5.29E+01	1.66E+01
	24	1410.41	1405 - 1415	3.65E+01	20.78	3.70E+01	1.39E+01
	25	1577.42	1571 - 1584	3.70E+01	25.53	5.60E+01	1.85E+01
	26	1707.70	1695 - 1719	2.60E+01	31.77	6.20E+01	2.47E+01
	27	1765.55	1762 - 1771	1.21E+01	15.00	2.58E+01	1.09E+01
M	28	1835.94	1829 - 1864	7.23E+01	22.29	2.65E+01	8.47E+00
m	29	1860.07	1829 - 1864	9.40E+00	14.59	2.07E+01	7.48E+00
M	30	1883.92	1882 - 1897	9.13E+00	5.89	5.67E+00	3.91E+00
m	31	1890.94	1882 - 1897	1.29E+01	16.09	1.87E+01	7.10E+00

Analysis Report for 1510064-01
GAS-1302

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
32	2081.77	2078 -	2086	1.53E+01	10.98	9.30E+00	6.32E+00
33	2124.84	2119 -	2129	1.01E+01	9.07	5.77E+00	5.31E+00
34	2505.61	2502 -	2510	2.95E+01	13.29	9.00E+00	6.29E+00

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

PEAK WITH NID REPORT

Peak Analysis Performed on : 11/2/2015 9:27:37AM

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

Tentative NID Library : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB
Peak Match Tolerance : 1.000 keV

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
1	22.34	19 -	25	21.59	7.27E+04	781.85	5.92E+04	.....
2	31.98	29 -	34	31.23	1.30E+03	234.98	1.01E+04	.....
M	3	43 -	62	53.07	1.80E+04	1001.88	5.84E+04	.....
m	4	43 -	62	58.64	5.57E+04	601.54	1.89E+04	AM-241
5	67.46	64 -	70	66.72	5.84E+02	336.45	2.03E+04	TH-230 TA-182 TI-44 TM-171
6	87.75	80 -	93	87.02	2.60E+04	633.21	3.23E+04	SN-126 CD-109 LU-176
7	122.02	117 -	126	121.31	5.02E+03	355.27	1.50E+04	CO-57 EU-152 SE-75
8	136.42	132 -	140	135.71	6.95E+02	284.58	1.20E+04	CO-57 SE-75
9	165.79	162 -	169	165.10	6.78E+02	245.76	9.61E+03	CE-139
10	277.11	273 -	280	276.46	2.27E+02	194.33	6.13E+03	CM-243 NP-239
11	391.71	388 -	394	391.11	1.56E+02	156.08	4.32E+03	SN-113
12	438.30	435 -	441	437.73	1.29E+02	156.30	4.33E+03	BA-140
13	532.17	529 -	534	531.64	1.09E+02	108.88	2.26E+03	.....
14	661.64	656 -	665	661.17	1.17E+04	261.03	3.06E+03	CS-137

Analysis Report for 1510064-01

GAS-1302

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
15	797.12	794 -	799	796.72	1.05E+02	95.08	1.72E+03	.....
16	897.84	894 -	901	897.49	1.72E+02	131.70	2.78E+03	Y-88
17	911.52	909 -	915	911.18	1.23E+02	120.12	2.55E+03	AC-228 LU-172
18	1012.90	1008 -	1016	1012.62	1.61E+02	127.58	2.40E+03	.....
19	1106.42	1103 -	1110	1106.18	1.28E+02	114.56	2.08E+03	.....
20	1144.15	1141 -	1148	1143.94	7.37E+01	85.35	1.16E+03	.....
21	1173.26	1166 -	1179	1173.07	9.83E+03	238.93	1.97E+03	CO-60
22	1332.49	1324 -	1339	1332.39	9.10E+03	201.09	4.10E+02	CO-60
23	1399.23	1395 -	1405	1399.17	2.15E+01	22.24	5.29E+01	.....
24	1410.41	1405 -	1415	1410.35	3.65E+01	20.78	3.70E+01	.....
25	1577.42	1571 -	1584	1577.46	3.70E+01	25.53	5.60E+01	.....
26	1707.70	1695 -	1719	1707.83	2.60E+01	31.77	6.20E+01	.....
27	1765.55	1762 -	1771	1765.72	1.21E+01	15.00	2.58E+01	.....
M 28	1835.94	1829 -	1864	1836.15	7.23E+01	22.29	2.65E+01	Y-88
m 29	1860.07	1829 -	1864	1860.30	9.40E+00	14.59	2.07E+01	.....
M 30	1883.92	1882 -	1897	1884.16	9.13E+00	5.89	5.67E+00	.....
m 31	1890.94	1882 -	1897	1891.19	1.29E+01	16.09	1.87E+01	.....
32	2081.77	2078 -	2086	2082.15	1.53E+01	10.98	9.30E+00	.....
33	2124.84	2119 -	2129	2125.25	1.01E+01	9.07	5.77E+00	.....
34	2505.61	2502 -	2510	2506.30	2.95E+01	13.29	9.00E+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 : 11/2/2015 9:27:37AM

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
1	22.34	7.27E+04	781.85	3.04E-02	1.78E-03
2	31.98	1.30E+03	234.98	2.91E-02	1.78E-03
M 3	53.81	1.80E+04	1001.88	2.49E-02	1.78E-03
m 4	59.38	5.57E+04	601.54	2.39E-02	1.78E-03
5	67.46	5.84E+02	336.45	2.26E-02	1.74E-03
6	87.75	2.60E+04	633.21	1.97E-02	1.63E-03
7	122.02	5.02E+03	355.27	1.60E-02	1.53E-03
8	136.42	6.95E+02	284.58	1.47E-02	1.42E-03
9	165.79	6.78E+02	245.76	1.27E-02	1.21E-03

: 00254

Analysis Report for 1510064-01
 GAS-1302

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty	
10	277.11	2.27E+02	194.33	8.25E-03	8.67E-04	
11	391.71	1.56E+02	156.08	5.97E-03	7.36E-04	
12	438.30	1.29E+02	156.30	5.36E-03	6.68E-04	
13	532.17	1.09E+02	108.88	4.43E-03	5.30E-04	
14	661.64	1.17E+04	261.03	3.57E-03	3.40E-04	
15	797.12	1.05E+02	95.08	2.97E-03	2.64E-04	
16	897.84	1.72E+02	131.70	2.65E-03	2.08E-04	
17	911.52	1.23E+02	120.12	2.61E-03	2.06E-04	
18	1012.90	1.61E+02	127.58	2.36E-03	1.93E-04	
19	1106.42	1.28E+02	114.56	2.17E-03	1.81E-04	
20	1144.15	7.37E+01	85.35	2.10E-03	1.76E-04	
21	1173.26	9.83E+03	238.93	2.05E-03	1.73E-04	
22	1332.49	9.10E+03	201.09	1.83E-03	2.16E-04	
23	1399.23	2.15E+01	22.24	1.75E-03	2.02E-04	
24	1410.41	3.65E+01	20.78	1.74E-03	1.99E-04	
25	1577.42	3.70E+01	25.53	1.58E-03	1.65E-04	
26	1707.70	2.60E+01	31.77	1.47E-03	1.38E-04	
27	1765.55	1.21E+01	15.00	1.43E-03	1.26E-04	
M	28	1835.94	7.23E+01	1.39E-03	1.11E-04	
m	29	1860.07	9.40E+00	1.37E-03	1.11E-04	
M	30	1883.92	9.13E+00	5.89	1.36E-03	1.11E-04
m	31	1890.94	1.29E+01	16.09	1.36E-03	1.11E-04
	32	2081.77	1.53E+01	10.98	1.26E-03	1.11E-04
	33	2124.84	1.01E+01	9.07	1.24E-03	1.11E-04
	34	2505.61	2.95E+01	13.29	1.10E-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 : 11/2/2015 9:27:37AM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000028944.CNF

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
1	22.34	7.27E+04	781.85			7.27E+04	7.82E+02
2	31.98	1.30E+03	234.98			1.30E+03	2.35E+02
M	3	53.81	1.80E+04	1001.88		1.80E+04	1.00E+03
m	4	59.38	5.57E+04	601.54		5.57E+04	6.02E+02
	5	67.46	5.84E+02	336.45		5.84E+02	3.36E+02

Analysis Report for 1510064-01

GAS-1302

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
6	87.75	2.60E+04	633.21			2.60E+04	6.33E+02
7	122.02	5.02E+03	355.27			5.02E+03	3.55E+02
8	136.42	6.95E+02	284.58			6.95E+02	2.85E+02
9	165.79	6.78E+02	245.76			6.78E+02	2.46E+02
10	277.11	2.27E+02	194.33			2.27E+02	1.94E+02
11	391.71	1.56E+02	156.08			1.56E+02	1.56E+02
12	438.30	1.29E+02	156.30			1.29E+02	1.56E+02
13	532.17	1.09E+02	108.88			1.09E+02	1.09E+02
14	661.64	1.17E+04	261.03			1.17E+04	2.61E+02
15	797.12	1.05E+02	95.08			1.05E+02	9.51E+01
16	897.84	1.72E+02	131.70			1.72E+02	1.32E+02
17	911.52	1.23E+02	120.12	5.03E-01	1.43E+00	1.22E+02	1.20E+02
18	1012.90	1.61E+02	127.58			1.61E+02	1.28E+02
19	1106.42	1.28E+02	114.56			1.28E+02	1.15E+02
20	1144.15	7.37E+01	85.35			7.37E+01	8.53E+01
21	1173.26	9.83E+03	238.93			9.83E+03	2.39E+02
22	1332.49	9.10E+03	201.09			9.10E+03	2.01E+02
23	1399.23	2.15E+01	22.24			2.15E+01	2.22E+01
24	1410.41	3.65E+01	20.78			3.65E+01	2.08E+01
25	1577.42	3.70E+01	25.53			3.70E+01	2.55E+01
26	1707.70	2.60E+01	31.77			2.60E+01	3.18E+01
27	1765.55	1.21E+01	15.00			1.21E+01	1.50E+01
M 28	1835.94	7.23E+01	22.29			7.23E+01	2.23E+01
m 29	1860.07	9.40E+00	14.59			9.40E+00	1.46E+01
M 30	1883.92	9.13E+00	5.89			9.13E+00	5.89E+00
m 31	1890.94	1.29E+01	16.09			1.29E+01	1.61E+01
32	2081.77	1.53E+01	10.98			1.53E+01	1.10E+01
33	2124.84	1.01E+01	9.07			1.01E+01	9.07E+00
34	2505.61	2.95E+01	13.29			2.95E+01	1.33E+01

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

AREA CORRECTION REPORT REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 11/2/2015 9:27:37AM
 Ref. Peak Energy : 0.00 Reference Date :
 Peak Ratio : 0.00 Uncertainty : 0.00
 Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000028944.CNF

Corrected Area is: Original * Peak Ratio - Background

Analysis Report for 1510064-01

GAS-1302

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	1	22.34	7.27E+04	781.85			7.27E+04	7.82E+02
	2	31.98	1.30E+03	234.98			1.30E+03	2.35E+02
M	3	53.81	1.80E+04	1001.88			1.80E+04	1.00E+03
m	4	59.38	5.57E+04	601.54			5.57E+04	6.02E+02
	5	67.46	5.84E+02	336.45			5.84E+02	3.36E+02
	6	87.75	2.60E+04	633.21			2.60E+04	6.33E+02
	7	122.02	5.02E+03	355.27			5.02E+03	3.55E+02
	8	136.42	6.95E+02	284.58			6.95E+02	2.85E+02
	9	165.79	6.78E+02	245.76			6.78E+02	2.46E+02
	10	277.11	2.27E+02	194.33			2.27E+02	1.94E+02
	11	391.71	1.56E+02	156.08			1.56E+02	1.56E+02
	12	438.30	1.29E+02	156.30			1.29E+02	1.56E+02
	13	532.17	1.09E+02	108.88			1.09E+02	1.09E+02
	14	661.64	1.17E+04	261.03			1.17E+04	2.61E+02
	15	797.12	1.05E+02	95.08			1.05E+02	9.51E+01
	16	897.84	1.72E+02	131.70			1.72E+02	1.32E+02
	17	911.52	1.23E+02	120.12	5.03E-01	1.43E+00	1.22E+02	1.20E+02
	18	1012.90	1.61E+02	127.58			1.61E+02	1.28E+02
	19	1106.42	1.28E+02	114.56			1.28E+02	1.15E+02
	20	1144.15	7.37E+01	85.35			7.37E+01	8.53E+01
	21	1173.26	9.83E+03	238.93			9.83E+03	2.39E+02
	22	1332.49	9.10E+03	201.09			9.10E+03	2.01E+02
	23	1399.23	2.15E+01	22.24			2.15E+01	2.22E+01
	24	1410.41	3.65E+01	20.78			3.65E+01	2.08E+01
	25	1577.42	3.70E+01	25.53			3.70E+01	2.55E+01
	26	1707.70	2.60E+01	31.77			2.60E+01	3.18E+01
	27	1765.55	1.21E+01	15.00			1.21E+01	1.50E+01
M	28	1835.94	7.23E+01	22.29			7.23E+01	2.23E+01
m	29	1860.07	9.40E+00	14.59			9.40E+00	1.46E+01
M	30	1883.92	9.13E+00	5.89			9.13E+00	5.89E+00
m	31	1890.94	1.29E+01	16.09			1.29E+01	1.61E+01
	32	2081.77	1.53E+01	10.98			1.53E+01	1.10E+01
	33	2124.84	1.01E+01	9.07			1.01E+01	9.07E+00
	34	2505.61	2.95E+01	13.29			2.95E+01	1.33E+01

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

NUCLIDE IDENTIFICATION REPORT

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

IDENTIFIED NUCLIDES

Analysis Report for 1510064-01
 GAS-1302

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
CO-57	0.951	122.06 *	85.51	6.68E+01	7.98E+00
		136.48 *	10.60	8.07E+01	3.41E+01
CO-60	0.999	1173.22 *	100.00	1.33E+02	1.16E+01
		1332.49 *	100.00	1.38E+02	1.66E+01
Y-88	0.723	898.02 *	93.40	3.67E+02	2.82E+02
		1836.01 *	99.38	2.76E+02	8.79E+01
CD-109	0.971	88.03 *	3.72	2.60E+03	2.73E+02
SN-113	0.717	255.12	1.93		
		391.69 *	64.90	1.40E+02	1.42E+02
SN-126	0.995	87.57 *	37.00	7.29E+01	6.31E+00
CS-137	1.000	661.65 *	85.12	8.27E+01	8.11E+00
CE-139	0.825	165.85 *	80.35	9.97E+01	3.74E+01
TM-171	0.910	66.72 *	0.14	8.76E+02	5.10E+02
AM-241	0.996	59.54 *	35.90	1.33E+02	9.97E+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 : 11/2/2015 9:27:37AM
 Peak Locate From Channel : 1
 Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
1	22.34	4.04097E+01	0.54		
2	31.98	7.22967E-01	9.03		
M 3	53.81	1.00001E+01	2.78		
10	277.11	1.25913E-01	42.87	Tol.	NP-239 CM-243
12	438.30	7.17538E-02	60.51	Tol.	BA-140
13	532.17	6.03333E-02	50.13		
15	797.12	5.83967E-02	45.23	Sum	
17	911.52	6.78014E-02	49.22	Tol.	LU-172 AC-228
18	1012.90	8.92026E-02	39.73		
19	1106.42	7.13321E-02	44.61		
20	1144.15	4.09299E-02	57.92		
23	1399.23	1.19676E-02	51.61	Sum	
24	1410.41	2.02778E-02	28.46		

Analysis Report for 1510064-01

GAS-1302

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
25	1577.42	2.05556E-02	34.51		
26	1707.70	1.44347E-02	61.13		
27	1765.55	6.71111E-03	62.09		
m 29	1860.07	5.22276E-03	77.62		
M 30	1883.92	5.07319E-03	32.28		
m 31	1890.94	7.18514E-03	62.22		
32	2081.77	8.52778E-03	35.76		
33	2124.84	5.61966E-03	44.83		
34	2505.61	1.63889E-02	22.52	Sum	

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

NUCLIDE IDENTIFICATION REPORT

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

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty	
CO-57	0.95	122.06	*	85.51	6.68E+01	7.98E+00
		136.48	*	10.60	8.07E+01	3.41E+01
CO-60	0.99	1173.22	*	100.00	1.33E+02	1.16E+01
		1332.49	*	100.00	1.38E+02	1.66E+01
Y-88	0.72	898.02	*	93.40	3.67E+02	2.82E+02
		1836.01	*	99.38	2.76E+02	8.79E+01
CD-109	0.97	88.03	*	3.72	2.60E+03	2.73E+02
SN-113	0.71	255.12		1.93		
		391.69	*	64.90	1.40E+02	1.42E+02
SN-126	0.99	87.57	*	37.00	7.29E+01	6.31E+00
CS-137	1.00	661.65	*	85.12	8.27E+01	8.11E+00
CE-139	0.82	165.85	*	80.35	9.97E+01	3.74E+01
TM-171	0.91	66.72	*	0.14	8.76E+02	5.10E+02
AM-241	0.99	59.54	*	35.90	1.33E+02	9.97E+00

Analysis Report for 1510064-01

GAS-1302

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

INTERFERENCE CORRECTED REPORT

Nuclide Name	Nuclide id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
CO-57	0.951	6.75E+01	7.77E+00	
CO-60	0.999	1.35E+02	9.52E+00	
Y-88	0.723	2.84E+02	8.39E+01	
? CD-109	0.971	2.60E+03	2.73E+02	
SN-113	0.717	1.40E+02	1.42E+02	
? SN-126	0.995	7.29E+01	6.31E+00	
CS-137	1.000	8.27E+01	8.11E+00	
CE-139	0.825	9.97E+01	3.74E+01	
TM-171	0.910	8.76E+02	5.10E+02	
AM-241	0.996	1.33E+02	9.97E+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 1510064-01

GAS-1302

 UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/2/2015 9:27:37AM
 Peak Locate From Channel : 1
 Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
1	22.34	4.04097E+01	0.54		
2	31.98	7.22967E-01	9.03		
M 3	53.81	1.00001E+01	2.78		
10	277.11	1.25913E-01	42.87	Tol.	NP-239 CM-243
12	438.30	7.17538E-02	60.51	Tol.	BA-140
13	532.17	6.03333E-02	50.13		
15	797.12	5.83967E-02	45.23	Sum	
17	911.52	6.78014E-02	49.22	Tol.	LU-172 AC-228
18	1012.90	8.92026E-02	39.73		
19	1106.42	7.13321E-02	44.61		
20	1144.15	4.09299E-02	57.92		
23	1399.23	1.19676E-02	51.61	Sum	
24	1410.41	2.02778E-02	28.46		
25	1577.42	2.05556E-02	34.51		
26	1707.70	1.44347E-02	61.13		
27	1765.55	6.71111E-03	62.09		
m 29	1860.07	5.22276E-03	77.62		
M 30	1883.92	5.07319E-03	32.28		
m 31	1890.94	7.18514E-03	62.22		
32	2081.77	8.52778E-03	35.76		
33	2124.84	5.61966E-03	44.83		
34	2505.61	1.63889E-02	22.52	Sum	

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

Analysis Report for 1510064-01

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	1.12E+05	6.22E+05	6.22E+05
+	NA-22	1274.54	99.94	-1.06E+00	1.19E+00	1.19E+00
+	@ NA-24	1368.53	99.99	1.00E+26	1.00E+26	1.00E+26
	@	2754.09	99.86	0.00E+00		1.00E+26
+	AL-26	1808.65	99.76	-1.13E-01	2.74E-01	2.74E-01
+	K-40	1460.81	10.67	1.55E+00	3.73E+00	3.73E+00
+	@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88	94.40	-1.33E+01	5.36E-01	5.36E-01
		78.34	96.00	-5.68E-03		5.82E-01
+	SC-46	889.25	99.98	1.61E+02	1.69E+03	1.69E+03
		1120.51	99.99	5.99E+01		1.69E+03
+	V-48	983.52	99.98	-3.49E+15	8.00E+15	1.88E+16
		1312.10	97.50	-4.94E+15		8.00E+15
+	CR-51	320.08	9.83	5.50E+09	1.47E+10	1.47E+10
+	MN-54	834.83	99.97	-3.07E+00	8.46E+00	8.46E+00
+	CO-56	846.75	99.96	3.10E+02	5.58E+02	2.42E+03
		1037.75	14.03	-7.81E+03		1.97E+04
		1238.25	67.00	4.00E+02		2.12E+03
		1771.40	15.51	0.00E+00		3.98E+03
		2598.48	16.90	0.00E+00		5.58E+02
+	CO-57	122.06	* 85.51	6.68E+01	7.16E+00	7.16E+00
		136.48	* 10.60	8.07E+01		5.37E+01
+	CO-58	810.76	99.40	5.64E+02	5.26E+03	5.26E+03
+	FE-59	1099.22	56.50	-5.91E+05	9.41E+05	1.61E+06
		1291.56	43.20	2.54E+04		9.41E+05
+	CO-60	1173.22	* 100.00	1.33E+02	1.62E+00	3.00E+00
		1332.49	* 100.00	1.38E+02		1.62E+00
+	ZN-65	1115.52	50.75	1.99E+01	3.44E+01	3.44E+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	5.66E+03	1.26E+02	5.47E+02
		136.00	59.20	2.34E+02		1.26E+02
		264.65	59.80	8.78E+01		1.64E+02
		279.53	25.20	-4.05E+01		3.95E+02
		400.65	11.40	-1.99E+02		1.06E+03
+	RB-82	776.52	13.00	2.10E+10	1.05E+11	1.05E+11
+	RB-83	520.41	46.00	1.17E+02	1.98E+03	1.98E+03
		529.64	30.30	1.53E+01		3.00E+03
		552.65	16.40	-1.75E+03		5.40E+03
+	KR-85	513.99	0.43	1.44E+02	2.60E+02	2.60E+02
+	SR-85	513.99	99.27	4.99E+03	9.03E+03	9.03E+03

Analysis Report for 1510064-01

GAS-1302

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	Y-88	898.02	*	93.40	3.67E+02	2.67E+02	4.58E+02
		1836.01	*	99.38	2.76E+02		2.67E+02
+	NB-93M	16.57		9.43	-2.36E+02	6.19E+00	6.19E+00
+	NB-94	702.63		100.00	7.91E-03	1.03E+00	1.03E+00
		871.10		100.00	-2.39E-02		1.38E+00
+	NB-95	765.79		99.81	9.06E+06	2.46E+07	2.46E+07
+	@ NB-95M	235.69		25.00	1.00E+26	1.00E+26	1.00E+26
+	ZR-95	724.18		43.70	-1.16E+03	2.13E+04	2.55E+04
		756.72		55.30	2.92E+03		2.13E+04
+	@ MO-99	181.06		6.20	1.00E+26	1.00E+26	1.00E+26
	@	739.58		12.80	1.00E+26		1.00E+26
	@	778.00		4.50	1.00E+26		1.00E+26
+	RU-103	497.08		89.00	1.26E+06	3.60E+06	3.60E+06
+	RU-106	621.84		9.80	1.07E+01	5.10E+01	5.10E+01
+	AG-108M	433.93		89.90	-2.11E-01	1.08E+00	1.08E+00
		614.37		90.40	-4.55E-01		1.09E+00
		722.95		90.50	-2.53E-01		1.20E+00
+	CD-109	88.03	*	3.72	2.60E+03	8.99E+01	8.99E+01
+	AG-110M	657.75		93.14	-1.33E-01	1.73E+01	2.85E+01
		677.61		10.53	4.48E+00		9.96E+01
		706.67		16.46	1.47E+01		6.79E+01
		763.93		21.98	-1.10E+01		5.45E+01
		884.67		71.63	5.30E+00		2.18E+01
		1384.27		23.94	1.03E+00		1.73E+01
+	CD-113M	263.70		0.02	5.66E+02	3.39E+03	3.39E+03
+	SN-113	255.12		1.93	-6.16E+02	2.31E+02	6.15E+03
		391.69	*	64.90	1.40E+02		2.31E+02
+	TE123M	159.00		84.10	-8.09E+01	9.02E+01	9.02E+01
+	SB-124	602.71		97.87	-7.32E+03	1.17E+04	1.84E+04
		645.85		7.26	1.30E+05		2.67E+05
		722.78		11.10	-1.06E+05		1.79E+05
		1691.02		49.00	-4.41E+02		1.17E+04
+	I-125	35.49		6.49	-2.11E+05	9.54E+04	9.54E+04
+	SB-125	176.33		6.89	2.38E+00	5.69E+00	1.49E+01
		427.89		29.33	-7.65E-01		5.69E+00
		463.38		10.35	2.60E+00		1.78E+01
		600.56		17.80	-1.58E+00		9.75E+00
		635.90		11.32	-7.68E+00		1.57E+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	7.29E+01	2.52E+00	2.52E+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	-5.00E+00	7.25E-01	7.25E-01
		33.60		13.20	-1.97E+00		2.42E+00

Analysis Report for 1510064-01

GAS-1302

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	I-129	39.58	7.52	-2.10E+01	7.25E-01	4.77E+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	-3.25E-01	1.57E+00	1.98E+00
		302.84	17.80	-3.19E+00		4.78E+00
		356.01	60.00	-4.72E-02		1.57E+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	4.78E+00	2.16E+00	2.48E+01
		569.32	15.43	-1.98E-01		1.33E+01
		604.70	97.60	-1.19E+00		2.16E+00
		795.84	85.40	-6.87E-01		3.11E+00
		801.93	8.73	1.67E-01		3.03E+01
+	CS-135	268.24	16.00	-7.38E-01	4.34E+00	4.34E+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	2.38E+19	4.30E+19	2.44E+20
		163.89	4.61	-7.41E+19		4.36E+20
		176.55	13.56	2.33E+19		1.46E+20
		273.65	12.66	-3.19E+19		1.91E+20
		340.57	48.50	-1.38E+19		5.54E+19
		818.50	99.70	-1.86E+19		4.30E+19
		1048.07	79.60	-2.12E+18		6.38E+19
		1235.34	19.70	-7.57E+19		1.32E+20
+	CS-137	661.65	* 85.12	8.27E+01	1.72E+00	1.72E+00
+	LA-138	788.74	34.00	-2.93E-01	5.61E-01	3.49E+00
		1435.80	66.00	-1.28E-01		5.61E-01
+	CE-139	165.85	* 80.35	9.97E+01	5.85E+01	5.85E+01
+	@ BA-140	162.64	6.70	1.00E+26	1.00E+26	1.00E+26
	@	304.84	4.50	1.00E+26		1.00E+26
	@	423.70	3.20	1.00E+26		1.00E+26
	@	437.55	2.00	1.00E+26		1.00E+26
	@	537.32	25.00	1.00E+26		1.00E+26
+	@ LA-140	328.77	20.50	1.00E+26	1.00E+26	1.00E+26
	@	487.03	45.50	1.00E+26		1.00E+26
	@	815.85	23.50	1.00E+26		1.00E+26
	@	1596.49	95.49	1.00E+26		1.00E+26
+	CE-141	145.44	48.40	-2.67E+07	8.74E+07	8.74E+07
+	@ 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	-6.58E+00	3.88E+01	3.88E+01
+	PM-144	476.78	42.00	6.18E+00	5.10E+00	1.23E+01

: 00264

Analysis Report for 1510064-01

GAS-1302

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	PM-144	618.01	98.60	-1.67E+00	5.10E+00	5.10E+00
		696.49	99.49	-1.42E+00		5.21E+00
+	PM-145	36.85	21.70	-5.69E+00	9.13E-01	1.66E+00
		37.36	39.70	-3.85E+00		9.13E-01
		42.30	15.10	-4.42E+00		2.99E+00
		72.40	2.31	-1.68E+00		2.45E+01
+	PM-146	453.90	39.94	-5.39E-01	3.35E+00	3.35E+00
		735.90	14.01	-3.70E+00		1.02E+01
		747.13	13.10	-6.05E+00		1.13E+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	3.58E+01	3.06E+00	3.57E+00
		244.69	5.40	-5.83E+00		1.45E+01
		344.27	19.13	9.01E-01		4.69E+00
		778.89	9.20	5.31E+00		1.45E+01
		964.01	10.40	-3.99E+00		1.73E+01
		1085.78	7.22	9.16E+00		2.46E+01
		1112.02	9.60	5.37E+00		1.83E+01
		1407.95	14.94	1.38E+00		3.06E+00
+	GD-153	97.43	31.30	1.81E+00	1.61E+01	1.61E+01
		103.18	22.20	1.61E+01		2.36E+01
+	EU-154	123.07	40.50	1.97E+01	1.94E+00	1.94E+00
		723.30	19.70	-1.38E+00		6.55E+00
		873.19	11.50	-5.21E-01		1.47E+01
		996.32	10.30	5.28E+00		1.78E+01
		1004.76	17.90	3.50E+00		1.00E+01
		1274.45	35.50	-1.92E+00		2.17E+00
+	EU-155	86.50	30.90	1.20E+02	3.04E+00	4.13E+00
		105.30	20.70	-9.00E-01		3.04E+00
+	EU-156	811.77	10.40	1.93E+17	7.47E+17	9.95E+17
		1153.47	7.20	6.35E+17		1.45E+18
		1230.71	8.90	-2.75E+16		7.47E+17
+	HO-166M	184.41	72.60	-3.22E-01	8.31E-01	8.31E-01
		280.45	29.60	-7.26E-02		2.41E+00
		410.94	11.10	-3.04E+00		8.01E+00
		711.69	54.10	-2.77E-01		1.94E+00
+	TM-171	66.72	*	8.76E+02	8.26E+02	8.26E+02
+	HF-172	81.75	4.52	-5.80E+00	1.31E+01	3.06E+01
		125.81	11.30	-1.88E+00		1.31E+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	-5.42E-01	1.08E+01	2.76E+01
		272.11	21.20	3.04E-01		1.08E+01
+	HF-175	343.40	84.00	-5.04E+02	4.42E+03	4.42E+03
+	LU-176	88.34	13.30	1.96E+02	7.37E-01	6.82E+00
		201.83	86.00	-3.12E-01		7.37E-01

Analysis Report for 1510064-01

GAS-1302

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	LU-176	306.78	94.00	-3.90E-01	7.37E-01	7.84E-01
+	TA-182	67.75	41.20	-5.24E+03	2.11E+02	2.11E+02
		1121.30	34.90	1.81E+02		7.27E+02
		1189.05	16.23	1.29E+02		1.10E+03
		1221.41	26.98	1.52E+02		5.61E+02
		1231.02	11.44	-4.48E+01		1.22E+03
+	IR-192	308.46	29.68	1.90E+03	6.39E+03	7.48E+03
		468.07	48.10	-6.45E+02		6.39E+03
+	HG-203	279.19	77.30	-3.10E+04	3.02E+05	3.02E+05
+	BI-207	569.67	97.72	-1.50E-02	1.01E+00	1.01E+00
		1063.62	74.90	4.46E-01		2.16E+00
+	TL-208	583.14	30.22	-2.10E-01	4.93E-01	3.17E+00
		860.37	4.48	1.21E+01		3.02E+01
		2614.66	35.85	1.06E-01		4.93E-01
+	BI-210M	262.00	45.00	-4.82E-01	1.54E+00	1.54E+00
		300.00	23.00	1.19E+00		3.21E+00
+	PB-210	46.50	4.25	1.44E+01	1.35E+01	1.35E+01
+	PB-211	404.84	2.90	-4.56E+00	3.02E+01	3.02E+01
		831.96	2.90	-1.98E+01		4.39E+01
+	BI-212	727.17	11.80	5.90E+00	9.19E+00	9.19E+00
		1620.62	2.75	-6.08E+00		1.23E+01
+	PB-212	238.63	44.60	9.29E-01	1.58E+00	1.58E+00
		300.09	3.41	8.00E+00		2.16E+01
+	BI-214	609.31	46.30	1.45E+00	2.14E+00	2.14E+00
		1120.29	15.10	3.40E-01		9.61E+00
		1764.49	15.80	9.01E-02		2.50E+00
		2204.22	4.98	1.70E+00		7.63E+00
+	PB-214	295.21	19.19	2.75E+00	2.17E+00	3.86E+00
		351.92	37.19	7.49E-01		2.17E+00
+	RN-219	401.80	6.50	3.32E+00	1.34E+01	1.34E+01
+	RA-223	323.87	3.88	-8.35E+00	1.94E+01	1.94E+01
+	RA-224	240.98	3.95	1.06E+01	1.78E+01	1.78E+01
+	RA-225	40.00	31.00	-1.20E+18	2.73E+17	2.73E+17
+	RA-226	186.21	3.28	6.63E-01	1.86E+01	1.86E+01
+	TH-227	50.10	8.40	1.18E+01	6.14E+00	7.39E+00
		236.00	11.50	3.09E-01		6.14E+00
		256.20	6.30	-2.76E+00		1.10E+01
+	AC-228	338.32	11.40	-4.78E+00	5.58E+00	6.74E+00
		911.07	27.70	-1.45E+00		5.58E+00
		969.11	16.60	9.73E-01		9.39E+00
+	TH-230	48.44	16.90	8.27E+00	3.50E+00	3.50E+00
		62.85	4.60	7.84E+02		2.21E+01
		67.67	0.37	-3.30E+03		1.33E+02
+	PA-231	283.67	1.60	1.87E+01	3.17E+01	4.45E+01
		302.67	2.30	-2.11E+01		3.17E+01
+	TH-231	25.64	14.70	-1.90E+01	6.27E+00	6.27E+00
		84.21	6.40	1.18E+02		1.27E+01
+	PA-233	311.98	38.60	4.33E+09	6.54E+09	6.54E+09

Analysis Report for 1510064-01
GAS-1302

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	PA-234	131.20	20.40	-1.14E+00	2.43E+00	2.43E+00
		733.99	8.80	-4.65E+00		1.21E+01
		946.00	12.00	1.87E+00		1.41E+01
+	PA-234M	1001.03	0.92	3.95E+01	1.64E+02	1.64E+02
+	TH-234	63.29	3.80	3.57E+02	2.25E+01	2.25E+01
+	U-235	143.76	10.50	2.49E+00	4.96E+00	4.96E+00
		163.35	4.70	-2.10E+00		1.24E+01
		205.31	4.70	-7.40E-01		1.37E+01
+	NP-237	86.50	12.60	2.12E+02	7.30E+00	7.30E+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	1.33E+02	3.05E+00	3.05E+00
+	AM-243	74.67	66.00	-5.48E-02	7.97E-01	7.97E-01
+	CM-243	209.75	3.29	5.98E-01	5.33E+00	2.14E+01
		228.14	10.60	2.37E+00		7.04E+00
		277.60	14.00	1.53E-01		5.33E+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	6.22E+05	6.22E+05	1.12E+05	3.08E+05
	NA-22	1274.54	99.94	1.19E+00	1.19E+00	-1.06E+00	5.70E-01
@	NA-24	1368.53	99.99	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		2754.09	99.86	1.00E+26		0.00E+00	1.00E+20
	AL-26	1808.65	99.76	2.74E-01	2.74E-01	-1.13E-01	1.17E-01

Analysis Report for 1510064-01

GAS-1302

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
K-40	1460.81	10.67	3.73E+00	3.73E+00	1.55E+00	1.71E+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	5.36E-01	5.36E-01	-1.33E+01	2.66E-01
	78.34	96.00	5.82E-01		-5.68E-03	2.89E-01
SC-46	889.25	99.98	1.69E+03	1.69E+03	1.61E+02	8.34E+02
	1120.51	99.99	1.69E+03		5.99E+01	8.31E+02
V-48	983.52	99.98	1.88E+16	8.00E+15	-3.49E+15	9.26E+15
	1312.10	97.50	8.00E+15		-4.94E+15	3.81E+15
CR-51	320.08	9.83	1.47E+10	1.47E+10	5.50E+09	7.27E+09
MN-54	834.83	99.97	8.46E+00	8.46E+00	-3.07E+00	4.17E+00
CO-56	846.75	99.96	2.42E+03	5.58E+02	3.10E+02	1.19E+03
	1037.75	14.03	1.97E+04		-7.81E+03	9.70E+03
	1238.25	67.00	2.12E+03		4.00E+02	1.02E+03
	1771.40	15.51	3.98E+03		0.00E+00	1.76E+03
	2598.48	16.90	5.58E+02		0.00E+00	0.00E+00
+ CO-57	122.06	* 85.51	7.16E+00	7.16E+00	6.68E+01	3.56E+00
	136.48	* 10.60	5.37E+01		8.07E+01	2.67E+01
CO-58	810.76	99.40	5.26E+03	5.26E+03	5.64E+02	2.59E+03
FE-59	1099.22	56.50	1.61E+06	9.41E+05	-5.91E+05	7.90E+05
	1291.56	43.20	9.41E+05		2.54E+04	4.51E+05
+ CO-60	1173.22	* 100.00	3.00E+00	1.62E+00	1.33E+02	1.48E+00
	1332.49	* 100.00	1.62E+00		1.38E+02	7.92E-01
ZN-65	1115.52	50.75	3.44E+01	3.44E+01	1.99E+01	1.69E+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	5.47E+02	1.26E+02	5.66E+03	2.72E+02
	136.00	59.20	1.26E+02		2.34E+02	6.25E+01
	264.65	59.80	1.64E+02		8.78E+01	8.12E+01
	279.53	25.20	3.95E+02		-4.05E+01	1.96E+02
	400.65	11.40	1.06E+03		-1.99E+02	5.25E+02
RB-82	776.52	13.00	1.05E+11	1.05E+11	2.10E+10	5.15E+10
RB-83	520.41	46.00	1.98E+03	1.98E+03	1.17E+02	9.79E+02
	529.64	30.30	3.00E+03		1.53E+01	1.48E+03
	552.65	16.40	5.40E+03		-1.75E+03	2.66E+03
KR-85	513.99	0.43	2.60E+02	2.60E+02	1.44E+02	1.29E+02
SR-85	513.99	99.27	9.03E+03	9.03E+03	4.99E+03	4.46E+03
+ Y-88	898.02	* 93.40	4.58E+02	2.67E+02	3.67E+02	2.26E+02
	1836.01	* 99.38	2.67E+02		2.76E+02	1.28E+02
NB-93M	16.57	9.43	6.19E+00	6.19E+00	-2.36E+02	3.08E+00
NB-94	702.63	100.00	1.03E+00	1.03E+00	7.91E-03	5.08E-01
	871.10	100.00	1.38E+00		-2.39E-02	6.82E-01
NB-95	765.79	99.81	2.46E+07	2.46E+07	9.06E+06	1.21E+07
@ NB-95M	235.69	25.00	1.00E+26	1.00E+26	1.00E+26	1.00E+20
ZR-95	724.18	43.70	2.55E+04	2.13E+04	-1.16E+03	1.25E+04
	756.72	55.30	2.13E+04		2.92E+03	1.05E+04
@ MO-99	181.06	6.20	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	739.58	12.80	1.00E+26		1.00E+26	1.00E+20
@	778.00	4.50	1.00E+26		1.00E+26	1.00E+20
RU-103	497.08	89.00	3.60E+06	3.60E+06	1.26E+06	1.78E+06
RU-106	621.84	9.80	5.10E+01	5.10E+01	1.07E+01	2.51E+01
AG-108M	433.93	89.90	1.08E+00	1.08E+00	-2.11E-01	5.33E-01
	614.37	90.40	1.09E+00		-4.55E-01	5.39E-01

Analysis Report for 1510064-01

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	1.20E+00	1.08E+00	-2.53E-01	5.91E-01
+	CD-109	88.03	*	3.72	8.99E+01	8.99E+01	2.60E+03
	AG-110M	657.75	93.14	2.85E+01	1.73E+01	-1.33E-01	1.42E+01
		677.61	10.53	9.96E+01		4.48E+00	4.90E+01
		706.67	16.46	6.79E+01		1.47E+01	3.34E+01
		763.93	21.98	5.45E+01		-1.10E+01	2.68E+01
		884.67	71.63	2.18E+01		5.30E+00	1.07E+01
		1384.27	23.94	1.73E+01		1.03E+00	7.96E+00
	CD-113M	263.70	0.02	3.39E+03	3.39E+03	5.66E+02	1.68E+03
+	SN-113	255.12	1.93	6.15E+03	2.31E+02	-6.16E+02	3.05E+03
		391.69	*	64.90	2.31E+02	1.40E+02	1.14E+02
	TE123M	159.00	84.10	9.02E+01	9.02E+01	-8.09E+01	4.47E+01
	SB-124	602.71	97.87	1.84E+04	1.17E+04	-7.32E+03	9.07E+03
		645.85	7.26	2.67E+05		1.30E+05	1.32E+05
		722.78	11.10	1.79E+05		-1.06E+05	8.80E+04
		1691.02	49.00	1.17E+04		-4.41E+02	5.16E+03
	I-125	35.49	6.49	9.54E+04	9.54E+04	-2.11E+05	4.74E+04
	SB-125	176.33	6.89	1.49E+01	5.69E+00	2.38E+00	7.41E+00
		427.89	29.33	5.69E+00		-7.65E-01	2.81E+00
		463.38	10.35	1.78E+01		2.60E+00	8.82E+00
		600.56	17.80	9.75E+00		-1.58E+00	4.80E+00
		635.90	11.32	1.57E+01		-7.68E+00	7.72E+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	2.52E+00	7.29E+01	1.26E+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	7.25E-01	7.25E-01	-5.00E+00	3.61E-01
		33.60	13.20	2.42E+00		-1.97E+00	1.20E+00
		39.58	7.52	4.77E+00		-2.10E+01	2.37E+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	1.98E+00	1.57E+00	-3.25E-01	9.87E-01
		302.84	17.80	4.78E+00		-3.19E+00	2.37E+00
		356.01	60.00	1.57E+00		-4.72E-02	7.77E-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	2.48E+01	2.16E+00	4.78E+00	1.22E+01
		569.32	15.43	1.33E+01		-1.98E-01	6.56E+00
		604.70	97.60	2.16E+00		-1.19E+00	1.07E+00
		795.84	85.40	3.11E+00		-6.87E-01	1.53E+00
		801.93	8.73	3.03E+01		1.67E-01	1.49E+01
	CS-135	268.24	16.00	4.34E+00	4.34E+00	-7.38E-01	2.15E+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 1510064-01

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	2.44E+20	4.30E+19	2.38E+19	1.21E+20	
	163.89	4.61	4.36E+20		-7.41E+19	2.16E+20	
	176.55	13.56	1.46E+20		2.33E+19	7.24E+19	
	273.65	12.66	1.91E+20		-3.19E+19	9.45E+19	
	340.57	48.50	5.54E+19		-1.38E+19	2.74E+19	
	818.50	99.70	4.30E+19		-1.86E+19	2.12E+19	
	1048.07	79.60	6.38E+19		-2.12E+18	3.14E+19	
	1235.34	19.70	1.32E+20		-7.57E+19	6.37E+19	
+ CS-137	661.65	*	85.12	1.72E+00	1.72E+00	8.27E+01	
LA-138	788.74		34.00	3.49E+00	5.61E-01	-2.93E-01	
	1435.80		66.00	5.61E-01		-1.28E-01	
+ CE-139	165.85	*	80.35	5.85E+01	5.85E+01	9.97E+01	
@ BA-140	162.64		6.70	1.00E+26	1.00E+26	1.00E+26	
@	304.84		4.50	1.00E+26	1.00E+26	1.00E+26	
@	423.70		3.20	1.00E+26	1.00E+26	1.00E+26	
@	437.55		2.00	1.00E+26	1.00E+26	1.00E+26	
@	537.32		25.00	1.00E+26	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	1.00E+26	
@	815.85		23.50	1.00E+26	1.00E+26	1.00E+26	
@	1596.49		95.49	1.00E+26	1.00E+26	1.00E+26	
CE-141	145.44		48.40	8.74E+07	8.74E+07	-2.67E+07	
@ 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	1.00E+26	
@	664.55		5.20	1.00E+26	1.00E+26	1.00E+26	
CE-144	133.54		10.80	3.88E+01	3.88E+01	-6.58E+00	
PM-144	476.78		42.00	1.23E+01	5.10E+00	6.18E+00	
	618.01		98.60	5.10E+00		-1.67E+00	
	696.49		99.49	5.21E+00		-1.42E+00	
PM-145	36.85		21.70	1.66E+00	9.13E-01	-5.69E+00	
	37.36		39.70	9.13E-01		-3.85E+00	
	42.30		15.10	2.99E+00		-4.42E+00	
	72.40		2.31	2.45E+01		-1.26E+00	
PM-146	453.90		39.94	3.35E+00	3.35E+00	-5.39E-01	
	735.90		14.01	1.02E+01		-3.70E+00	
	747.13		13.10	1.13E+01		-6.05E+00	
@ ND-147	91.11		28.90	1.00E+26	1.00E+26	1.00E+26	
@	531.02		13.10	1.00E+26	1.00E+26	1.00E+26	
@ PM-149	285.90		3.10	1.00E+26	1.00E+26	1.00E+26	
EU-152	121.78		20.50	3.57E+00	3.06E+00	3.58E+01	
	244.69		5.40	1.45E+01		-5.83E+00	
	344.27		19.13	4.69E+00		9.01E-01	
	778.89		9.20	1.45E+01		5.31E+00	
	964.01		10.40	1.73E+01		-3.99E+00	
	1085.78		7.22	2.46E+01		9.16E+00	
	1112.02		9.60	1.83E+01		5.37E+00	
	1407.95		14.94	3.06E+00		1.38E+00	
	GD-153	97.43		31.30	1.61E+01	1.61E+01	1.81E+00
		103.18		22.20	2.36E+01		1.61E+01
EU-154	123.07		40.50	1.94E+00	1.94E+00	1.97E+01	
	723.30		19.70	6.55E+00		-1.38E+00	
	873.19		11.50	1.47E+01		-5.21E-01	
	996.32		10.30	1.78E+01		5.28E+00	

Analysis Report for 1510064-01

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	1.00E+01	1.94E+00	3.50E+00	4.94E+00
	1274.45	35.50	2.17E+00		-1.92E+00	1.03E+00
EU-155	86.50	30.90	4.13E+00	3.04E+00	1.20E+02	2.06E+00
	105.30	20.70	3.04E+00		-9.00E-01	1.51E+00
EU-156	811.77	10.40	9.95E+17	7.47E+17	1.93E+17	4.90E+17
	1153.47	7.20	1.45E+18		6.35E+17	7.07E+17
	1230.71	8.90	7.47E+17		-2.75E+16	3.60E+17
HO-166M	184.41	72.60	8.31E-01	8.31E-01	-3.22E-01	4.12E-01
	280.45	29.60	2.41E+00		-7.26E-02	1.19E+00
	410.94	11.10	8.01E+00		-3.04E+00	3.96E+00
	711.69	54.10	1.94E+00		-2.77E-01	9.52E-01
+ TM-171	66.72	* 0.14	8.26E+02	8.26E+02	8.76E+02	4.11E+02
HF-172	81.75	4.52	3.06E+01	1.31E+01	-5.80E+00	1.52E+01
	125.81	11.30	1.31E+01		-1.88E+00	6.50E+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	2.76E+01	1.08E+01	-5.42E-01	1.37E+01
	272.11	21.20	1.08E+01		3.04E-01	5.34E+00
HF-175	343.40	84.00	4.42E+03	4.42E+03	-5.04E+02	2.19E+03
LU-176	88.34	13.30	6.82E+00	7.37E-01	1.96E+02	3.40E+00
	201.83	86.00	7.37E-01		-3.12E-01	3.66E-01
	306.78	94.00	7.84E-01		-3.90E-01	3.88E-01
TA-182	67.75	41.20	2.11E+02	2.11E+02	-5.24E+03	1.05E+02
	1121.30	34.90	7.27E+02		1.81E+02	3.57E+02
	1189.05	16.23	1.10E+03		1.29E+02	5.35E+02
	1221.41	26.98	5.61E+02		1.52E+02	2.71E+02
	1231.02	11.44	1.22E+03		-4.48E+01	5.86E+02
IR-192	308.46	29.68	7.48E+03	6.39E+03	1.90E+03	3.70E+03
	468.07	48.10	6.39E+03		-6.45E+02	3.16E+03
HG-203	279.19	77.30	3.02E+05	3.02E+05	-3.10E+04	1.50E+05
BI-207	569.67	97.72	1.01E+00	1.01E+00	-1.50E-02	4.95E-01
	1063.62	74.90	2.16E+00		4.46E-01	1.06E+00
TL-208	583.14	30.22	3.17E+00	4.93E-01	-2.10E-01	1.56E+00
	860.37	4.48	3.02E+01		1.21E+01	1.49E+01
	2614.66	35.85	4.93E-01		1.06E-01	1.75E-01
BI-210M	262.00	45.00	1.54E+00	1.54E+00	-4.82E-01	7.61E-01
	300.00	23.00	3.21E+00		1.19E+00	1.59E+00
PB-210	46.50	4.25	1.35E+01	1.35E+01	1.44E+01	6.75E+00
PB-211	404.84	2.90	3.02E+01	3.02E+01	-4.56E+00	1.49E+01
	831.96	2.90	4.39E+01		-1.98E+01	2.16E+01
BI-212	727.17	11.80	9.19E+00	9.19E+00	5.90E+00	4.53E+00
	1620.62	2.75	1.23E+01		-6.08E+00	5.49E+00
PB-212	238.63	44.60	1.58E+00	1.58E+00	9.29E-01	7.84E-01
	300.09	3.41	2.16E+01		8.00E+00	1.07E+01
BI-214	609.31	46.30	2.14E+00	2.14E+00	1.45E+00	1.05E+00
	1120.29	15.10	9.61E+00		3.40E-01	4.72E+00
	1764.49	15.80	2.50E+00		9.01E-02	1.13E+00
	2204.22	4.98	7.63E+00		1.70E+00	3.35E+00
PB-214	295.21	19.19	3.86E+00	2.17E+00	2.75E+00	1.91E+00
	351.92	37.19	2.17E+00		7.49E-01	1.08E+00
RN-219	401.80	6.50	1.34E+01	1.34E+01	3.32E+00	6.61E+00

Analysis Report for 1510064-01

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	1.94E+01	1.94E+01	-8.35E+00	9.59E+00
RA-224	240.98	3.95	1.78E+01	1.78E+01	1.06E+01	8.84E+00
RA-225	40.00	31.00	2.73E+17	2.73E+17	-1.20E+18	1.36E+17
RA-226	186.21	3.28	1.86E+01	1.86E+01	6.63E-01	9.24E+00
TH-227	50.10	8.40	7.39E+00	6.14E+00	1.18E+01	3.68E+00
	236.00	11.50	6.14E+00		3.09E-01	3.04E+00
	256.20	6.30	1.10E+01		-2.76E+00	5.43E+00
AC-228	338.32	11.40	6.74E+00	5.58E+00	-4.78E+00	3.34E+00
	911.07	27.70	5.58E+00		-1.45E+00	2.75E+00
	969.11	16.60	9.39E+00		9.73E-01	4.63E+00
TH-230	48.44	16.90	3.50E+00	3.50E+00	8.27E+00	1.74E+00
	62.85	4.60	2.21E+01		7.84E+02	1.10E+01
	67.67	0.37	1.33E+02		-3.30E+03	6.62E+01
PA-231	283.67	1.60	4.45E+01	3.17E+01	1.87E+01	2.20E+01
	302.67	2.30	3.17E+01		-2.11E+01	1.57E+01
TH-231	25.64	14.70	6.27E+00	6.27E+00	-1.90E+01	3.13E+00
	84.21	6.40	1.27E+01		1.18E+02	6.32E+00
PA-233	311.98	38.60	6.54E+09	6.54E+09	4.33E+09	3.24E+09
PA-234	131.20	20.40	2.43E+00	2.43E+00	-1.14E+00	1.21E+00
	733.99	8.80	1.21E+01		-4.65E+00	5.96E+00
	946.00	12.00	1.41E+01		1.87E+00	6.94E+00
PA-234M	1001.03	0.92	1.64E+02	1.64E+02	3.95E+01	8.09E+01
TH-234	63.29	3.80	2.25E+01	2.25E+01	3.57E+02	1.12E+01
U-235	143.76	10.50	4.96E+00	4.96E+00	2.49E+00	2.46E+00
	163.35	4.70	1.24E+01		-2.10E+00	6.14E+00
	205.31	4.70	1.37E+01		-7.40E-01	6.82E+00
NP-237	86.50	12.60	7.30E+00	7.30E+00	2.12E+02	3.64E+00
@ NP-239	106.10	22.70	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	228.18	10.70	1.00E+26		1.00E+26	1.00E+20
@	277.60	14.10	1.00E+26		1.00E+26	1.00E+20
+ AM-241	59.54	* 35.90	3.05E+00	3.05E+00	1.33E+02	1.52E+00
AM-243	74.67	66.00	7.97E-01	7.97E-01	-5.48E-02	3.97E-01
CM-243	209.75	3.29	2.14E+01	5.33E+00	5.98E-01	1.06E+01
	228.14	10.60	7.04E+00		2.37E+00	3.49E+00
	277.60	14.00	5.33E+00		1.53E-01	2.64E+00

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

No Action Level results available for reporting purposes.

Analysis Report for 1510064-01
GAS-1302

DATA REVIEW COMMENTS REPORT

Creation Date

Comment

User

No Data Review Comments Entered.

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

Sample Title: GAS-1302

Elapsed Live time: 1800

Elapsed Real Time: 1840

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	3	472	1514	
17:	1760	1970	5290	16886	28837	22358	11681	10456	
25:	6820	2408	894	696	834	1045	1320	1271	
33:	996	875	912	1005	997	1019	1163	1171	
41:	1323	1548	1647	1679	1917	2212	2586	3151	
49:	3534	3560	3596	3627	3659	3898	4203	4738	
57:	9016	20032	22159	10449	2526	1201	1266	1391	
65:	1423	1630	1622	1498	1611	1546	1537	1493	
73:	1536	1597	1558	1587	1603	1564	1519	1617	
81:	1586	1620	1699	1810	2490	6194	10827	8204	
89:	2823	939	754	758	828	778	770	728	
97:	790	770	821	781	830	761	796	772	
105:	764	801	768	729	769	755	794	817	
113:	786	795	815	866	793	845	929	1648	
121:	2608	2397	1151	773	694	698	686	671	
129:	651	693	687	653	721	743	868	890	
137:	789	699	703	644	690	677	628	680	
145:	666	634	661	593	599	616	656	656	
153:	602	635	649	584	599	581	612	634	
161:	602	606	635	742	882	792	638	587	
169:	601	595	576	609	557	569	561	571	
177:	625	617	576	601	569	583	569	614	
185:	608	641	638	604	624	599	660	604	
193:	621	606	571	565	592	610	556	581	
201:	582	577	562	568	551	601	617	581	
209:	592	584	594	574	635	579	644	604	
217:	617	611	643	545	628	607	587	618	
225:	578	557	555	564	582	584	581	547	
233:	535	550	520	514	539	574	556	501	
241:	539	516	496	487	458	487	492	495	
249:	500	469	457	486	487	472	434	469	
257:	429	428	420	436	454	430	459	436	
265:	423	422	442	440	414	409	426	382	
273:	401	391	441	434	423	425	402	376	
281:	378	408	399	417	397	406	408	375	
289:	367	376	425	406	389	397	416	398	
297:	396	386	394	387	383	379	342	379	
305:	312	385	388	355	407	387	395	380	
313:	375	374	359	366	374	342	371	370	
321:	364	355	347	329	323	334	343	370	
329:	348	366	373	365	372	317	319	355	
337:	329	369	305	341	345	343	347	332	
345:	356	356	360	354	327	345	376	353	
353:	325	299	355	347	308	313	352	342	
361:	319	340	334	309	340	337	344	346	

369: 308 312 293 301 317 296 312 321

Sample Title: GAS-1302

Channel	305	300	272	311	296	283	341	298
377:	305	300	272	311	296	283	341	298
385:	323	318	304	301	304	357	374	356
393:	324	301	326	289	305	309	292	317
401:	313	326	336	275	310	313	301	286
409:	292	315	356	320	300	297	324	323
417:	341	320	297	330	331	327	328	303
425:	294	299	320	302	339	343	293	318
433:	284	320	325	352	332	350	341	284
441:	311	289	296	350	327	330	306	327
449:	298	323	325	336	331	317	354	318
457:	306	364	305	330	331	361	314	319
465:	340	353	300	326	311	322	329	322
473:	333	316	315	295	295	299	280	261
481:	245	288	259	240	252	253	228	223
489:	248	230	246	250	242	223	237	216
497:	236	248	243	236	248	223	225	202
505:	230	235	223	221	247	244	248	253
513:	238	216	235	226	237	229	218	224
521:	236	210	212	206	227	207	207	205
529:	209	201	227	224	206	173	179	204
537:	215	192	195	200	234	207	191	196
545:	214	197	196	178	198	204	189	180
553:	167	199	165	191	171	201	183	200
561:	193	181	204	186	165	196	190	164
569:	190	192	161	185	177	191	147	179
577:	170	189	200	169	178	194	174	174
585:	187	175	174	183	181	188	171	188
593:	146	175	206	191	175	174	193	179
601:	165	158	156	165	178	175	177	167
609:	169	179	191	193	150	162	159	167
617:	154	164	197	178	171	170	170	169
625:	183	172	180	168	178	178	141	175
633:	175	159	174	153	161	166	148	156
641:	177	172	183	172	170	186	156	186
649:	156	180	167	157	168	179	180	151
657:	181	210	767	2536	4351	3404	1224	256
665:	136	144	168	154	141	148	134	148
673:	144	151	165	141	139	116	141	141
681:	120	138	134	135	159	139	155	137
689:	146	142	129	138	134	155	125	146
697:	144	134	159	141	134	148	178	142
705:	133	131	146	165	136	138	129	153
713:	139	139	154	164	162	143	153	137
721:	142	136	137	148	154	154	164	152
729:	143	146	143	139	129	138	184	136
737:	121	136	141	126	168	150	158	141
745:	121	160	153	169	144	129	131	159
753:	158	166	156	134	155	140	154	135
761:	142	167	166	131	167	141	127	123
769:	168	137	136	145	149	157	152	161
777:	160	143	164	157	143	166	150	166
785:	143	167	150	133	165	155	149	136
793:	147	151	162	167	170	177	137	141

801: 163 146 160 134 164 145 137 143

Sample Title: GAS-1302

Channel	-----	-----	-----	-----	-----	-----	-----	-----
809:	146	148	161	170	164	161	151	140
817:	156	158	166	162	160	148	160	165
825:	166	175	162	173	167	161	149	144
833:	154	146	165	158	186	149	161	168
841:	155	160	157	152	154	183	144	170
849:	181	166	162	166	151	164	156	167
857:	151	162	170	188	161	176	169	154
865:	159	157	162	175	162	159	184	178
873:	161	182	174	175	195	179	189	184
881:	186	182	172	181	192	212	179	166
889:	183	151	180	194	161	174	179	179
897:	242	234	206	182	168	190	208	197
905:	206	209	184	176	167	230	222	217
913:	203	165	192	187	227	187	199	190
921:	217	204	205	187	213	199	228	188
929:	214	212	204	201	227	198	188	201
937:	209	188	227	233	198	204	211	209
945:	205	242	233	208	224	218	199	235
953:	195	209	204	202	193	224	211	216
961:	209	191	175	185	168	180	182	175
969:	187	177	172	154	189	167	152	179
977:	163	184	152	154	148	155	171	164
985:	163	150	159	154	157	137	150	160
993:	134	179	154	171	150	130	176	182
1001:	152	156	167	132	154	136	145	130
1009:	144	148	163	173	156	147	160	140
1017:	120	147	139	138	157	163	167	135
1025:	168	151	136	154	147	164	147	157
1033:	139	140	138	132	159	154	152	144
1041:	134	157	139	145	131	134	128	130
1049:	154	126	125	143	123	126	140	144
1057:	152	155	142	143	143	134	161	154
1065:	134	143	139	138	129	127	158	139
1073:	139	133	131	153	137	152	132	136
1081:	138	151	141	144	141	162	137	145
1089:	133	146	128	139	150	152	133	142
1097:	141	136	147	153	126	148	140	157
1105:	152	178	147	147	128	120	120	158
1113:	153	138	130	118	131	127	119	128
1121:	117	100	92	103	97	102	88	93
1129:	90	94	104	116	83	103	90	90
1137:	79	83	81	73	80	83	95	92
1145:	86	81	74	62	77	83	88	89
1153:	75	72	86	59	74	76	66	73
1161:	89	78	65	88	89	70	82	85
1169:	85	155	780	2320	3428	2477	980	182
1177:	60	53	60	63	58	51	48	46
1185:	44	47	44	44	47	58	59	49
1193:	50	44	44	54	33	49	48	57
1201:	46	38	43	33	44	41	39	36
1209:	42	31	23	35	35	37	29	38
1217:	32	41	32	27	36	36	35	28
1225:	32	25	28	30	32	30	25	27

1233: 26 29 20 22 26 34 17 28

Sample Title: GAS-1302

Channel	1	2	3	4	5	6	7	8
1241:	30	29	27	22	21	21	19	21
1249:	22	25	32	20	28	21	23	15
1257:	14	19	19	22	18	19	20	25
1265:	14	20	24	17	24	12	14	23
1273:	9	16	24	17	17	18	21	22
1281:	27	12	22	18	15	24	23	16
1289:	13	20	14	15	33	19	26	20
1297:	18	23	14	20	14	14	16	15
1305:	15	26	21	20	14	13	14	14
1313:	9	16	8	25	14	25	12	16
1321:	17	24	20	20	19	26	22	29
1329:	69	407	1532	2937	2695	1250	246	33
1337:	10	8	6	4	5	8	8	5
1345:	6	10	6	5	9	7	2	8
1353:	3	6	6	3	4	8	3	3
1361:	2	5	3	11	2	7	5	3
1369:	3	8	9	3	5	9	2	6
1377:	4	6	4	3	1	6	4	8
1385:	3	5	8	6	5	3	6	3
1393:	7	2	4	2	7	7	6	7
1401:	3	3	4	3	2	2	11	3
1409:	9	3	5	9	2	8	1	1
1417:	2	3	1	7	4	4	3	3
1425:	1	5	1	3	4	6	3	7
1433:	0	4	5	5	5	2	6	3
1441:	5	5	6	3	3	1	3	6
1449:	6	2	4	2	6	6	2	2
1457:	5	7	4	3	2	7	2	6
1465:	6	3	2	4	6	5	7	3
1473:	8	5	4	9	4	6	2	3
1481:	2	5	4	6	3	2	5	4
1489:	1	2	3	1	4	3	3	2
1497:	3	5	1	5	3	2	5	6
1505:	3	3	1	4	6	4	1	6
1513:	1	4	5	6	1	1	2	4
1521:	1	8	2	3	3	6	3	3
1529:	2	3	4	7	5	3	4	2
1537:	4	3	5	5	7	3	5	7
1545:	4	6	8	9	4	5	6	1
1553:	6	5	4	5	4	2	5	4
1561:	8	6	3	4	3	4	5	2
1569:	2	3	1	4	5	5	6	3
1577:	8	4	10	6	5	4	3	1
1585:	3	6	2	5	6	4	2	5
1593:	5	2	3	3	4	5	0	4
1601:	3	4	9	1	5	8	3	2
1609:	4	1	0	4	5	3	3	5
1617:	4	2	3	4	0	4	4	2
1625:	1	3	2	8	4	3	1	1
1633:	4	6	4	3	3	2	2	1
1641:	3	6	1	2	2	2	1	4
1649:	5	1	3	6	3	5	2	0
1657:	3	3	2	1	2	1	4	5

1665: 2 4 2 2 3 1 3 3

Sample Title: GAS-1302

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1673:	2	4	2	2	4	5	3	2
1681:	2	2	4	5	4	1	3	5
1689:	1	2	2	1	1	2	1	2
1697:	2	4	3	1	1	0	4	4
1705:	4	1	4	1	3	2	3	1
1713:	3	1	3	5	2	2	0	2
1721:	1	4	1	2	5	0	4	3
1729:	2	2	6	6	3	1	1	2
1737:	4	0	0	2	0	4	1	4
1745:	4	1	2	5	3	1	1	4
1753:	2	0	2	2	2	3	1	4
1761:	1	1	1	4	6	5	1	1
1769:	3	2	1	2	3	3	1	2
1777:	1	4	1	1	2	0	2	4
1785:	2	1	2	6	2	3	7	3
1793:	1	3	2	2	1	3	2	4
1801:	3	1	0	0	0	0	3	0
1809:	2	1	4	1	0	1	4	2
1817:	1	1	3	3	3	1	0	4
1825:	0	3	2	2	1	4	2	2
1833:	1	12	18	20	21	12	4	1
1841:	2	1	5	1	3	2	4	1
1849:	2	3	1	1	2	1	1	1
1857:	3	2	2	4	5	1	3	0
1865:	2	0	5	1	1	2	0	5
1873:	4	3	2	0	4	1	4	2
1881:	1	1	1	5	3	1	2	0
1889:	2	5	3	1	3	1	1	1
1897:	0	1	0	6	2	0	2	1
1905:	3	4	2	1	4	1	1	3
1913:	1	1	0	2	4	2	2	2
1921:	3	3	1	1	1	2	2	3
1929:	2	2	2	3	4	1	1	3
1937:	0	1	1	4	2	1	2	2
1945:	2	1	3	2	6	0	2	1
1953:	2	5	4	4	0	3	3	2
1961:	0	4	0	1	2	1	1	0
1969:	3	1	1	2	3	5	2	3
1977:	1	2	3	1	2	1	1	0
1985:	4	1	0	2	3	2	1	0
1993:	2	2	1	1	2	5	2	4
2001:	2	5	1	0	1	4	1	3
2009:	1	1	1	3	1	2	6	1
2017:	0	2	1	2	0	2	1	2
2025:	3	2	2	2	1	3	0	2
2033:	3	1	2	3	0	0	1	2
2041:	1	0	2	1	2	3	0	4
2049:	0	1	3	0	1	2	2	0
2057:	2	2	5	2	2	4	1	2
2065:	3	0	2	0	0	0	2	2
2073:	2	2	3	2	0	0	2	2
2081:	2	2	6	5	1	0	2	3
2089:	1	1	1	0	0	4	3	2

2097: 3 3 4 2 1 1 5 3

Sample Title: GAS-1302

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

2529: 0 0 0 0 0 0 0 1 0

Sample Title: GAS-1302

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

2961: 0 0 0 0 0 0 0 0

Sample Title: GAS-1302

Channel	1	2	3	4	5	6	7	8
2969:	0	0	0	0	0	0	0	0
2977:	0	0	0	0	0	0	0	0
2985:	0	0	0	0	1	0	0	0
2993:	0	0	0	0	0	0	0	0
3001:	0	0	0	0	0	0	0	0
3009:	0	0	0	0	0	1	0	1
3017:	0	0	1	1	0	0	0	1
3025:	1	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	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	1	0	0	0	0	0
3081:	0	0	1	0	0	0	0	0
3089:	0	0	0	0	0	0	0	0
3097:	1	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:	1	0	0	0	0	0	0	0
3129:	0	0	0	0	0	0	0	0
3137:	0	0	0	0	1	0	0	0
3145:	0	0	0	0	0	0	0	0
3153:	0	0	0	0	0	0	0	0
3161:	0	0	0	0	0	0	0	0
3169:	1	0	0	2	0	0	0	0
3177:	0	0	0	0	0	0	0	0
3185:	0	0	0	0	0	1	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	1	0	0
3233:	0	0	0	0	0	0	0	0
3241:	0	0	0	0	0	0	0	0
3249:	0	0	0	0	0	0	0	0
3257:	0	0	0	0	0	0	0	0
3265:	0	0	1	0	0	0	0	0
3273:	0	0	0	0	0	0	0	0
3281:	0	0	0	0	0	0	0	0
3289:	0	0	0	0	0	0	1	0
3297:	0	0	0	0	0	0	0	0
3305:	0	0	0	0	0	0	0	0
3313:	0	0	0	0	0	1	0	0
3321:	0	0	0	0	0	0	0	0
3329:	0	0	0	0	0	0	0	0
3337:	0	0	0	0	0	0	0	0
3345:	1	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	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	-----	-----	-----	-----	-----	-----	-----
3401:	0	0	0	0	0	0	0
3409:	0	0	0	0	0	0	0
3417:	0	0	0	1	0	0	0
3425:	0	0	0	0	0	0	0
3433:	0	0	0	0	1	0	1
3441:	0	0	0	0	0	0	0
3449:	0	0	0	0	0	0	0
3457:	0	0	0	0	0	0	0
3465:	0	0	0	0	0	0	0
3473:	0	0	0	0	0	0	0
3481:	0	0	0	0	0	0	0
3489:	0	0	0	1	1	0	0
3497:	0	0	0	0	0	0	0
3505:	0	1	0	0	0	0	0
3513:	0	0	0	0	0	0	0
3521:	0	1	0	0	0	0	0
3529:	0	0	0	0	0	0	1
3537:	1	0	0	1	0	0	0
3545:	0	0	0	0	0	0	0
3553:	0	0	0	0	0	0	0
3561:	0	0	0	0	0	0	0
3569:	0	0	1	0	0	1	0
3577:	0	0	0	0	0	0	0
3585:	0	0	0	0	0	0	0
3593:	0	0	0	0	0	0	0
3601:	0	0	0	0	0	0	0
3609:	0	0	1	0	0	0	0
3617:	0	0	0	0	0	0	0
3625:	0	0	0	0	0	0	0
3633:	1	0	0	0	0	0	0
3641:	0	0	0	0	0	0	0
3649:	0	0	0	0	0	0	0
3657:	0	0	0	0	0	0	0
3665:	0	1	0	0	0	0	0
3673:	0	0	0	0	0	0	0
3681:	0	0	0	0	0	0	0
3689:	0	1	0	0	0	0	0
3697:	0	0	0	0	0	0	0
3705:	0	0	0	0	0	0	0
3713:	1	0	0	0	0	0	1
3721:	0	0	0	0	0	0	1
3729:	0	1	0	0	0	0	0
3737:	0	0	0	0	0	0	0
3745:	0	0	0	0	0	0	0
3753:	0	0	0	0	0	0	0
3761:	0	0	0	0	0	0	0
3769:	1	0	0	0	0	0	0
3777:	0	0	1	0	0	0	0
3785:	0	0	0	0	0	0	0
3793:	0	0	0	1	1	0	0
3801:	0	0	0	0	0	0	0
3809:	0	0	0	0	0	0	0
3817:	0	0	0	0	0	0	0

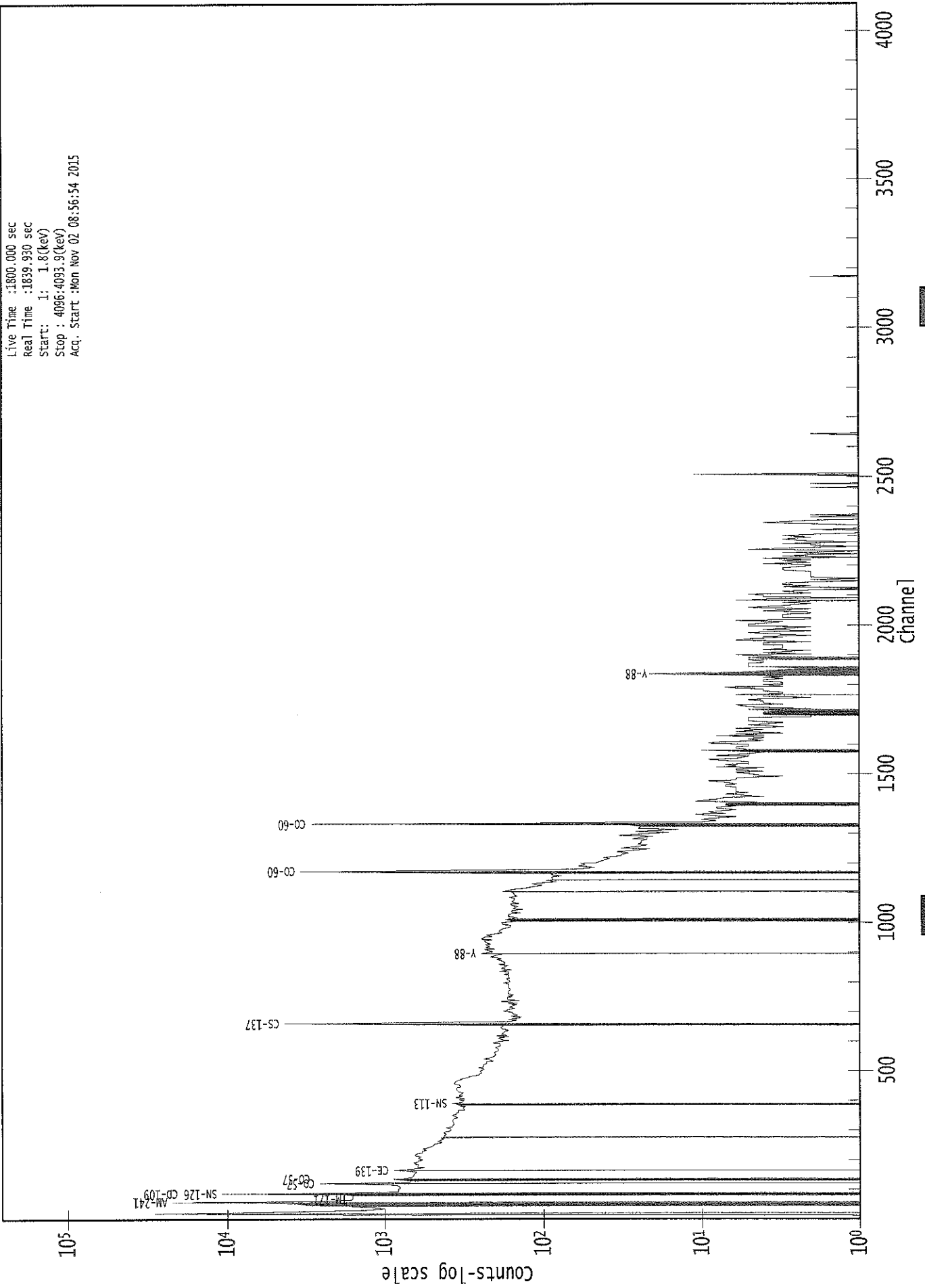
3825: 0 0 0 0 0 0 0 0 0

Sample Title: GAS-1302

Channel	-----	-----	-----	-----	-----	-----	-----	-----
3833:	0	0	0	0	0	0	0	0
3841:	0	0	0	0	0	0	0	0
3849:	0	0	0	0	0	0	0	0
3857:	0	0	0	0	0	1	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:	0	1	0	0	0	0	0	0
3913:	0	0	0	0	0	0	0	0
3921:	0	0	0	0	0	0	0	0
3929:	0	0	1	0	0	0	0	0
3937:	0	0	0	0	0	0	0	0
3945:	0	0	0	0	0	0	0	0
3953:	0	0	0	0	0	0	0	0
3961:	0	0	0	0	0	0	0	0
3969:	0	0	0	1	0	0	1	0
3977:	0	0	0	0	0	0	0	0
3985:	0	0	0	0	0	0	0	0
3993:	0	0	0	0	0	0	0	0
4001:	0	0	0	0	0	0	0	0
4009:	0	0	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	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

0000028964.CNF

Live Time :1800.000 sec
Real Time :1839.930 sec
Start: 1: 1.8(keV)
Stop : 4096:4093.9(keV)
Acq. Start :Mon Nov 02 08:56:54 2015



48284

Analysis Report for 1510064-02
BLANK



GAMMA SPECTRUM ANALYSIS

Sample Identification : 1510064-02
Sample Description : BLANK
Sample Type : SOIL

Sample Size : 7.834E+02 grams
Facility : Countroom

Sample Taken On : 11/2/2015 6:42:40AM
Acquisition Started : 11/2/2015 7:16:42AM

Procedure : GAS-1402 pCi
Operator : Administrator
Detector Name : GE4
Geometry : GAS-1402
Live Time : 3600.0 seconds
Real Time : 3639.3 seconds

Dead Time : 1.08 %

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 : 28961

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
11/3/15

Analysis Report for 1510064-02

BLANK

PEAK LOCATE REPORT

Peak Locate Performed on : 11/2/2015 8:17:23AM
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	342.97	342.35	0.0000	0.00
2	478.41	477.85	0.0000	0.00
3	600.97	600.47	0.0000	0.00
4	629.27	628.79	0.0000	0.00
5	667.16	666.70	0.0000	0.00
6	698.33	697.88	0.0000	0.00
7	774.52	774.11	0.0000	0.00
8	779.68	779.28	0.0000	0.00
9	816.58	816.19	0.0000	0.00
10	863.58	863.22	0.0000	0.00
11	877.52	877.16	0.0000	0.00
12	952.77	952.45	0.0000	0.00
13	1019.28	1019.00	0.0000	0.00
14	1045.28	1045.02	0.0000	0.00
15	1147.13	1146.92	0.0000	0.00
16	1373.90	1373.82	0.0000	0.00
17	1458.61	1458.58	0.0000	0.00

? = Adjacent peak noted

Errors quoted at 2.000sigma

Analysis Report for 1510064-02

BLANK

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/2/2015 8:17:23AM

Peak Analysis From Channel : 1

Peak Analysis To Channel : 4096

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
1	342.97	339 -	346	342.35	1.87E+01	19.70	5.25E+01	2.76
2	478.41	474 -	483	477.85	1.49E+01	15.26	2.42E+01	6.87
3	600.97	597 -	604	600.47	2.48E+01	12.00	6.50E+00	1.83
4	629.27	623 -	634	628.79	2.23E+01	15.23	1.74E+01	8.36
5	667.16	661 -	672	666.70	1.53E+01	14.28	1.75E+01	7.59
6	698.33	693 -	701	697.88	1.56E+01	15.28	2.49E+01	3.73
7	774.52	771 -	776	774.11	7.00E+00	9.38	1.20E+01	2.23
8	779.68	777 -	782	779.28	7.90E+00	7.62	4.20E+00	1.02
9	816.58	810 -	821	816.19	1.82E+01	10.95	5.57E+00	6.64
10	863.58	860 -	865	863.22	7.50E+00	6.71	3.00E+00	1.79
11	877.52	873 -	880	877.16	9.13E+00	10.39	1.17E+01	5.59
12	952.77	949 -	956	952.45	1.03E+01	8.00	3.33E+00	4.64
13	1019.28	1015 -	1023	1019.00	1.05E+01	10.02	9.00E+00	6.12
14	1045.28	1040 -	1048	1045.02	1.46E+01	9.39	4.88E+00	3.68
15	1147.13	1144 -	1149	1146.92	4.50E+00	5.74	3.00E+00	1.25
16	1373.90	1370 -	1377	1373.82	9.96E+00	8.00	4.08E+00	1.03
17	1458.61	1454 -	1463	1458.58	7.80E+00	8.06	4.40E+00	6.64

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 : 11/2/2015 8:17:23AM

Peak Analysis From Channel : 1

Peak Analysis To Channel : 4096

Analysis Report for 1510064-02

BLANK

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
1	342.97	339 -	346	1.87E+01	19.70	5.25E+01	1.45E+01
2	478.41	474 -	483	1.49E+01	15.26	2.42E+01	1.08E+01
3	600.97	597 -	604	2.48E+01	12.00	6.50E+00	5.51E+00
4	629.27	623 -	634	2.23E+01	15.23	1.74E+01	9.82E+00
5	667.16	661 -	672	1.53E+01	14.28	1.75E+01	9.83E+00
6	698.33	693 -	701	1.56E+01	15.28	2.49E+01	1.08E+01
7	774.52	771 -	776	7.00E+00	9.38	1.20E+01	6.37E+00
8	779.68	777 -	782	7.90E+00	7.62	4.20E+00	4.22E+00
9	816.58	810 -	821	1.82E+01	10.95	5.57E+00	5.64E+00
10	863.58	860 -	865	7.50E+00	6.71	3.00E+00	3.18E+00
11	877.52	873 -	880	9.13E+00	10.39	1.17E+01	6.95E+00
12	952.77	949 -	956	1.03E+01	8.00	3.33E+00	3.91E+00
13	1019.28	1015 -	1023	1.05E+01	10.02	9.00E+00	6.29E+00
14	1045.28	1040 -	1048	1.46E+01	9.39	4.88E+00	4.50E+00
15	1147.13	1144 -	1149	4.50E+00	5.74	3.00E+00	3.18E+00
16	1373.90	1370 -	1377	9.96E+00	8.00	4.08E+00	4.04E+00
17	1458.61	1454 -	1463	7.80E+00	8.06	4.40E+00	4.78E+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 : 11/2/2015 8:17:23AM

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

Tentative NID Library : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB
 Peak Match Tolerance : 1.000 keV

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
1	342.97	339 -	346	342.35	1.87E+01	19.70	5.25E+01	HF-175
2	478.41	474 -	483	477.85	1.49E+01	15.26	2.42E+01	BE-7
3	600.97	597 -	604	600.47	2.48E+01	12.00	6.50E+00	SB-125
4	629.27	623 -	634	628.79	2.23E+01	15.23	1.74E+01	.....
5	667.16	661 -	672	666.70	1.53E+01	14.28	1.75E+01	SB-126
6	698.33	693 -	701	697.88	1.56E+01	15.28	2.49E+01	.....
7	774.52	771 -	776	774.11	7.00E+00	9.38	1.20E+01	.....
8	779.68	777 -	782	779.28	7.90E+00	7.62	4.20E+00	EU-152

Analysis Report for 1510064-02

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Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
9	816.58	810 -	821	816.19	1.82E+01	10.95	5.57E+00	LA-140
10	863.58	860 -	865	863.22	7.50E+00	6.71	3.00E+00	.....
11	877.52	873 -	880	877.16	9.13E+00	10.39	1.17E+01	.....
12	952.77	949 -	956	952.45	1.03E+01	8.00	3.33E+00	.....
13	1019.28	1015 -	1023	1019.00	1.05E+01	10.02	9.00E+00	.....
14	1045.28	1040 -	1048	1045.02	1.46E+01	9.39	4.88E+00	.....
15	1147.13	1144 -	1149	1146.92	4.50E+00	5.74	3.00E+00	.....
16	1373.90	1370 -	1377	1373.82	9.96E+00	8.00	4.08E+00	.....
17	1458.61	1454 -	1463	1458.58	7.80E+00	8.06	4.40E+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 : 11/2/2015 8:17:23AM

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
1	342.97	1.87E+01	19.70	6.77E-03	7.90E-04
2	478.41	1.49E+01	15.26	4.92E-03	6.09E-04
3	600.97	2.48E+01	12.00	3.93E-03	4.29E-04
4	629.27	2.23E+01	15.23	3.75E-03	3.88E-04
5	667.16	1.53E+01	14.28	3.54E-03	3.37E-04
6	698.33	1.56E+01	15.28	3.39E-03	3.20E-04
7	774.52	7.00E+00	9.38	3.06E-03	2.77E-04
8	779.68	7.90E+00	7.62	3.04E-03	2.74E-04
9	816.58	1.82E+01	10.95	2.90E-03	2.54E-04
10	863.58	7.50E+00	6.71	2.75E-03	2.27E-04
11	877.52	9.13E+00	10.39	2.71E-03	2.19E-04
12	952.77	1.03E+01	8.00	2.50E-03	2.01E-04
13	1019.28	1.05E+01	10.02	2.34E-03	1.92E-04
14	1045.28	1.46E+01	9.39	2.29E-03	1.89E-04
15	1147.13	4.50E+00	5.74	2.10E-03	1.76E-04
16	1373.90	9.96E+00	8.00	1.78E-03	2.07E-04
17	1458.61	7.80E+00	8.06	1.69E-03	1.89E-04

Analysis Report for 1510064-02

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

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 11/2/2015 8:17:23AM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000028944.CNF

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
1	342.97	1.87E+01	19.70			1.87E+01	1.97E+01
2	478.41	1.49E+01	15.26			1.49E+01	1.53E+01
3	600.97	2.48E+01	12.00			2.48E+01	1.20E+01
4	629.27	2.23E+01	15.23			2.23E+01	1.52E+01
5	667.16	1.53E+01	14.28			1.53E+01	1.43E+01
6	698.33	1.56E+01	15.28			1.56E+01	1.53E+01
7	774.52	7.00E+00	9.38			7.00E+00	9.38E+00
8	779.68	7.90E+00	7.62			7.90E+00	7.62E+00
9	816.58	1.82E+01	10.95			1.82E+01	1.10E+01
10	863.58	7.50E+00	6.71			7.50E+00	6.71E+00
11	877.52	9.13E+00	10.39			9.13E+00	1.04E+01
12	952.77	1.03E+01	8.00			1.03E+01	8.00E+00
13	1019.28	1.05E+01	10.02			1.05E+01	1.00E+01
14	1045.28	1.46E+01	9.39			1.46E+01	9.39E+00
15	1147.13	4.50E+00	5.74			4.50E+00	5.74E+00
16	1373.90	9.96E+00	8.00			9.96E+00	8.00E+00
17	1458.61	7.80E+00	8.06			7.80E+00	8.06E+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 1510064-02

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AREA CORRECTION REPORT REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 11/2/2015 8:17:23AM
 Ref. Peak Energy : 0.00 Reference Date :
 Peak Ratio : 0.00 Uncertainty : 0.00
 Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000028944.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	342.97	1.87E+01	19.70			1.87E+01	1.97E+01
2	478.41	1.49E+01	15.26			1.49E+01	1.53E+01
3	600.97	2.48E+01	12.00			2.48E+01	1.20E+01
4	629.27	2.23E+01	15.23			2.23E+01	1.52E+01
5	667.16	1.53E+01	14.28			1.53E+01	1.43E+01
6	698.33	1.56E+01	15.28			1.56E+01	1.53E+01
7	774.52	7.00E+00	9.38			7.00E+00	9.38E+00
8	779.68	7.90E+00	7.62			7.90E+00	7.62E+00
9	816.58	1.82E+01	10.95			1.82E+01	1.10E+01
10	863.58	7.50E+00	6.71			7.50E+00	6.71E+00
11	877.52	9.13E+00	10.39			9.13E+00	1.04E+01
12	952.77	1.03E+01	8.00			1.03E+01	8.00E+00
13	1019.28	1.05E+01	10.02			1.05E+01	1.00E+01
14	1045.28	1.46E+01	9.39			1.46E+01	9.39E+00
15	1147.13	4.50E+00	5.74			4.50E+00	5.74E+00
16	1373.90	9.96E+00	8.00			9.96E+00	8.00E+00
17	1458.61	7.80E+00	8.06			7.80E+00	8.06E+00

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

NUCLIDE IDENTIFICATION REPORT

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

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
BE-7	0.898	477.59 *	10.42	2.79E-01	2.88E-01

Analysis Report for 1510064-02

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<i>Nuclide Name</i>	<i>Id Confidence</i>	<i>Energy (keV)</i>	<i>Yield(%)</i>	<i>Activity (pCi/grams)</i>	<i>Activity Uncertainty</i>
HF-175	0.971	343.40 *	84.00	3.16E-02	3.34E-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 : 11/2/2015 8:17:23AM

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>
3	600.97	6.87500E-03	24.24	Tol.	SB-125
4	629.27	6.19176E-03	34.17		
5	667.16	4.24190E-03	46.77	Tol.	SB-126
6	698.33	4.32540E-03	49.07		
7	774.52	1.94444E-03	67.01		
8	779.68	2.19444E-03	48.20	Tol.	EU-152
9	816.58	5.05952E-03	30.07	Tol.	LA-140
10	863.58	2.08333E-03	44.72		
11	877.52	2.53704E-03	56.89		
12	952.77	2.87037E-03	38.71		
13	1019.28	2.91667E-03	47.74		
14	1045.28	4.04412E-03	32.26		
15	1147.13	1.25000E-03	63.83		
16	1373.90	2.76620E-03	40.17		
17	1458.61	2.16667E-03	51.68		

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 1510064-02
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NUCLIDE IDENTIFICATION REPORT

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

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
BE-7	0.89	477.59 *	10.42	2.79E-01	2.88E-01
HF-175	0.97	343.40 *	84.00	3.16E-02	3.34E-02

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

INTERFERENCE CORRECTED REPORT

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
BE-7	0.898	2.79E-01	2.88E-01	
HF-175	0.971	3.16E-02	3.34E-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 1510064-02

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UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/2/2015 8:17:23AM
 Peak Locate From Channel : 1
 Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
3	600.97	6.87500E-03	24.24	Tol.	SB-125
4	629.27	6.19176E-03	34.17		
5	667.16	4.24190E-03	46.77	Tol.	SB-126
6	698.33	4.32540E-03	49.07		
7	774.52	1.94444E-03	67.01		
8	779.68	2.19444E-03	48.20	Tol.	EU-152
9	816.58	5.05952E-03	30.07	Tol.	LA-140
10	863.58	2.08333E-03	44.72		
11	877.52	2.53704E-03	56.89		
12	952.77	2.87037E-03	38.71		
13	1019.28	2.91667E-03	47.74		
14	1045.28	4.04412E-03	32.26		
15	1147.13	1.25000E-03	63.83		
16	1373.90	2.76620E-03	40.17		
17	1458.61	2.16667E-03	51.68		

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

NUCLIDE MDA REPORT

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

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	BE-7	477.59	*	10.42	2.79E-01	4.56E-01
+	NA-22	1274.54		99.94	-8.40E-03	7.11E-02

Analysis Report for 1510064-02

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	NA-24	1368.53	99.99	-1.51E-02	7.40E-02	7.40E-02
		2754.09	99.86	-1.62E-03		9.03E-02
+	AL-26	1808.65	99.76	2.70E-02	9.64E-02	9.64E-02
+	K-40	1460.81	10.67	0.00E+00	6.99E-01	6.99E-01
+	AR-41	1293.64	99.16	-2.63E-02	9.23E-02	9.23E-02
+	TI-44	67.88	94.40	-6.89E-03	2.73E-02	2.73E-02
		78.34	96.00	-6.58E-03		2.79E-02
+	SC-46	889.25	99.98	2.56E-03	6.31E-02	7.22E-02
		1120.51	99.99	8.95E-03		6.31E-02
+	V-48	983.52	99.98	-3.70E-02	7.18E-02	7.18E-02
		1312.10	97.50	-5.31E-03		8.86E-02
+	CR-51	320.08	9.83	-7.60E-02	4.85E-01	4.85E-01
+	MN-54	834.83	99.97	-1.54E-02	6.99E-02	6.99E-02
+	CO-56	846.75	99.96	2.05E-02	7.09E-02	7.09E-02
		1037.75	14.03	6.92E-02		4.45E-01
		1238.25	67.00	5.13E-02		1.28E-01
		1771.40	15.51	0.00E+00		1.17E-01
		2598.48	16.90	-1.76E-02		3.88E-01
+	CO-57	122.06	85.51	1.35E-02	3.56E-02	3.56E-02
		136.48	10.60	8.32E-02		2.95E-01
+	CO-58	810.76	99.40	5.50E-03	5.98E-02	5.98E-02
+	FE-59	1099.22	56.50	-1.30E-02	1.23E-01	1.23E-01
		1291.56	43.20	-2.36E-02		1.42E-01
+	CO-60	1173.22	100.00	7.16E-03	6.12E-02	6.12E-02
		1332.49	100.00	0.00E+00		6.30E-02
+	ZN-65	1115.52	50.75	-2.05E-02	6.46E-02	6.46E-02
+	GA-67	93.31	35.70	8.35E-02	9.03E-02	9.03E-02
		208.95	2.24	7.90E-01		1.87E+00
		300.22	16.00	4.37E-02		2.81E-01
+	SE-75	121.11	16.70	2.09E-04	5.08E-02	1.79E-01
		136.00	59.20	-1.99E-03		5.08E-02
		264.65	59.80	2.69E-03		7.71E-02
		279.53	25.20	-2.04E-02		1.76E-01
		400.65	11.40	3.39E-03		4.30E-01
+	RB-82	776.52	13.00	3.33E-01	5.81E-01	5.81E-01
+	RB-83	520.41	46.00	2.30E-02	1.22E-01	1.22E-01
		529.64	30.30	-6.85E-02		1.63E-01
		552.65	16.40	1.03E-01		3.49E-01
+	KR-85	513.99	0.43	1.11E+01	1.72E+01	1.72E+01
+	SR-85	513.99	99.27	4.85E-02	7.50E-02	7.50E-02
+	Y-88	898.02	93.40	-4.49E-02	5.11E-02	7.03E-02
		1836.01	99.38	-6.94E-03		5.11E-02
+	NB-93M	16.57	9.43	2.09E-01	2.02E-01	2.02E-01
+	NB-94	702.63	100.00	-1.64E-02	7.26E-02	7.26E-02
		871.10	100.00	1.05E-02		7.28E-02
+	NB-95	765.79	99.81	3.83E-02	7.77E-02	7.77E-02
+	NB-95M	235.69	25.00	-2.15E-02	1.79E-01	1.79E-01

Analysis Report for 1510064-02

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	ZR-95	724.18	43.70	-3.42E-03	9.65E-02	1.54E-01
		756.72	55.30	-2.12E-02		9.65E-02
+	MO-99	181.06	6.20	2.68E-01	4.61E-01	6.78E-01
		739.58	12.80	-1.18E-01		4.61E-01
		778.00	4.50	7.83E-01		1.63E+00
+	RU-103	497.08	89.00	-1.35E-02	6.01E-02	6.01E-02
+	RU-106	621.84	9.80	1.44E-01	7.15E-01	7.15E-01
+	AG-108M	433.93	89.90	-1.14E-03	5.21E-02	5.21E-02
		614.37	90.40	3.24E-02		8.45E-02
		722.95	90.50	-1.29E-02		7.61E-02
+	CD-109	88.03	3.72	-4.15E-01	7.89E-01	7.89E-01
+	AG-110M	657.75	93.14	-2.10E-02	4.99E-02	4.99E-02
		677.61	10.53	-1.53E-01		5.25E-01
		706.67	16.46	6.22E-02		4.83E-01
		763.93	21.98	1.55E-01		3.45E-01
		884.67	71.63	-1.28E-04		9.70E-02
		1384.27	23.94	-2.77E-02		2.44E-01
+	CD-113M	263.70	0.02	1.38E+01	1.96E+02	1.96E+02
+	SN-113	255.12	1.93	8.01E-01	6.31E-02	2.22E+00
		391.69	64.90	-3.48E-02		6.31E-02
+	TE123M	159.00	84.10	-9.29E-03	3.89E-02	3.89E-02
+	SB-124	602.71	97.87	0.00E+00	7.16E-02	7.16E-02
		645.85	7.26	3.05E-02		7.48E-01
		722.78	11.10	-9.53E-02		6.06E-01
		1691.02	49.00	7.53E-03		1.98E-01
+	I-125	35.49	6.49	-3.99E-04	3.12E-01	3.12E-01
+	SB-125	176.33	6.89	-1.75E-01	1.78E-01	5.02E-01
		427.89	29.33	3.60E-02		1.78E-01
		463.38	10.35	-6.74E-02		4.82E-01
		600.56	17.80	2.31E-02		3.80E-01
		635.90	11.32	-4.01E-02		5.24E-01
+	SB-126	414.70	83.30	-2.25E-02	5.84E-02	5.84E-02
		666.33	99.60	4.24E-02		6.80E-02
		695.00	99.60	-1.32E-03		7.75E-02
		720.50	53.80	1.36E-02		1.31E-01
+	SN-126	87.57	37.00	-4.16E-02	7.91E-02	7.91E-02
+	SB-127	473.00	25.00	-2.01E-03	1.96E-01	2.12E-01
		685.20	35.70	1.49E-02		1.96E-01
		783.80	14.70	-1.59E-02		4.23E-01
+	I-129	29.78	57.00	1.53E-02	3.82E-02	3.82E-02
		33.60	13.20	-1.88E-02		1.54E-01
		39.58	7.52	-7.57E-02		2.68E-01
+	I-131	284.30	6.05	4.59E-02	4.81E-02	7.34E-01
		364.48	81.20	-9.27E-03		4.81E-02
		636.97	7.26	1.19E-02		7.82E-01
		722.89	1.80	-5.90E-01		3.75E+00
+	TE-132	49.72	13.10	9.03E-02	5.18E-02	1.69E-01
		228.16	88.00	1.25E-02		5.18E-02

Analysis Report for 1510064-02

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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	-2.25E-02	8.08E-02	8.08E-02
		302.84	17.80	-1.35E-02		2.47E-01
		356.01	60.00	8.60E-03		8.37E-02
+	I-133	529.87	86.30	-2.49E-02	5.95E-02	5.95E-02
+	XE-133	81.00	38.00	-1.97E-02	7.06E-02	7.06E-02
+	CS-134	563.23	8.38	-1.19E-01	6.76E-02	7.22E-01
		569.32	15.43	2.85E-03		4.10E-01
		604.70	97.60	-1.78E-02		6.76E-02
		795.84	85.40	2.57E-02		8.25E-02
		801.93	8.73	-8.78E-02		6.73E-01
+	CS-135	268.24	16.00	1.01E-01	3.00E-01	3.00E-01
+	I-135	1131.51	22.50	-6.73E-02	2.34E-01	2.94E-01
		1260.41	28.60	-9.75E-02		2.34E-01
		1678.03	9.54	-8.35E-03		8.09E-01
+	CS-136	153.22	7.46	-8.64E-02	7.46E-02	4.46E-01
		163.89	4.61	4.61E-01		7.95E-01
		176.55	13.56	-8.91E-02		2.56E-01
		273.65	12.66	-3.40E-02		3.53E-01
		340.57	48.50	-1.36E-02		1.03E-01
		818.50	99.70	4.06E-03		7.46E-02
		1048.07	79.60	-3.00E-02		1.06E-01
		1235.34	19.70	7.47E-02		4.15E-01
+	CS-137	661.65	85.12	-1.05E-03	6.53E-02	6.53E-02
+	LA-138	788.74	34.00	-9.38E-02	1.28E-01	1.70E-01
		1435.80	66.00	-2.79E-02		1.28E-01
+	CE-139	165.85	80.35	1.45E-02	4.46E-02	4.46E-02
+	BA-140	162.64	6.70	-7.86E-02	2.31E-01	5.14E-01
		304.84	4.50	-8.06E-01		9.18E-01
		423.70	3.20	5.39E-01		1.64E+00
		437.55	2.00	-1.98E+00		2.01E+00
		537.32	25.00	2.20E-02		2.31E-01
+	LA-140	328.77	20.50	6.69E-02	9.10E-02	2.60E-01
		487.03	45.50	2.04E-02		1.11E-01
		815.85	23.50	7.38E-02		3.00E-01
		1596.49	95.49	1.94E-02		9.10E-02
+	CE-141	145.44	48.40	-2.58E-02	6.80E-02	6.80E-02
+	CE-143	57.36	11.80	-2.22E-01	1.10E-01	1.76E-01
		293.26	42.00	-1.05E-02		1.10E-01
		664.55	5.20	2.76E-01		1.25E+00
+	CE-144	133.54	10.80	-5.52E-02	2.63E-01	2.63E-01
+	PM-144	476.78	42.00	-3.85E-03	7.49E-02	1.22E-01
		618.01	98.60	3.65E-02		7.49E-02
		696.49	99.49	2.45E-02		8.00E-02
+	PM-145	36.85	21.70	-1.94E-02	5.00E-02	9.27E-02
		37.36	39.70	2.36E-03		5.00E-02
		42.30	15.10	1.29E-02		1.38E-01
		72.40	2.31	1.80E-01		1.16E+00
+	PM-146	453.90	39.94	3.62E-03	1.40E-01	1.40E-01
		735.90	14.01	-1.41E-01		4.28E-01

Analysis Report for 1510064-02

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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	-6.41E-02	1.40E-01	4.35E-01
+	ND-147	91.11	28.90	1.15E-01	1.14E-01	1.14E-01
		531.02	13.10	-1.32E-01		3.89E-01
+	PM-149	285.90	3.10	5.36E-01	1.52E+00	1.52E+00
+	EU-152	121.78	20.50	5.63E-02	1.48E-01	1.48E-01
		244.69	5.40	-5.95E-02		7.80E-01
		344.27	19.13	-7.07E-02		2.62E-01
		778.89	9.20	3.79E-01		7.87E-01
		964.01	10.40	-7.76E-02		7.02E-01
		1085.78	7.22	-4.07E-01		8.48E-01
		1112.02	9.60	-9.25E-02		3.40E-01
		1407.95	14.94	-1.18E-01		4.83E-01
+	GD-153	97.43	31.30	-8.22E-02	8.76E-02	8.76E-02
		103.18	22.20	7.36E-02		1.22E-01
+	EU-154	123.07	40.50	2.03E-02	7.42E-02	7.42E-02
		723.30	19.70	-5.95E-02		3.50E-01
		873.19	11.50	-9.44E-02		5.97E-01
		996.32	10.30	-1.18E-02		7.04E-01
		1004.76	17.90	-3.47E-02		4.39E-01
		1274.45	35.50	-2.36E-02		2.00E-01
+	EU-155	86.50	30.90	-1.27E-01	8.82E-02	8.82E-02
		105.30	20.70	-5.27E-02		1.26E-01
+	EU-156	811.77	10.40	2.46E-02	5.51E-01	5.51E-01
		1153.47	7.20	8.22E-02		9.60E-01
		1230.71	8.90	-2.47E-01		8.71E-01
+	HO-166M	184.41	72.60	2.45E-02	5.98E-02	5.98E-02
		280.45	29.60	-1.59E-02		1.49E-01
		410.94	11.10	2.66E-02		4.70E-01
		711.69	54.10	2.11E-02		1.48E-01
+	TM-171	66.72	0.14	4.58E+00	1.88E+01	1.88E+01
+	HF-172	81.75	4.52	1.85E-03	2.60E-01	5.99E-01
		125.81	11.30	8.82E-02		2.60E-01
+	LU-172	181.53	20.60	1.67E-01	1.37E-01	2.11E-01
		810.06	16.63	3.30E-02		3.59E-01
		912.12	15.25	2.04E-01		5.30E-01
		1093.66	62.50	5.67E-02		1.37E-01
+	LU-173	100.72	5.24	-1.13E-01	2.18E-01	5.09E-01
		272.11	21.20	4.84E-02		2.18E-01
+	HF-175	343.40	* 84.00	3.16E-02	5.36E-02	5.36E-02
+	LU-176	88.34	13.30	1.09E-01	4.51E-02	2.33E-01
		201.83	86.00	-2.67E-03		4.60E-02
		306.78	94.00	-2.73E-02		4.51E-02
+	TA-182	67.75	41.20	-1.58E-02	6.24E-02	6.24E-02
		1121.30	34.90	7.69E-02		2.14E-01
		1189.05	16.23	-1.21E-01		3.50E-01
		1221.41	26.98	0.00E+00		3.38E-01
		1231.02	11.44	-1.92E-01		6.77E-01
+	IR-192	308.46	29.68	-2.88E-02	1.01E-01	1.52E-01
		468.07	48.10	-1.85E-02		1.01E-01

Analysis Report for 1510064-02

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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	-6.66E-03	5.73E-02	5.73E-02
+	BI-207	569.67	97.72	4.51E-04	6.47E-02	6.47E-02
		1063.62	74.90	2.15E-02		9.47E-02
+	TL-208	583.14	30.22	-3.71E-02	1.80E-01	1.80E-01
		860.37	4.48	-4.31E-02		1.46E+00
		2614.66	35.85	-4.16E-02		2.32E-01
+	BI-210M	262.00	45.00	-8.05E-03	9.95E-02	9.95E-02
		300.00	23.00	7.21E-02		2.02E-01
+	PB-210	46.50	4.25	4.35E-01	5.28E-01	5.28E-01
+	PB-211	404.84	2.90	7.76E-01	1.82E+00	1.82E+00
		831.96	2.90	-9.90E-02		2.47E+00
+	BI-212	727.17	11.80	1.63E-01	6.12E-01	6.12E-01
		1620.62	2.75	-5.28E-01		1.67E+00
+	PB-212	238.63	44.60	3.76E-02	1.04E-01	1.04E-01
		300.09	3.41	4.86E-01		1.36E+00
+	BI-214	609.31	46.30	-1.55E-02	1.34E-01	1.34E-01
		1120.29	15.10	5.92E-02		4.18E-01
		1764.49	15.80	1.06E-01		5.08E-01
		2204.22	4.98	2.66E-02		1.92E+00
+	PB-214	295.21	19.19	1.92E-02	1.53E-01	2.37E-01
		351.92	37.19	9.59E-02		1.53E-01
+	RN-219	401.80	6.50	1.37E-02	7.65E-01	7.65E-01
+	RA-223	323.87	3.88	5.41E-01	1.35E+00	1.35E+00
+	RA-224	240.98	3.95	7.22E-01	1.17E+00	1.17E+00
+	RA-225	40.00	31.00	-1.84E-02	6.54E-02	6.54E-02
+	RA-226	186.21	3.28	5.53E-01	1.30E+00	1.30E+00
+	TH-227	50.10	8.40	1.40E-01	2.62E-01	2.62E-01
		236.00	11.50	-4.63E-02		3.86E-01
		256.20	6.30	5.16E-03		6.66E-01
+	AC-228	338.32	11.40	-1.67E-02	2.90E-01	4.24E-01
		911.07	27.70	4.83E-02		2.90E-01
		969.11	16.60	1.03E-01		5.00E-01
+	TH-230	48.44	16.90	5.94E-02	1.28E-01	1.28E-01
		62.85	4.60	2.91E-01		5.50E-01
		67.67	0.37	-1.75E+00		6.94E+00
+	PA-231	283.67	1.60	1.26E+00	1.91E+00	2.94E+00
		302.67	2.30	-1.05E-01		1.91E+00
+	TH-231	25.64	14.70	1.01E-01	1.57E-01	1.57E-01
		84.21	6.40	-9.35E-02		4.15E-01
+	PA-233	311.98	38.60	8.29E-02	1.28E-01	1.28E-01
+	PA-234	131.20	20.40	-1.18E-01	1.28E-01	1.28E-01
		733.99	8.80	-2.41E-01		7.00E-01
		946.00	12.00	-2.58E-02		5.53E-01
+	PA-234M	1001.03	0.92	1.82E+00	8.22E+00	8.22E+00
+	TH-234	63.29	3.80	3.37E-01	6.67E-01	6.67E-01
+	U-235	143.76	10.50	7.95E-03	3.21E-01	3.21E-01
		163.35	4.70	4.50E-01		7.76E-01

Analysis Report for 1510064-02

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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	-1.52E-01	3.21E-01	8.39E-01
+	NP-237	86.50	12.60	-3.11E-01	2.16E-01	2.16E-01
+	NP-239	106.10	22.70	-4.89E-02	1.17E-01	1.17E-01
		228.18	10.70	7.63E-02		4.23E-01
		277.60	14.10	-1.10E-01		3.11E-01
+	AM-241	59.54	35.90	1.96E-02	6.47E-02	6.47E-02
+	AM-243	74.67	66.00	2.21E-02	4.19E-02	4.19E-02
+	CM-243	209.75	3.29	4.89E-01	3.09E-01	1.26E+00
		228.14	10.60	1.03E-01		4.26E-01
		277.60	14.00	-1.09E-01		3.09E-01

+ = Nuclide identified during the nuclide identification

* = Energy line found in the spectrum

> = MDA value not calculated

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

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

NUCLIDE MDA REPORT

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

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
+	BE-7	477.59	*	10.42	4.56E-01	4.56E-01	2.79E-01	2.03E-01
	NA-22	1274.54		99.94	7.11E-02	7.11E-02	-8.40E-03	2.87E-02
	NA-24	1368.53		99.99	7.40E-02	7.40E-02	-1.51E-02	2.94E-02
		2754.09		99.86	9.03E-02		-1.62E-03	3.20E-02
	AL-26	1808.65		99.76	9.64E-02	9.64E-02	2.70E-02	3.89E-02
	K-40	1460.81		10.67	6.99E-01	6.99E-01	0.00E+00	2.77E-01
	AR-41	1293.64		99.16	9.23E-02	9.23E-02	-2.63E-02	3.58E-02
	TI-44	67.88		94.40	2.73E-02	2.73E-02	-6.89E-03	1.30E-02
		78.34		96.00	2.79E-02		-6.58E-03	1.33E-02
	SC-46	889.25		99.98	7.22E-02	6.31E-02	2.56E-03	3.12E-02
		1120.51		99.99	6.31E-02		8.95E-03	2.55E-02
	V-48	983.52		99.98	7.18E-02	7.18E-02	-3.70E-02	3.06E-02
		1312.10		97.50	8.86E-02		-5.31E-03	3.71E-02

Analysis Report for 1510064-02

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
CR-51	320.08	9.83	4.85E-01	4.85E-01	-7.60E-02	2.24E-01
MN-54	834.83	99.97	6.99E-02	6.99E-02	-1.54E-02	3.04E-02
CO-56	846.75	99.96	7.09E-02	7.09E-02	2.05E-02	3.08E-02
	1037.75	14.03	4.45E-01		6.92E-02	1.83E-01
	1238.25	67.00	1.28E-01		5.13E-02	5.39E-02
	1771.40	15.51	1.17E-01		0.00E+00	0.00E+00
	2598.48	16.90	3.88E-01		-1.76E-02	1.23E-01
CO-57	122.06	85.51	3.56E-02	3.56E-02	1.35E-02	1.68E-02
	136.48	10.60	2.95E-01		8.32E-02	1.39E-01
CO-58	810.76	99.40	5.98E-02	5.98E-02	5.50E-03	2.54E-02
FE-59	1099.22	56.50	1.23E-01	1.23E-01	-1.30E-02	5.12E-02
	1291.56	43.20	1.42E-01		-2.36E-02	5.49E-02
CO-60	1173.22	100.00	6.12E-02	6.12E-02	7.16E-03	2.43E-02
	1332.49	100.00	6.30E-02		0.00E+00	2.44E-02
ZN-65	1115.52	50.75	6.46E-02	6.46E-02	-2.05E-02	2.04E-02
GA-67	93.31	35.70	9.03E-02	9.03E-02	8.35E-02	4.32E-02
	208.95	2.24	1.87E+00		7.90E-01	8.78E-01
	300.22	16.00	2.81E-01		4.37E-02	1.30E-01
SE-75	121.11	16.70	1.79E-01	5.08E-02	2.09E-04	8.45E-02
	136.00	59.20	5.08E-02		-1.99E-03	2.39E-02
	264.65	59.80	7.71E-02		2.69E-03	3.60E-02
	279.53	25.20	1.76E-01		-2.04E-02	8.17E-02
	400.65	11.40	4.30E-01		3.39E-03	1.95E-01
RB-82	776.52	13.00	5.81E-01	5.81E-01	3.33E-01	2.58E-01
RB-83	520.41	46.00	1.22E-01	1.22E-01	2.30E-02	5.46E-02
	529.64	30.30	1.63E-01		-6.85E-02	7.21E-02
	552.65	16.40	3.49E-01		1.03E-01	1.56E-01
KR-85	513.99	0.43	1.72E+01	1.72E+01	1.11E+01	7.93E+00
SR-85	513.99	99.27	7.50E-02	7.50E-02	4.85E-02	3.47E-02
Y-88	898.02	93.40	7.03E-02	5.11E-02	-4.49E-02	2.99E-02
	1836.01	99.38	5.11E-02		-6.94E-03	1.62E-02
NB-93M	16.57	9.43	2.02E-01	2.02E-01	2.09E-01	9.66E-02
NB-94	702.63	100.00	7.26E-02	7.26E-02	-1.64E-02	3.24E-02
	871.10	100.00	7.28E-02		1.05E-02	3.17E-02
NB-95	765.79	99.81	7.77E-02	7.77E-02	3.83E-02	3.47E-02
NB-95M	235.69	25.00	1.79E-01	1.79E-01	-2.15E-02	8.40E-02
ZR-95	724.18	43.70	1.54E-01	9.65E-02	-3.42E-03	6.81E-02
	756.72	55.30	9.65E-02		-2.12E-02	4.08E-02
MO-99	181.06	6.20	6.78E-01	4.61E-01	2.68E-01	3.21E-01
	739.58	12.80	4.61E-01		-1.18E-01	1.98E-01
	778.00	4.50	1.63E+00		7.83E-01	7.17E-01
RU-103	497.08	89.00	6.01E-02	6.01E-02	-1.35E-02	2.70E-02
RU-106	621.84	9.80	7.15E-01	7.15E-01	1.44E-01	3.23E-01
AG-108M	433.93	89.90	5.21E-02	5.21E-02	-1.14E-03	2.34E-02
	614.37	90.40	8.45E-02		3.24E-02	3.85E-02
	722.95	90.50	7.61E-02		-1.29E-02	3.37E-02
CD-109	88.03	3.72	7.89E-01	7.89E-01	-4.15E-01	3.77E-01
AG-110M	657.75	93.14	4.99E-02	4.99E-02	-2.10E-02	2.11E-02
	677.61	10.53	5.25E-01		-1.53E-01	2.27E-01
	706.67	16.46	4.83E-01		6.22E-02	2.18E-01
	763.93	21.98	3.45E-01		1.55E-01	1.53E-01
	884.67	71.63	9.70E-02		-1.28E-04	4.18E-02
	1384.27	23.94	2.44E-01		-2.77E-02	9.13E-02

Analysis Report for 1510064-02

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
CD-113M	263.70	0.02	1.96E+02	1.96E+02	1.38E+01	9.13E+01
SN-113	255.12	1.93	2.22E+00	6.31E-02	8.01E-01	1.03E+00
	391.69	64.90	6.31E-02		-3.48E-02	2.82E-02
TE123M	159.00	84.10	3.89E-02	3.89E-02	-9.29E-03	1.83E-02
SB-124	602.71	97.87	7.16E-02	7.16E-02	0.00E+00	3.24E-02
	645.85	7.26	7.48E-01		3.05E-02	3.25E-01
	722.78	11.10	6.06E-01		-9.53E-02	2.68E-01
	1691.02	49.00	1.98E-01		7.53E-03	8.11E-02
I-125	35.49	6.49	3.12E-01	3.12E-01	-3.99E-04	1.49E-01
SB-125	176.33	6.89	5.02E-01	1.78E-01	-1.75E-01	2.36E-01
	427.89	29.33	1.78E-01		3.60E-02	8.09E-02
	463.38	10.35	4.82E-01		-6.74E-02	2.17E-01
	600.56	17.80	3.80E-01		2.31E-02	1.72E-01
	635.90	11.32	5.24E-01		-4.01E-02	2.31E-01
SB-126	414.70	83.30	5.84E-02	5.84E-02	-2.25E-02	2.64E-02
	666.33	99.60	6.80E-02		4.24E-02	3.03E-02
	695.00	99.60	7.75E-02		-1.32E-03	3.49E-02
	720.50	53.80	1.31E-01		1.36E-02	5.80E-02
SN-126	87.57	37.00	7.91E-02	7.91E-02	-4.16E-02	3.78E-02
SB-127	473.00	25.00	2.12E-01	1.96E-01	-2.01E-03	9.57E-02
	685.20	35.70	1.96E-01		1.49E-02	8.75E-02
	783.80	14.70	4.23E-01		-1.59E-02	1.82E-01
I-129	29.78	57.00	3.82E-02	3.82E-02	1.53E-02	1.83E-02
	33.60	13.20	1.54E-01		-1.88E-02	7.35E-02
	39.58	7.52	2.68E-01		-7.57E-02	1.28E-01
I-131	284.30	6.05	7.34E-01	4.81E-02	4.59E-02	3.41E-01
	364.48	81.20	4.81E-02		-9.27E-03	2.16E-02
	636.97	7.26	7.82E-01		1.19E-02	3.43E-01
	722.89	1.80	3.75E+00		-5.90E-01	1.66E+00
TE-132	49.72	13.10	1.69E-01	5.18E-02	9.03E-02	8.05E-02
	228.16	88.00	5.18E-02		1.25E-02	2.44E-02
BA-133	81.00	33.00	8.08E-02	8.08E-02	-2.25E-02	3.85E-02
	302.84	17.80	2.47E-01		-1.35E-02	1.14E-01
	356.01	60.00	8.37E-02		8.60E-03	3.85E-02
I-133	529.87	86.30	5.95E-02	5.95E-02	-2.49E-02	2.62E-02
XE-133	81.00	38.00	7.06E-02	7.06E-02	-1.97E-02	3.36E-02
CS-134	563.23	8.38	7.22E-01	6.76E-02	-1.19E-01	3.24E-01
	569.32	15.43	4.10E-01		2.85E-03	1.84E-01
	604.70	97.60	6.76E-02		-1.78E-02	3.04E-02
	795.84	85.40	8.25E-02		2.57E-02	3.61E-02
	801.93	8.73	6.73E-01		-8.78E-02	2.87E-01
CS-135	268.24	16.00	3.00E-01	3.00E-01	1.01E-01	1.40E-01
I-135	1131.51	22.50	2.94E-01	2.34E-01	-6.73E-02	1.17E-01
	1260.41	28.60	2.34E-01		-9.75E-02	9.07E-02
	1678.03	9.54	8.09E-01		-8.35E-03	3.03E-01
CS-136	153.22	7.46	4.46E-01	7.46E-02	-8.64E-02	2.10E-01
	163.89	4.61	7.95E-01		4.61E-01	3.75E-01
	176.55	13.56	2.56E-01		-8.91E-02	1.20E-01
	273.65	12.66	3.53E-01		-3.40E-02	1.64E-01
	340.57	48.50	1.03E-01		-1.36E-02	4.78E-02
	818.50	99.70	7.46E-02		4.06E-03	3.28E-02
	1048.07	79.60	1.06E-01		-3.00E-02	4.60E-02
	1235.34	19.70	4.15E-01		7.47E-02	1.74E-01

Analysis Report for 1510064-02

BLANK

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	6.53E-02	6.53E-02	-1.05E-03	2.84E-02
LA-138	788.74	34.00	1.70E-01	1.28E-01	-9.38E-02	7.24E-02
	1435.80	66.00	1.28E-01		-2.79E-02	5.23E-02
CE-139	165.85	80.35	4.46E-02	4.46E-02	1.45E-02	2.10E-02
BA-140	162.64	6.70	5.14E-01	2.31E-01	-7.86E-02	2.42E-01
	304.84	4.50	9.18E-01		-8.06E-01	4.21E-01
	423.70	3.20	1.64E+00		5.39E-01	7.47E-01
	437.55	2.00	2.01E+00		-1.98E+00	8.84E-01
	537.32	25.00	2.31E-01		2.20E-02	1.04E-01
LA-140	328.77	20.50	2.60E-01	9.10E-02	6.69E-02	1.21E-01
	487.03	45.50	1.11E-01		2.04E-02	4.98E-02
	815.85	23.50	3.00E-01		7.38E-02	1.31E-01
	1596.49	95.49	9.10E-02		1.94E-02	3.68E-02
CE-141	145.44	48.40	6.80E-02	6.80E-02	-2.58E-02	3.21E-02
CE-143	57.36	11.80	1.76E-01	1.10E-01	-2.22E-01	8.34E-02
	293.26	42.00	1.10E-01		-1.05E-02	5.09E-02
	664.55	5.20	1.25E+00		2.76E-01	5.51E-01
CE-144	133.54	10.80	2.63E-01	2.63E-01	-5.52E-02	1.23E-01
PM-144	476.78	42.00	1.22E-01	7.49E-02	-3.85E-03	5.49E-02
	618.01	98.60	7.49E-02		3.65E-02	3.40E-02
	696.49	99.49	8.00E-02		2.45E-02	3.61E-02
PM-145	36.85	21.70	9.27E-02	5.00E-02	-1.94E-02	4.42E-02
	37.36	39.70	5.00E-02		2.36E-03	2.38E-02
	42.30	15.10	1.38E-01		1.29E-02	6.60E-02
	72.40	2.31	1.16E+00		1.80E-01	5.55E-01
PM-146	453.90	39.94	1.40E-01	1.40E-01	3.62E-03	6.38E-02
	735.90	14.01	4.28E-01		-1.41E-01	1.85E-01
	747.13	13.10	4.35E-01		-6.41E-02	1.86E-01
ND-147	91.11	28.90	1.14E-01	1.14E-01	1.15E-01	5.44E-02
	531.02	13.10	3.89E-01		-1.32E-01	1.72E-01
PM-149	285.90	3.10	1.52E+00	1.52E+00	5.36E-01	7.05E-01
EU-152	121.78	20.50	1.48E-01	1.48E-01	5.63E-02	7.01E-02
	244.69	5.40	7.80E-01		-5.95E-02	3.64E-01
	344.27	19.13	2.62E-01		-7.07E-02	1.21E-01
	778.89	9.20	7.87E-01		3.79E-01	3.47E-01
	964.01	10.40	7.02E-01		-7.76E-02	3.00E-01
	1085.78	7.22	8.48E-01		-4.07E-01	3.43E-01
	1112.02	9.60	3.40E-01		-9.25E-02	1.08E-01
	1407.95	14.94	4.83E-01		-1.18E-01	1.92E-01
GD-153	97.43	31.30	8.76E-02	8.76E-02	-8.22E-02	4.15E-02
	103.18	22.20	1.22E-01		7.36E-02	5.78E-02
EU-154	123.07	40.50	7.42E-02	7.42E-02	2.03E-02	3.51E-02
	723.30	19.70	3.50E-01		-5.95E-02	1.55E-01
	873.19	11.50	5.97E-01		-9.44E-02	2.57E-01
	996.32	10.30	7.04E-01		-1.18E-02	3.00E-01
	1004.76	17.90	4.39E-01		-3.47E-02	1.89E-01
	1274.45	35.50	2.00E-01		-2.36E-02	8.08E-02
EU-155	86.50	30.90	8.82E-02	8.82E-02	-1.27E-01	4.20E-02
	105.30	20.70	1.26E-01		-5.27E-02	5.94E-02
EU-156	811.77	10.40	5.51E-01	5.51E-01	2.46E-02	2.33E-01
	1153.47	7.20	9.60E-01		8.22E-02	3.94E-01
	1230.71	8.90	8.71E-01		-2.47E-01	3.61E-01
HO-166M	184.41	72.60	5.98E-02	5.98E-02	2.45E-02	2.84E-02

Analysis Report for 1510064-02

BLANK

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	1.49E-01	5.98E-02	-1.59E-02	6.91E-02
	410.94	11.10	4.70E-01		2.66E-02	2.14E-01
	711.69	54.10	1.48E-01		2.11E-02	6.68E-02
TM-171	66.72	0.14	1.88E+01	1.88E+01	4.58E+00	9.01E+00
HF-172	81.75	4.52	5.99E-01	2.60E-01	1.85E-03	2.85E-01
	125.81	11.30	2.60E-01		8.82E-02	1.22E-01
LU-172	181.53	20.60	2.11E-01	1.37E-01	1.67E-01	1.00E-01
	810.06	16.63	3.59E-01		3.30E-02	1.53E-01
	912.12	15.25	5.30E-01		2.04E-01	2.32E-01
	1093.66	62.50	1.37E-01		5.67E-02	5.89E-02
LU-173	100.72	5.24	5.09E-01	2.18E-01	-1.13E-01	2.41E-01
	272.11	21.20	2.18E-01		4.84E-02	1.02E-01
+ HF-175	343.40	* 84.00	5.36E-02	5.36E-02	3.16E-02	2.45E-02
LU-176	88.34	13.30	2.33E-01	4.51E-02	1.09E-01	1.12E-01
	201.83	86.00	4.60E-02		-2.67E-03	2.16E-02
	306.78	94.00	4.51E-02		-2.73E-02	2.07E-02
TA-182	67.75	41.20	6.24E-02	6.24E-02	-1.58E-02	2.98E-02
	1121.30	34.90	2.14E-01		7.69E-02	8.95E-02
	1189.05	16.23	3.50E-01		-1.21E-01	1.36E-01
	1221.41	26.98	3.38E-01		0.00E+00	1.45E-01
	1231.02	11.44	6.77E-01		-1.92E-01	2.81E-01
IR-192	308.46	29.68	1.52E-01	1.01E-01	-2.88E-02	7.04E-02
	468.07	48.10	1.01E-01		-1.85E-02	4.52E-02
HG-203	279.19	77.30	5.73E-02	5.73E-02	-6.66E-03	2.66E-02
BI-207	569.67	97.72	6.47E-02	6.47E-02	4.51E-04	2.91E-02
	1063.62	74.90	9.47E-02		2.15E-02	3.97E-02
TL-208	583.14	30.22	1.80E-01	1.80E-01	-3.71E-02	7.95E-02
	860.37	4.48	1.46E+00		-4.31E-02	6.25E-01
	2614.66	35.85	2.32E-01		-4.16E-02	8.21E-02
BI-210M	262.00	45.00	9.95E-02	9.95E-02	-8.05E-03	4.64E-02
	300.00	23.00	2.02E-01		7.21E-02	9.37E-02
PB-210	46.50	4.25	5.28E-01	5.28E-01	4.35E-01	2.52E-01
PB-211	404.84	2.90	1.82E+00	1.82E+00	7.76E-01	8.30E-01
	831.96	2.90	2.47E+00		-9.90E-02	1.08E+00
BI-212	727.17	11.80	6.12E-01	6.12E-01	1.63E-01	2.72E-01
	1620.62	2.75	1.67E+00		-5.28E-01	5.26E-01
PB-212	238.63	44.60	1.04E-01	1.04E-01	3.76E-02	4.89E-02
	300.09	3.41	1.36E+00		4.86E-01	6.32E-01
BI-214	609.31	46.30	1.34E-01	1.34E-01	-1.55E-02	5.96E-02
	1120.29	15.10	4.18E-01		5.92E-02	1.69E-01
	1764.49	15.80	5.08E-01		1.06E-01	1.97E-01
	2204.22	4.98	1.92E+00		2.66E-02	7.42E-01
PB-214	295.21	19.19	2.37E-01	1.53E-01	1.92E-02	1.10E-01
	351.92	37.19	1.53E-01		9.59E-02	7.14E-02
RN-219	401.80	6.50	7.65E-01	7.65E-01	1.37E-02	3.48E-01
RA-223	323.87	3.88	1.35E+00	1.35E+00	5.41E-01	6.28E-01
RA-224	240.98	3.95	1.17E+00	1.17E+00	7.22E-01	5.51E-01
RA-225	40.00	31.00	6.54E-02	6.54E-02	-1.84E-02	3.12E-02
RA-226	186.21	3.28	1.30E+00	1.30E+00	5.53E-01	6.17E-01
TH-227	50.10	8.40	2.62E-01	2.62E-01	1.40E-01	1.25E-01
	236.00	11.50	3.86E-01		-4.63E-02	1.81E-01
	256.20	6.30	6.66E-01		5.16E-03	3.10E-01
AC-228	338.32	11.40	4.24E-01	2.90E-01	-1.67E-02	1.95E-01

Analysis Report for 1510064-02

BLANK

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	2.90E-01	2.90E-01	4.83E-02	1.27E-01
	969.11	16.60	5.00E-01		1.03E-01	2.18E-01
TH-230	48.44	16.90	1.28E-01	1.28E-01	5.94E-02	6.10E-02
	62.85	4.60	5.50E-01		2.91E-01	2.63E-01
	67.67	0.37	6.94E+00		-1.75E+00	3.32E+00
PA-231	283.67	1.60	2.94E+00	1.91E+00	1.26E+00	1.37E+00
	302.67	2.30	1.91E+00		-1.05E-01	8.83E-01
TH-231	25.64	14.70	1.57E-01	1.57E-01	1.01E-01	7.57E-02
	84.21	6.40	4.15E-01		-9.35E-02	1.97E-01
PA-233	311.98	38.60	1.28E-01	1.28E-01	8.29E-02	5.95E-02
PA-234	131.20	20.40	1.28E-01	1.28E-01	-1.18E-01	5.99E-02
	733.99	8.80	7.00E-01		-2.41E-01	3.04E-01
	946.00	12.00	5.53E-01		-2.58E-02	2.33E-01
PA-234M	1001.03	0.92	8.22E+00	8.22E+00	1.82E+00	3.52E+00
TH-234	63.29	3.80	6.67E-01	6.67E-01	3.37E-01	3.19E-01
U-235	143.76	10.50	3.21E-01	3.21E-01	7.95E-03	1.52E-01
	163.35	4.70	7.76E-01		4.50E-01	3.66E-01
	205.31	4.70	8.39E-01		-1.52E-01	3.94E-01
NP-237	86.50	12.60	2.16E-01	2.16E-01	-3.11E-01	1.03E-01
NP-239	106.10	22.70	1.17E-01	1.17E-01	-4.89E-02	5.51E-02
	228.18	10.70	4.23E-01		7.63E-02	1.99E-01
	277.60	14.10	3.11E-01		-1.10E-01	1.44E-01
AM-241	59.54	35.90	6.47E-02	6.47E-02	1.96E-02	3.08E-02
AM-243	74.67	66.00	4.19E-02	4.19E-02	2.21E-02	2.00E-02
CM-243	209.75	3.29	1.26E+00	3.09E-01	4.89E-01	5.94E-01
	228.14	10.60	4.26E-01		1.03E-01	2.00E-01
	277.60	14.00	3.09E-01		-1.09E-01	1.43E-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 1510064-02
BLANK

No Data Review Comments Entered.

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

Sample Title: BLANK

Elapsed Live time: 3600

Elapsed Real Time: 3639

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	9	42
17:	28	32	20	24	29	24	27	24	24
25:	27	20	28	19	27	14	15	18	18
33:	22	16	9	15	21	16	20	10	10
41:	13	20	18	8	25	17	20	15	15
49:	14	23	11	11	9	9	12	12	12
57:	11	15	14	14	14	29	20	22	22
65:	17	15	15	14	20	13	18	21	21
73:	16	19	20	16	15	24	12	14	14
81:	12	12	19	13	19	16	13	11	11
89:	17	13	31	37	29	16	6	13	13
97:	7	11	11	13	10	13	17	10	10
105:	12	8	8	3	13	16	9	15	15
113:	16	14	16	7	12	7	15	11	11
121:	10	12	13	16	10	8	5	9	9
129:	11	6	5	10	6	9	11	10	10
137:	12	13	12	12	8	14	10	8	8
145:	13	9	17	11	6	16	10	13	13
153:	9	8	10	5	13	5	13	12	12
161:	9	7	8	8	14	12	16	9	9
169:	10	5	9	8	8	4	5	10	10
177:	13	8	13	9	16	10	12	19	19
185:	19	13	10	9	10	9	11	7	7
193:	6	9	7	8	13	8	13	8	8
201:	9	10	4	9	8	9	10	12	12
209:	8	10	11	8	9	9	3	10	10
217:	9	7	9	9	12	9	13	9	9
225:	11	10	11	10	5	7	11	11	11
233:	5	6	8	11	6	13	8	15	15
241:	7	11	7	5	7	5	6	3	3
249:	5	6	10	8	5	7	7	3	3
257:	7	10	8	5	5	9	5	7	7
265:	10	10	7	11	3	8	9	8	8
273:	7	8	5	8	4	1	12	3	3
281:	7	7	10	4	6	8	6	4	4
289:	8	5	5	5	9	6	9	6	6
297:	1	7	6	7	9	1	9	4	4
305:	3	2	2	4	11	7	10	6	6
313:	4	6	8	4	6	3	5	12	12
321:	5	4	4	7	5	9	10	4	4
329:	8	5	6	7	6	4	10	3	3
337:	6	3	3	5	7	6	11	6	6
345:	4	3	4	3	9	14	5	6	6
353:	8	6	7	4	4	4	2	2	2
361:	3	2	3	1	5	1	5	3	3

369: 1 6 3 8 6 1 8 5

Sample Title: BLANK

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

801: 1 1 3 1 0 2 1 2

Sample Title: BLANK

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

1233: 0 2 1 2 1 0 2 0

Sample Title: BLANK

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

1665: 2 0 1 0 0 0 0 0

Sample Title: BLANK

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

2097: 1 0 0 0 0 0 0 1 0

Sample Title: BLANK

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

2529: 0 0 0 0 1 0 0 0

Sample Title: BLANK

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

Sample Title: BLANK

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

3393: 0 1 0 0 0 0 1 0

Sample Title: BLANK

3401:	0	0	1	0	0	0	0	0
3409:	0	0	0	0	0	0	0	0
3417:	0	0	0	0	0	1	0	0
3425:	0	0	0	0	0	1	1	0
3433:	0	1	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	1	0	0
3473:	0	0	0	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	0	0	0	1	0	0
3505:	0	0	0	0	0	0	1	1
3513:	1	0	0	0	0	0	0	0
3521:	0	1	0	0	0	0	0	0
3529:	0	1	0	0	1	0	0	0
3537:	0	0	0	0	0	0	0	0
3545:	0	0	0	0	0	0	1	0
3553:	0	0	0	0	1	0	0	1
3561:	0	0	0	0	0	0	0	0
3569:	0	0	0	0	0	0	0	0
3577:	0	1	0	0	0	0	0	0
3585:	0	0	0	1	0	0	0	0
3593:	0	0	0	0	0	0	0	0
3601:	0	1	1	0	0	0	0	0
3609:	0	0	0	0	0	0	0	0
3617:	0	0	0	0	2	0	0	0
3625:	0	0	0	0	0	0	0	0
3633:	0	0	0	0	0	0	0	0
3641:	0	0	0	0	0	0	0	0
3649:	0	0	0	1	0	0	0	0
3657:	0	0	0	0	0	0	1	2
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	0	0	0	0	0
3697:	0	0	0	0	0	0	0	0
3705:	1	0	0	0	0	0	0	0
3713:	0	0	0	0	0	0	0	0
3721:	0	0	0	0	1	0	0	0
3729:	1	0	0	0	1	1	0	0
3737:	1	0	1	0	0	0	0	0
3745:	0	0	0	0	0	0	0	0
3753:	0	0	0	0	0	0	0	0
3761:	0	0	0	0	0	0	1	0
3769:	0	0	0	0	1	0	1	0
3777:	0	0	0	0	0	0	0	0
3785:	0	0	0	0	0	0	0	0
3793:	1	0	1	0	1	0	0	0
3801:	0	0	0	0	0	0	0	0
3809:	0	0	0	0	0	1	1	0
3817:	0	0	0	1	0	0	0	0

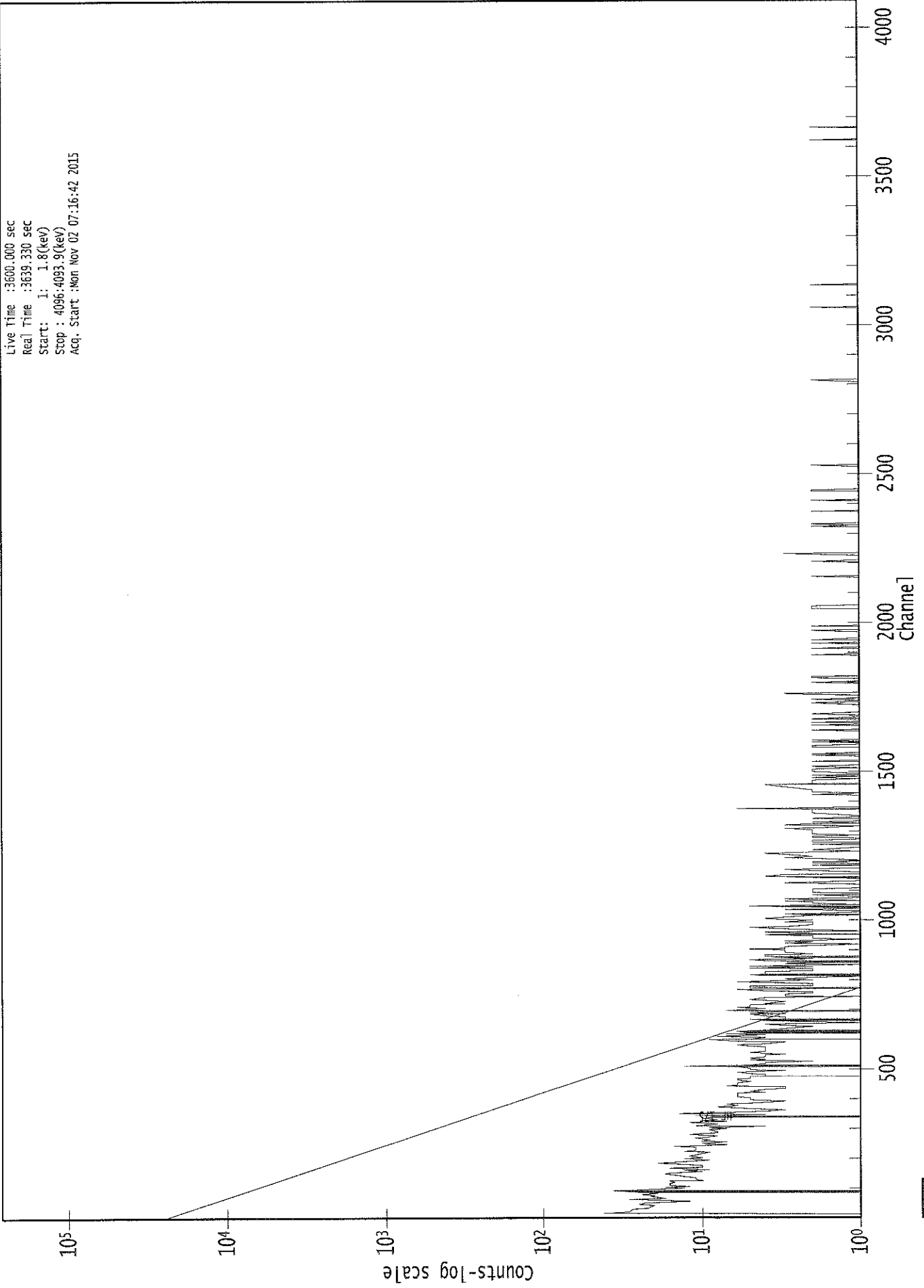
3825: 0 0 0 0 0 0 0 0 1

Sample Title: BLANK

Channel	1	2	3	4	5	6	7	8	9
3833:	0	0	0	0	0	0	0	0	0
3841:	0	0	0	0	0	0	0	0	0
3849:	0	0	0	0	0	1	0	0	0
3857:	0	0	0	1	0	0	1	0	0
3865:	0	0	0	0	0	0	0	0	0
3873:	0	0	0	0	0	0	0	0	0
3881:	0	0	1	0	0	0	0	0	0
3889:	0	0	1	0	0	0	0	0	0
3897:	0	0	0	0	0	0	1	0	0
3905:	0	0	0	0	0	1	0	0	0
3913:	1	0	0	0	0	0	0	0	0
3921:	0	0	0	0	0	0	0	0	0
3929:	0	0	0	0	1	0	0	0	0
3937:	0	0	0	0	0	0	0	0	0
3945:	0	0	0	0	0	1	0	0	0
3953:	0	0	1	0	0	0	0	0	0
3961:	0	0	0	1	0	1	0	0	0
3969:	0	1	1	0	0	0	0	0	0
3977:	0	0	0	0	0	0	0	0	0
3985:	0	0	0	0	0	0	0	0	0
3993:	0	0	1	0	0	0	0	0	0
4001:	0	1	0	1	0	0	0	0	0
4009:	0	0	0	0	0	0	1	1	1
4017:	0	0	0	0	0	0	1	1	1
4025:	0	0	0	0	0	0	0	0	0
4033:	0	0	0	0	0	0	0	1	1
4041:	0	0	0	0	0	0	0	0	0
4049:	0	0	1	0	0	0	0	0	0
4057:	0	0	0	0	0	1	0	1	1
4065:	0	0	0	1	0	0	1	0	0
4073:	0	0	0	0	0	0	0	0	0
4081:	0	0	0	0	0	0	0	0	0
4089:	0	0	0	0	0	0	1	0	0

0000028961.CNF

Live Time : 3600.000 sec
Real Time : 3639.330 sec
Start : 1: 1.8(keV)
Stop : 4096.4093.9(keV)
Acq. Start : Mon Nov 02 07:16:42 2015



ROI Type: 1

Analysis Report for 1510064-03
CP5005S14-15

1113

GAMMA SPECTRUM ANALYSIS

Sample Identification : 1510064-03
Sample Description : CP5005S14-15
Sample Type : SOIL

Sample Size : 5.070E+02 grams
Facility : Countroom

Sample Taken On : 10/6/2015 7:33:10AM
Acquisition Started : 11/3/2015 10:18:16AM

Procedure : GAS-1402 pCi
Operator : Administrator
Detector Name : GE4
Geometry : GAS-1402
Live Time : 3600.0 seconds
Real Time : 3639.0 seconds

Dead Time : 1.07 %

Peak Locate Threshold : 2.50
Peak Locate Range (in channels) : 1 - 4096
Peak Area Range (in channels) : 15 - 4096
Identification Energy Tolerance : 1.000 keV

Energy Calibration Used Done On : 10/25/2014
Efficiency Calibration Used Done On : 11/8/2014
Efficiency Calibration Description :

Sample Number : 29022

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
11/3/15

Analysis Report for 1510064-03
CP5005S14-15

PEAK LOCATE REPORT

Peak Locate Performed on : 11/3/2015 11:18:56AM
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	76.23	75.50	0.0000	0.00
2	86.74	86.01	0.0000	0.00
3	92.94	92.22	0.0000	0.00
4	185.57	184.88	0.0000	0.00
5	209.22	208.55	0.0000	0.00
6	239.30	238.64	0.0000	0.00
7	269.36	268.71	0.0000	0.00
8	277.57	276.93	0.0000	0.00
9	295.24	294.60	0.0000	0.00
10	338.23	337.61	0.0000	0.00
11	352.05	351.43	0.0000	0.00
12	409.00	408.41	0.0000	0.00
13	463.39	462.83	0.0000	0.00
14	543.91	543.39	0.0000	0.00
15	583.38	582.88	0.0000	0.00
16	609.24	608.74	0.0000	0.00
17	718.91	718.47	0.0000	0.00
18	762.96	762.54	0.0000	0.00
19	794.29	793.89	0.0000	0.00
20	828.65	828.26	0.0000	0.00
21	836.12	835.74	0.0000	0.00
22	911.29	910.95	0.0000	0.00
23	934.99	934.66	0.0000	0.00
24	969.36	969.05	0.0000	0.00
25	1068.22	1067.96	0.0000	0.00
26	1120.35	1120.12	0.0000	0.00
27	1143.60	1143.39	0.0000	0.00
28	1328.70	1328.60	0.0000	0.00
29	1339.77	1339.67	0.0000	0.00
30	1378.35	1378.28	0.0000	0.00
31	1460.95	1460.92	0.0000	0.00
32	1593.91	1593.96	0.0000	0.00
33	1610.93	1611.00	0.0000	0.00
34	1621.05	1621.12	0.0000	0.00
35	1630.80	1630.88	0.0000	0.00
36	1676.64	1676.75	0.0000	0.00
37	1764.42	1764.58	0.0000	0.00
38	2037.59	2037.94	0.0000	0.00
39	2044.65	2045.00	0.0000	0.00
40	2068.85	2069.22	0.0000	0.00
41	2151.37	2151.80	0.0000	0.00
42	2298.13	2298.67	0.0000	0.00

Analysis Report for 1510064-03
CP5005S14-15

<i>Peak No.</i>	<i>Energy (keV)</i>	<i>Centroid Channel</i>	<i>Centroid Uncertainty</i>	<i>Peak Significance</i>
43	2447.48	2448.13	0.0000	0.00
44	2614.33	2615.10	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.00sigma

Analysis Report for 1510064-03
CP5005S14-15

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/3/2015 11:18:56AM

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	76.23	70 -	83	75.50	6.75E+02	167.00	2.79E+03	3.86
2	86.74	83 -	90	86.01	1.29E+02	98.53	1.55E+03	4.78
3	92.94	90 -	97	92.22	1.33E+02	90.27	1.21E+03	2.48
4	185.57	179 -	189	184.88	1.66E+02	83.70	8.43E+02	2.38
5	209.22	205 -	212	208.55	8.93E+01	59.36	5.19E+02	1.86
6	239.30	233 -	245	238.64	5.06E+02	93.48	7.80E+02	2.69
7	269.36	266 -	273	268.71	4.60E+01	46.90	3.36E+02	1.32
8	277.57	273 -	281	276.93	5.65E+01	49.10	3.33E+02	1.93
9	295.24	291 -	297	294.60	1.32E+02	48.29	3.26E+02	2.21
10	338.23	333 -	341	337.61	7.01E+01	49.95	3.38E+02	1.97
11	352.05	345 -	356	351.43	2.77E+02	64.65	3.84E+02	2.61
12	409.00	405 -	411	408.41	2.73E+01	34.03	1.87E+02	1.67
13	463.39	459 -	467	462.83	2.97E+01	32.81	1.45E+02	3.00
14	543.91	539 -	547	543.39	3.34E+01	29.43	1.13E+02	4.49
15	583.38	576 -	590	582.88	1.53E+02	48.19	1.80E+02	2.90
16	609.24	602 -	616	608.74	2.18E+02	50.77	1.78E+02	3.23
17	718.91	715 -	722	718.47	2.50E+01	23.07	7.20E+01	1.92
18	762.96	758 -	766	762.54	4.04E+01	23.91	6.32E+01	3.48
19	794.29	790 -	798	793.89	2.50E+01	22.62	6.40E+01	3.24
M 20	828.65	824 -	838	828.26	2.28E+01	20.00	4.67E+01	4.56
m 21	836.12	824 -	838	835.74	1.32E+01	17.41	5.20E+01	3.13
22	911.29	906 -	918	910.95	4.96E+01	37.54	1.41E+02	2.63
23	934.99	927 -	940	934.66	3.20E+01	26.32	6.20E+01	3.39
24	969.36	966 -	974	969.05	2.76E+01	27.30	9.47E+01	1.65
25	1068.22	1065 -	1071	1067.96	1.49E+01	15.57	3.02E+01	3.29
26	1120.35	1116 -	1123	1120.12	3.22E+01	20.40	4.76E+01	3.07
27	1143.60	1137 -	1148	1143.39	1.97E+01	20.00	3.46E+01	1.12
28	1328.70	1320 -	1335	1328.60	2.02E+01	23.66	4.76E+01	6.01
29	1339.77	1336 -	1344	1339.67	1.46E+01	10.61	6.89E+00	4.51
30	1378.35	1373 -	1385	1378.28	2.90E+01	18.36	2.60E+01	2.82
31	1460.95	1455 -	1466	1460.92	2.89E+02	35.38	1.17E+01	3.03
32	1593.91	1589 -	1598	1593.96	1.46E+01	16.06	2.49E+01	4.78
33	1610.93	1607 -	1614	1611.00	8.00E+00	5.66	0.00E+00	2.74
34	1621.05	1617 -	1625	1621.12	9.63E+00	8.26	4.75E+00	2.36
35	1630.80	1627 -	1634	1630.88	1.21E+01	8.49	3.79E+00	4.54
36	1676.64	1672 -	1680	1676.75	6.94E+00	7.50	4.11E+00	6.40
37	1764.42	1759 -	1768	1764.58	1.77E+01	13.23	1.46E+01	1.94
38	2037.59	2035 -	2040	2037.94	5.64E+00	6.08	2.71E+00	1.89
39	2044.65	2042 -	2047	2045.00	7.00E+00	5.29	0.00E+00	1.47
40	2068.85	2066 -	2072	2069.22	7.17E+00	6.95	3.67E+00	1.76

Analysis Report for 1510064-03

CP5005S14-15

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
41	2151.37	2148 -	2154	2151.80	7.22E+00	6.95	3.56E+00	1.61
42	2298.13	2294 -	2302	2298.67	9.00E+00	6.00	0.00E+00	6.75
43	2447.48	2444 -	2451	2448.13	8.00E+00	5.66	0.00E+00	2.22
44	2614.33	2610 -	2618	2615.10	3.00E+01	10.95	0.00E+00	1.66

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 : 11/3/2015 11:18:56AM

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	76.23	70 -	83	6.75E+02	167.00	2.79E+03	1.30E+02
2	86.74	83 -	90	1.29E+02	98.53	1.55E+03	7.88E+01
3	92.94	90 -	97	1.33E+02	90.27	1.21E+03	7.17E+01
4	185.57	179 -	189	1.66E+02	83.70	8.43E+02	6.55E+01
5	209.22	205 -	212	8.93E+01	59.36	5.19E+02	4.63E+01
6	239.30	233 -	245	5.06E+02	93.48	7.80E+02	6.74E+01
7	269.36	266 -	273	4.60E+01	46.90	3.36E+02	3.69E+01
8	277.57	273 -	281	5.65E+01	49.10	3.33E+02	3.84E+01
9	295.24	291 -	297	1.32E+02	48.29	3.26E+02	3.49E+01
10	338.23	333 -	341	7.01E+01	49.95	3.38E+02	3.87E+01
11	352.05	345 -	356	2.77E+02	64.65	3.84E+02	4.56E+01
12	409.00	405 -	411	2.73E+01	34.03	1.87E+02	2.66E+01
13	463.39	459 -	467	2.97E+01	32.81	1.45E+02	2.54E+01
14	543.91	539 -	547	3.34E+01	29.43	1.13E+02	2.22E+01
15	583.38	576 -	590	1.53E+02	48.19	1.80E+02	3.40E+01
16	609.24	602 -	616	2.18E+02	50.77	1.78E+02	3.40E+01
17	718.91	715 -	722	2.50E+01	23.07	7.20E+01	1.71E+01
18	762.96	758 -	766	4.04E+01	23.91	6.32E+01	1.66E+01
19	794.29	790 -	798	2.50E+01	22.62	6.40E+01	1.67E+01
M	828.65	824 -	838	2.28E+01	20.00	4.67E+01	1.12E+01
m	836.12	824 -	838	1.32E+01	17.41	5.20E+01	1.19E+01
22	911.29	906 -	918	4.96E+01	37.54	1.41E+02	2.86E+01
23	934.99	927 -	940	3.20E+01	26.32	6.20E+01	1.95E+01

Analysis Report for 1510064-03

CP5005S14-15

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
24	969.36	966 -	974	2.76E+01	27.30	9.47E+01	2.07E+01
25	1068.22	1065 -	1071	1.49E+01	15.57	3.02E+01	1.11E+01
26	1120.35	1116 -	1123	3.22E+01	20.40	4.76E+01	1.39E+01
27	1143.60	1137 -	1148	1.97E+01	20.00	3.46E+01	1.47E+01
28	1328.70	1320 -	1335	2.02E+01	23.66	4.76E+01	1.80E+01
29	1339.77	1336 -	1344	1.46E+01	10.61	6.89E+00	6.06E+00
30	1378.35	1373 -	1385	2.90E+01	18.36	2.60E+01	1.22E+01
31	1460.95	1455 -	1466	2.89E+02	35.38	1.17E+01	8.03E+00
32	1593.91	1589 -	1598	1.46E+01	16.06	2.49E+01	1.16E+01
33	1610.93	1607 -	1614	8.00E+00	5.66	0.00E+00	0.00E+00
34	1621.05	1617 -	1625	9.63E+00	8.26	4.75E+00	4.48E+00
35	1630.80	1627 -	1634	1.21E+01	8.49	3.79E+00	3.99E+00
36	1676.64	1672 -	1680	6.94E+00	7.50	4.11E+00	4.39E+00
37	1764.42	1759 -	1768	1.77E+01	13.23	1.46E+01	8.39E+00
38	2037.59	2035 -	2040	5.64E+00	6.08	2.71E+00	3.12E+00
39	2044.65	2042 -	2047	7.00E+00	5.29	0.00E+00	0.00E+00
40	2068.85	2066 -	2072	7.17E+00	6.95	3.67E+00	3.64E+00
41	2151.37	2148 -	2154	7.22E+00	6.95	3.56E+00	3.62E+00
42	2298.13	2294 -	2302	9.00E+00	6.00	0.00E+00	0.00E+00
43	2447.48	2444 -	2451	8.00E+00	5.66	0.00E+00	0.00E+00
44	2614.33	2610 -	2618	3.00E+01	10.95	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 : 11/3/2015 11:18:56AM

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	76.23	70 -	83	75.50	6.75E+02	167.00	2.79E+03	.....
2	86.74	83 -	90	86.01	1.29E+02	98.53	1.55E+03	NP-237 EU-155 SN-126

Analysis Report for 1510064-03

CP5005S14-15

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
3	92.94	90 -	97	92.22	1.33E+02	90.27	1.21E+03	GA-67
4	185.57	179 -	189	184.88	1.66E+02	83.70	8.43E+02	RA-226
5	209.22	205 -	212	208.55	8.93E+01	59.36	5.19E+02	GA-67 CM-243
6	239.30	233 -	245	238.64	5.06E+02	93.48	7.80E+02	PB-212
7	269.36	266 -	273	268.71	4.60E+01	46.90	3.36E+02	.....
8	277.57	273 -	281	276.93	5.65E+01	49.10	3.33E+02	CM-243 NP-239
9	295.24	291 -	297	294.60	1.32E+02	48.29	3.26E+02	PB-214
10	338.23	333 -	341	337.61	7.01E+01	49.95	3.38E+02	AC-228
11	352.05	345 -	356	351.43	2.77E+02	64.65	3.84E+02	PB-214
12	409.00	405 -	411	408.41	2.73E+01	34.03	1.87E+02	.....
13	463.39	459 -	467	462.83	2.97E+01	32.81	1.45E+02	SB-125
14	543.91	539 -	547	543.39	3.34E+01	29.43	1.13E+02	.....
15	583.38	576 -	590	582.88	1.53E+02	48.19	1.80E+02	TL-208
16	609.24	602 -	616	608.74	2.18E+02	50.77	1.78E+02	BI-214
17	718.91	715 -	722	718.47	2.50E+01	23.07	7.20E+01	.....
18	762.96	758 -	766	762.54	4.04E+01	23.91	6.32E+01	AG-110M
19	794.29	790 -	798	793.89	2.50E+01	22.62	6.40E+01	.....
M 20	828.65	824 -	838	828.26	2.28E+01	20.00	4.67E+01	.....
m 21	836.12	824 -	838	835.74	1.32E+01	17.41	5.20E+01	.....
22	911.29	906 -	918	910.95	4.96E+01	37.54	1.41E+02	AC-228 LU-172
23	934.99	927 -	940	934.66	3.20E+01	26.32	6.20E+01	.....
24	969.36	966 -	974	969.05	2.76E+01	27.30	9.47E+01	AC-228
25	1068.22	1065 -	1071	1067.96	1.49E+01	15.57	3.02E+01	.....
26	1120.35	1116 -	1123	1120.12	3.22E+01	20.40	4.76E+01	BI-214 SC-46 TA-182
27	1143.60	1137 -	1148	1143.39	1.97E+01	20.00	3.46E+01	.....
28	1328.70	1320 -	1335	1328.60	2.02E+01	23.66	4.76E+01	.....
29	1339.77	1336 -	1344	1339.67	1.46E+01	10.61	6.89E+00	.....
30	1378.35	1373 -	1385	1378.28	2.90E+01	18.36	2.60E+01	.....
31	1460.95	1455 -	1466	1460.92	2.89E+02	35.38	1.17E+01	K-40
32	1593.91	1589 -	1598	1593.96	1.46E+01	16.06	2.49E+01	.....
33	1610.93	1607 -	1614	1611.00	8.00E+00	5.66	0.00E+00	.....
34	1621.05	1617 -	1625	1621.12	9.63E+00	8.26	4.75E+00	BI-212
35	1630.80	1627 -	1634	1630.88	1.21E+01	8.49	3.79E+00	.....
36	1676.64	1672 -	1680	1676.75	6.94E+00	7.50	4.11E+00	.....
37	1764.42	1759 -	1768	1764.58	1.77E+01	13.23	1.46E+01	BI-214
38	2037.59	2035 -	2040	2037.94	5.64E+00	6.08	2.71E+00	.....
39	2044.65	2042 -	2047	2045.00	7.00E+00	5.29	0.00E+00	.....
40	2068.85	2066 -	2072	2069.22	7.17E+00	6.95	3.67E+00	.....
41	2151.37	2148 -	2154	2151.80	7.22E+00	6.95	3.56E+00	.....
42	2298.13	2294 -	2302	2298.67	9.00E+00	6.00	0.00E+00	.....
43	2447.48	2444 -	2451	2448.13	8.00E+00	5.66	0.00E+00	.....
44	2614.33	2610 -	2618	2615.10	3.00E+01	10.95	0.00E+00	TL-208

Analysis Report for 1510064-03
CP5005S14-15

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

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 11/3/2015 11:18:56AM

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
1	76.23	6.75E+02	167.00	2.12E-02	1.69E-03
2	86.74	1.29E+02	98.53	1.98E-02	1.64E-03
3	92.94	1.33E+02	90.27	1.90E-02	1.62E-03
4	185.57	1.66E+02	83.70	1.16E-02	1.15E-03
5	209.22	8.93E+01	59.36	1.05E-02	1.08E-03
6	239.30	5.06E+02	93.48	9.39E-03	9.85E-04
7	269.36	4.60E+01	46.90	8.46E-03	8.91E-04
8	277.57	5.65E+01	49.10	8.23E-03	8.66E-04
9	295.24	1.32E+02	48.29	7.78E-03	8.43E-04
10	338.23	7.01E+01	49.95	6.86E-03	7.95E-04
11	352.05	2.77E+02	64.65	6.61E-03	7.80E-04
12	409.00	2.73E+01	34.03	5.73E-03	7.11E-04
13	463.39	2.97E+01	32.81	5.07E-03	6.31E-04
14	543.91	3.34E+01	29.43	4.33E-03	5.13E-04
15	583.38	1.53E+02	48.19	4.05E-03	4.55E-04
16	609.24	2.18E+02	50.77	3.88E-03	4.17E-04
17	718.91	2.50E+01	23.07	3.29E-03	3.08E-04
18	762.96	4.04E+01	23.91	3.10E-03	2.84E-04
19	794.29	2.50E+01	22.62	2.98E-03	2.66E-04
M	20	828.65	2.28E+01	2.86E-03	2.47E-04
m	21	836.12	1.32E+01	2.84E-03	2.43E-04
	22	911.29	4.96E+01	2.61E-03	2.06E-04
	23	934.99	3.20E+01	2.55E-03	2.03E-04
	24	969.36	2.76E+01	2.46E-03	1.99E-04
	25	1068.22	1.49E+01	2.24E-03	1.86E-04
	26	1120.35	3.22E+01	2.14E-03	1.79E-04
	27	1143.60	1.97E+01	2.10E-03	1.76E-04
	28	1328.70	2.02E+01	1.83E-03	2.15E-04
	29	1339.77	1.46E+01	1.82E-03	2.14E-04
	30	1378.35	2.90E+01	1.77E-03	2.06E-04
	31	1460.95	2.89E+02	1.68E-03	1.89E-04
	32	1593.91	1.46E+01	1.56E-03	1.61E-04
	33	1610.93	8.00E+00	1.55E-03	1.58E-04
	34	1621.05	9.63E+00	1.54E-03	1.56E-04

Analysis Report for 1510064-03
CP5005S14-15

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
35	1630.80	1.21E+01	8.49	1.53E-03	1.54E-04
36	1676.64	6.94E+00	7.50	1.50E-03	1.44E-04
37	1764.42	1.77E+01	13.23	1.43E-03	1.26E-04
38	2037.59	5.64E+00	6.08	1.28E-03	1.11E-04
39	2044.65	7.00E+00	5.29	1.28E-03	1.11E-04
40	2068.85	7.17E+00	6.95	1.27E-03	1.11E-04
41	2151.37	7.22E+00	6.95	1.23E-03	1.11E-04
42	2298.13	9.00E+00	6.00	1.17E-03	1.11E-04
43	2447.48	8.00E+00	5.66	1.12E-03	1.11E-04
44	2614.33	3.00E+01	10.95	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 : 11/3/2015 11:18:56AM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000028944.CNF

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
1	76.23	6.75E+02	167.00			6.75E+02	1.67E+02
2	86.74	1.29E+02	98.53			1.29E+02	9.85E+01
3	92.94	1.33E+02	90.27	5.44E+01	8.36E+00	7.83E+01	9.07E+01
4	185.57	1.66E+02	83.70	1.43E+01	7.33E+00	1.51E+02	8.40E+01
5	209.22	8.93E+01	59.36			8.93E+01	5.94E+01
6	239.30	5.06E+02	93.48	1.09E+01	6.39E+00	4.95E+02	9.37E+01
7	269.36	4.60E+01	46.90			4.60E+01	4.69E+01
8	277.57	5.65E+01	49.10			5.65E+01	4.91E+01
9	295.24	1.32E+02	48.29			1.32E+02	4.83E+01
10	338.23	7.01E+01	49.95			7.01E+01	4.99E+01
11	352.05	2.77E+02	64.65	8.07E+00	5.01E+00	2.69E+02	6.48E+01
12	409.00	2.73E+01	34.03			2.73E+01	3.40E+01
13	463.39	2.97E+01	32.81			2.97E+01	3.28E+01
14	543.91	3.34E+01	29.43			3.34E+01	2.94E+01
15	583.38	1.53E+02	48.19			1.53E+02	4.82E+01
16	609.24	2.18E+02	50.77	5.16E+00	1.63E+00	2.13E+02	5.08E+01
17	718.91	2.50E+01	23.07			2.50E+01	2.31E+01
18	762.96	4.04E+01	23.91			4.04E+01	2.39E+01
19	794.29	2.50E+01	22.62			2.50E+01	2.26E+01
M 20	828.65	2.28E+01	20.00			2.28E+01	2.00E+01

Analysis Report for 1510064-03

CP5005S14-15

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
m 21	836.12	1.32E+01	17.41			1.32E+01	1.74E+01
22	911.29	4.96E+01	37.54	1.01E+00	2.85E+00	4.86E+01	3.77E+01
23	934.99	3.20E+01	26.32			3.20E+01	2.63E+01
24	969.36	2.76E+01	27.30			2.76E+01	2.73E+01
25	1068.22	1.49E+01	15.57			1.49E+01	1.56E+01
26	1120.35	3.22E+01	20.40			3.22E+01	2.04E+01
27	1143.60	1.97E+01	20.00			1.97E+01	2.00E+01
28	1328.70	2.02E+01	23.66			2.02E+01	2.37E+01
29	1339.77	1.46E+01	10.61			1.46E+01	1.06E+01
30	1378.35	2.90E+01	18.36			2.90E+01	1.84E+01
31	1460.95	2.89E+02	35.38			2.89E+02	3.54E+01
32	1593.91	1.46E+01	16.06			1.46E+01	1.61E+01
33	1610.93	8.00E+00	5.66			8.00E+00	5.66E+00
34	1621.05	9.63E+00	8.26			9.63E+00	8.26E+00
35	1630.80	1.21E+01	8.49			1.21E+01	8.49E+00
36	1676.64	6.94E+00	7.50			6.94E+00	7.50E+00
37	1764.42	1.77E+01	13.23	1.11E-01	9.77E-01	1.76E+01	1.33E+01
38	2037.59	5.64E+00	6.08			5.64E+00	6.08E+00
39	2044.65	7.00E+00	5.29			7.00E+00	5.29E+00
40	2068.85	7.17E+00	6.95			7.17E+00	6.95E+00
41	2151.37	7.22E+00	6.95			7.22E+00	6.95E+00
42	2298.13	9.00E+00	6.00			9.00E+00	6.00E+00
43	2447.48	8.00E+00	5.66			8.00E+00	5.66E+00
44	2614.33	3.00E+01	10.95	1.20E+00	1.02E+00	2.88E+01	1.10E+01

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

AREA CORRECTION REPORT REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 11/3/2015 11:18:56AM
Ref. Peak Energy : 0.00 Reference Date :
Peak Ratio : 0.00 Uncertainty : 0.00
Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000028944.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	76.23	6.75E+02	167.00			6.75E+02	1.67E+02
2	86.74	1.29E+02	98.53			1.29E+02	9.85E+01
3	92.94	1.33E+02	90.27	5.44E+01	8.36E+00	7.83E+01	9.07E+01
4	185.57	1.66E+02	83.70	1.43E+01	7.33E+00	1.51E+02	8.40E+01

: 00327

Analysis Report for 1510064-03

CP5005S14-15

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
5	209.22	8.93E+01	59.36			8.93E+01	5.94E+01
6	239.30	5.06E+02	93.48	1.09E+01	6.39E+00	4.95E+02	9.37E+01
7	269.36	4.60E+01	46.90			4.60E+01	4.69E+01
8	277.57	5.65E+01	49.10			5.65E+01	4.91E+01
9	295.24	1.32E+02	48.29			1.32E+02	4.83E+01
10	338.23	7.01E+01	49.95			7.01E+01	4.99E+01
11	352.05	2.77E+02	64.65	8.07E+00	5.01E+00	2.69E+02	6.48E+01
12	409.00	2.73E+01	34.03			2.73E+01	3.40E+01
13	463.39	2.97E+01	32.81			2.97E+01	3.28E+01
14	543.91	3.34E+01	29.43			3.34E+01	2.94E+01
15	583.38	1.53E+02	48.19			1.53E+02	4.82E+01
16	609.24	2.18E+02	50.77	5.16E+00	1.63E+00	2.13E+02	5.08E+01
17	718.91	2.50E+01	23.07			2.50E+01	2.31E+01
18	762.96	4.04E+01	23.91			4.04E+01	2.39E+01
19	794.29	2.50E+01	22.62			2.50E+01	2.26E+01
M	20	828.65	2.28E+01	20.00		2.28E+01	2.00E+01
m	21	836.12	1.32E+01	17.41		1.32E+01	1.74E+01
	22	911.29	4.96E+01	37.54	1.01E+00	2.85E+00	4.86E+01
	23	934.99	3.20E+01	26.32		3.20E+01	2.63E+01
	24	969.36	2.76E+01	27.30		2.76E+01	2.73E+01
	25	1068.22	1.49E+01	15.57		1.49E+01	1.56E+01
	26	1120.35	3.22E+01	20.40		3.22E+01	2.04E+01
	27	1143.60	1.97E+01	20.00		1.97E+01	2.00E+01
	28	1328.70	2.02E+01	23.66		2.02E+01	2.37E+01
	29	1339.77	1.46E+01	10.61		1.46E+01	1.06E+01
	30	1378.35	2.90E+01	18.36		2.90E+01	1.84E+01
	31	1460.95	2.89E+02	35.38		2.89E+02	3.54E+01
	32	1593.91	1.46E+01	16.06		1.46E+01	1.61E+01
	33	1610.93	8.00E+00	5.66		8.00E+00	5.66E+00
	34	1621.05	9.63E+00	8.26		9.63E+00	8.26E+00
	35	1630.80	1.21E+01	8.49		1.21E+01	8.49E+00
	36	1676.64	6.94E+00	7.50		6.94E+00	7.50E+00
	37	1764.42	1.77E+01	13.23	1.11E-01	9.77E-01	1.76E+01
	38	2037.59	5.64E+00	6.08		5.64E+00	6.08E+00
	39	2044.65	7.00E+00	5.29		7.00E+00	5.29E+00
	40	2068.85	7.17E+00	6.95		7.17E+00	6.95E+00
	41	2151.37	7.22E+00	6.95		7.22E+00	6.95E+00
	42	2298.13	9.00E+00	6.00		9.00E+00	6.00E+00
	43	2447.48	8.00E+00	5.66		8.00E+00	5.66E+00
	44	2614.33	3.00E+01	10.95	1.20E+00	1.02E+00	2.88E+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 1510064-03
CP5005S14-15

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	0.997	1460.81 *	10.67	2.38E+01	3.99E+00
GA-67	0.443	93.31 *	35.70	6.76E+01	2.71E+02
		208.95 *	2.24	2.21E+03	8.25E+03
		300.22	16.00		
SN-126	0.896	87.57 *	37.00	2.60E-01	2.01E-01
EU-155	0.375	86.50 *	30.90	3.15E-01	2.43E-01
		105.30	20.70		
TL-208	0.874	583.14 *	30.22	1.85E+00	6.20E-01
		860.37	4.48		
PB-212	0.832	2614.66 *	35.85	1.11E+00	4.39E-01
		238.63 *	44.60	1.75E+00	3.79E-01
		300.09	3.41		
BI-214	0.936	609.31 *	46.30	1.75E+00	4.60E-01
		1120.29 *	15.10	1.47E+00	9.41E-01
		1764.49 *	15.80	1.15E+00	8.73E-01
		2204.22	4.98		
PB-214	0.998	295.21 *	19.19	1.31E+00	4.99E-01
		351.92 *	37.19	1.62E+00	4.35E-01
RA-226	0.936	186.21 *	3.28	5.87E+00	1.12E+01
AC-228	0.993	338.32 *	11.40	1.33E+00	9.58E-01
		911.07 *	27.70	9.95E-01	7.75E-01
		969.11 *	16.60	1.00E+00	9.94E-01
		86.50 *	12.60	7.64E-01	5.89E-01
NP-237	0.991	86.50 *	12.60	7.64E-01	5.89E-01
CM-243	0.363	209.75 *	3.29	3.82E+00	2.57E+00
		228.14	10.60		
		277.60 *	14.00	7.27E-01	6.37E-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 1510064-03
CP5005S14-15

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/3/2015 11:18:56AM
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	76.23	1.87533E-01	12.37		
7	269.36	1.27778E-02	50.98		
12	409.00	7.57231E-03	62.41		
13	463.39	8.25980E-03	55.16	Sum	
14	543.91	9.28704E-03	44.02		
17	718.91	6.94444E-03	46.13		
18	762.96	1.12269E-02	29.57	Tol.	AG-110M
19	794.29	6.94932E-03	45.20	Sum	
M	20	828.65	6.33209E-03		
m	21	836.12	3.66375E-03		
23	934.99	8.88889E-03	41.13	Sum	
25	1068.22	4.13889E-03	52.26		
27	1143.60	5.46922E-03	50.79		
28	1328.70	5.61237E-03	58.56	Sum	
29	1339.77	4.04321E-03	36.43		
30	1378.35	8.05556E-03	31.65		
32	1593.91	4.04321E-03	55.18		
33	1610.93	2.22222E-03	35.36		
34	1621.05	2.67361E-03	42.92	Tol.	BI-212
35	1630.80	3.36310E-03	35.04		
36	1676.64	1.92901E-03	54.00		
38	2037.59	1.56746E-03	53.90		
39	2044.65	1.94444E-03	37.80	Sum	
40	2068.85	1.99074E-03	48.46		
41	2151.37	2.00617E-03	48.09		
42	2298.13	2.50000E-03	33.33		
43	2447.48	2.22222E-03	35.36		

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

Analysis Report for 1510064-03
CP5005S14-15

NUCLIDE IDENTIFICATION REPORT

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

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.99	1460.81	*	10.67	2.38E+01	3.99E+00
GA-67	0.44	93.31	*	35.70	6.76E+01	2.71E+02
		208.95	*	2.24	2.21E+03	8.25E+03
		300.22		16.00		
SN-126	0.89	87.57	*	37.00	2.60E-01	2.01E-01
EU-155	0.37	86.50	*	30.90	3.15E-01	2.43E-01
		105.30		20.70		
TL-208	0.87	583.14	*	30.22	1.85E+00	6.20E-01
		860.37		4.48		
PB-212	0.83	2614.66	*	35.85	1.11E+00	4.39E-01
		238.63	*	44.60	1.75E+00	3.79E-01
		300.09		3.41		
BI-214	0.93	609.31	*	46.30	1.75E+00	4.60E-01
		1120.29	*	15.10	1.47E+00	9.41E-01
		1764.49	*	15.80	1.15E+00	8.73E-01
		2204.22		4.98		
PB-214	0.99	295.21	*	19.19	1.31E+00	4.99E-01
		351.92	*	37.19	1.62E+00	4.35E-01
RA-226	0.93	186.21	*	3.28	5.87E+00	1.12E+01
AC-228	0.99	338.32	*	11.40	1.33E+00	9.58E-01
		911.07	*	27.70	9.95E-01	7.75E-01
		969.11	*	16.60	1.00E+00	9.94E-01
NP-237	0.99	86.50	*	12.60	7.64E-01	5.89E-01
CM-243	0.36	209.75	*	3.29	3.82E+00	2.57E+00
		228.14		10.60		
		277.60	*	14.00	7.27E-01	6.37E-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 1510064-03
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INTERFERENCE CORRECTED REPORT

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
K-40	0.997	2.38E+01	3.99E+00	
GA-67	0.443	7.21E+01	2.76E+02	
? SN-126	0.896	2.60E-01	2.01E-01	
? EU-155	0.375	3.15E-01	2.43E-01	
TL-208	0.874	1.36E+00	3.58E-01	
PB-212	0.832	1.75E+00	3.79E-01	
BI-214	0.936	1.60E+00	3.73E-01	
PB-214	0.998	1.49E+00	3.28E-01	
RA-226	0.936	5.87E+00	1.12E+01	
AC-228	0.993	1.09E+00	5.15E-01	
? NP-237	0.991	7.64E-01	5.89E-01	
CM-243	0.363	8.99E-01	6.18E-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 1510064-03
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UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/3/2015 11:18:56AM
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	76.23	1.87533E-01	12.37		
7	269.36	1.27778E-02	50.98		
12	409.00	7.57231E-03	62.41		
13	463.39	8.25980E-03	55.16	Sum	
14	543.91	9.28704E-03	44.02		
17	718.91	6.94444E-03	46.13		
18	762.96	1.12269E-02	29.57	Tol.	AG-110M
19	794.29	6.94932E-03	45.20	Sum	
M	20	828.65	6.33209E-03		
m	21	836.12	3.66375E-03		
23	934.99	8.88889E-03	41.13	Sum	
25	1068.22	4.13889E-03	52.26		
27	1143.60	5.46922E-03	50.79		
28	1328.70	5.61237E-03	58.56	Sum	
29	1339.77	4.04321E-03	36.43		
30	1378.35	8.05556E-03	31.65		
32	1593.91	4.04321E-03	55.18		
33	1610.93	2.22222E-03	35.36		
34	1621.05	2.67361E-03	42.92	Tol.	BI-212
35	1630.80	3.36310E-03	35.04		
36	1676.64	1.92901E-03	54.00		
38	2037.59	1.56746E-03	53.90		
39	2044.65	1.94444E-03	37.80	Sum	
40	2068.85	1.99074E-03	48.46		
41	2151.37	2.00617E-03	48.09		
42	2298.13	2.50000E-03	33.33		
43	2447.48	2.22222E-03	35.36		

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

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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	8.49E-01	1.87E+00	1.87E+00
+ NA-22	1274.54	99.94	-8.21E-02	2.31E-01	2.31E-01
+ NA-24	1368.53	99.99	1.56E+12	7.18E+12	7.25E+12
	2754.09	99.86	2.15E+12		7.18E+12
+ AL-26	1808.65	99.76	-3.52E-03	1.59E-01	1.59E-01
+ K-40	1460.81	* 10.67	2.38E+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	-1.31E-02	1.00E-01	1.00E-01
	78.34	96.00	3.68E-01		1.35E-01
+ SC-46	889.25	99.98	-4.49E-03	2.58E-01	2.58E-01
	1120.51	99.99	3.05E-01		3.38E-01
+ V-48	983.52	99.98	-1.30E-01	6.34E-01	6.34E-01
	1312.10	97.50	1.67E-01		8.18E-01
+ CR-51	320.08	9.83	-3.87E-03	2.78E+00	2.78E+00
+ MN-54	834.83	99.97	-2.40E-02	1.99E-01	1.99E-01
+ CO-56	846.75	99.96	5.52E-02	2.43E-01	2.43E-01
	1037.75	14.03	4.48E-01		1.84E+00
	1238.25	67.00	1.69E-01		5.53E-01
	1771.40	15.51	-6.31E-01		1.36E+00
	2598.48	16.90	6.26E-01		1.47E+00
+ CO-57	122.06	85.51	-4.11E-02	1.25E-01	1.25E-01
	136.48	10.60	-2.96E-02		1.08E+00
+ CO-58	810.76	99.40	7.27E-02	2.45E-01	2.45E-01
+ FE-59	1099.22	56.50	3.63E-01	6.24E-01	6.24E-01
	1291.56	43.20	-1.27E-01		7.20E-01
+ CO-60	1173.22	100.00	3.22E-02	2.05E-01	2.42E-01
	1332.49	100.00	-8.67E-02		2.05E-01
+ ZN-65	1115.52	50.75	-1.40E-01	4.38E-01	4.38E-01
+ GA-67	93.31	* 35.70	6.76E+01	1.29E+02	1.29E+02
	208.95	* 2.24	2.21E+03		2.36E+03
	300.22	16.00	-1.67E+02		3.60E+02
+ SE-75	121.11	16.70	-3.96E-01	2.14E-01	6.95E-01
	136.00	59.20	3.79E-02		2.14E-01
	264.65	59.80	-1.01E-02		2.43E-01
	279.53	25.20	-1.77E-02		6.06E-01
	400.65	11.40	2.70E-01		1.48E+00
+ RB-82	776.52	13.00	-4.96E-02	3.33E+00	3.33E+00
+ RB-83	520.41	46.00	1.97E-01	4.24E-01	4.24E-01
	529.64	30.30	-4.35E-01		5.73E-01
	552.65	16.40	-7.96E-03		1.18E+00

Analysis Report for 1510064-03
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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	5.16E+01	4.65E+01	4.65E+01
+	SR-85	513.99	99.27	3.03E-01	2.73E-01	2.73E-01
+	Y-88	898.02	93.40	5.03E-02	1.93E-01	2.81E-01
		1836.01	99.38	-1.35E-02		1.93E-01
+	NB-93M	16.57	9.43	9.89E-01	5.09E-01	5.09E-01
+	NB-94	702.63	100.00	-1.06E-01	1.59E-01	1.59E-01
		871.10	100.00	1.34E-02		1.76E-01
+	NB-95	765.79	99.81	5.58E-02	3.88E-01	3.88E-01
+	NB-95M	235.69	25.00	2.95E+00	1.73E+02	1.73E+02
+	ZR-95	724.18	43.70	4.67E-01	4.05E-01	6.23E-01
		756.72	55.30	2.30E-02		4.05E-01
+	MO-99	181.06	6.20	3.87E+02	1.57E+03	2.40E+03
		739.58	12.80	-2.05E+02		1.57E+03
		778.00	4.50	6.96E+02		5.36E+03
+	RU-103	497.08	89.00	-7.10E-02	2.45E-01	2.45E-01
+	RU-106	621.84	9.80	-4.19E-02	1.57E+00	1.57E+00
+	AG-108M	433.93	89.90	-7.41E-02	1.56E-01	1.56E-01
		614.37	90.40	1.38E-02		2.26E-01
		722.95	90.50	1.10E-01		2.19E-01
+	CD-109	88.03	3.72	2.48E+00	3.21E+00	3.21E+00
+	AG-110M	657.75	93.14	0.00E+00	2.13E-01	2.13E-01
		677.61	10.53	-2.18E-01		1.70E+00
		706.67	16.46	7.70E-01		1.26E+00
		763.93	21.98	-5.48E-02		1.03E+00
		884.67	71.63	-9.21E-02		2.82E-01
		1384.27	23.94	-7.57E-02		7.62E-01
+	CD-113M	263.70	0.02	-9.55E+01	5.32E+02	5.32E+02
+	SN-113	255.12	1.93	2.82E-01	2.41E-01	7.67E+00
		391.69	64.90	-1.03E-01		2.41E-01
+	TE123M	159.00	84.10	-1.86E-02	1.53E-01	1.53E-01
+	SB-124	602.71	97.87	-8.90E-03	2.34E-01	2.34E-01
		645.85	7.26	-5.11E-01		3.19E+00
		722.78	11.10	2.68E-02		2.44E+00
		1691.02	49.00	2.34E-03		3.38E-01
+	I-125	35.49	6.49	-1.37E-01	1.24E+00	1.24E+00
+	SB-125	176.33	6.89	-8.22E-02	4.90E-01	1.72E+00
		427.89	29.33	2.69E-02		4.90E-01
		463.38	10.35	8.47E-01		1.43E+00
		600.56	17.80	7.64E-02		9.56E-01
		635.90	11.32	-1.57E-01		1.42E+00
+	SB-126	414.70	83.30	-2.79E-01	7.94E-01	7.94E-01
		666.33	99.60	4.63E-01		8.85E-01
		695.00	99.60	2.11E-02		8.03E-01
		720.50	53.80	-2.47E-01		1.69E+00
+	SN-126	87.57	* 37.00	2.60E-01	3.25E-01	3.25E-01
+	SB-127	473.00	25.00	-2.08E+01	7.88E+01	7.96E+01
		685.20	35.70	-1.53E+01		7.88E+01
		783.80	14.70	4.82E+01		2.14E+02

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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	-3.02E-02	9.63E-02	9.63E-02
		33.60	13.20	-8.82E-02		4.31E-01
		39.58	7.52	-7.36E-01		8.23E-01
+	I-131	284.30	6.05	-8.54E+00	1.84E+00	2.21E+01
		364.48	81.20	-1.03E-01		1.84E+00
		636.97	7.26	-5.67E+00		2.43E+01
		722.89	1.80	1.35E+00		1.23E+02
+	TE-132	49.72	13.10	7.02E+01	5.67E+01	2.22E+02
		228.16	88.00	-1.17E+00		5.67E+01
+	BA-133	81.00	33.00	-2.23E-01	3.47E-01	3.68E-01
		302.84	17.80	-7.25E-01		8.04E-01
		356.01	60.00	-1.93E-03		3.47E-01
+	I-133	529.87	86.30	-7.22E+08	9.52E+08	9.52E+08
+	XE-133	81.00	38.00	-7.95E+00	1.31E+01	1.31E+01
+	CS-134	563.23	8.38	5.06E-01	2.26E-01	2.07E+00
		569.32	15.43	1.08E-01		1.05E+00
		604.70	97.60	-5.32E-03		2.40E-01
		795.84	85.40	4.00E-02		2.26E-01
		801.93	8.73	4.32E-01		2.15E+00
+	CS-135	268.24	16.00	-9.12E-02	8.09E-01	8.09E-01
+	@ 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	4.18E-01	7.25E-01	6.59E+00
		163.89	4.61	-3.38E+00		1.05E+01
		176.55	13.56	-1.81E-01		3.78E+00
		273.65	12.66	2.90E+00		4.78E+00
		340.57	48.50	-8.66E-02		1.46E+00
		818.50	99.70	2.09E-02		7.25E-01
		1048.07	79.60	2.17E-02		1.04E+00
		1235.34	19.70	9.07E-01		6.39E+00
+	CS-137	661.65	85.12	1.07E-01	2.27E-01	2.27E-01
+	LA-138	788.74	34.00	3.81E-02	2.72E-01	5.39E-01
		1435.80	66.00	4.20E-02		2.72E-01
+	CE-139	165.85	80.35	-1.18E-03	1.60E-01	1.60E-01
+	BA-140	162.64	6.70	-3.82E+00	2.63E+00	7.44E+00
		304.84	4.50	3.96E+00		1.43E+01
		423.70	3.20	7.99E+00		2.06E+01
		437.55	2.00	1.90E+01		3.46E+01
		537.32	25.00	3.54E-01		2.63E+00
+	LA-140	328.77	20.50	5.29E-01	1.00E+00	3.09E+00
		487.03	45.50	-9.60E-02		1.31E+00
		815.85	23.50	1.02E-01		3.38E+00
		1596.49	95.49	0.00E+00		1.00E+00
+	CE-141	145.44	48.40	4.02E-02	4.27E-01	4.27E-01
+	CE-143	57.36	11.80	-7.02E+05	5.86E+05	1.01E+06
		293.26	42.00	5.35E+04		5.86E+05
		664.55	5.20	-4.49E+05		5.10E+06
+	CE-144	133.54	10.80	-3.35E-01	1.04E+00	1.04E+00

Analysis Report for 1510064-03
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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	6.15E-02	1.52E-01	3.34E-01
		618.01	98.60	-3.20E-02		1.52E-01
		696.49	99.49	-6.64E-02		1.65E-01
+	PM-145	36.85	21.70	6.66E-02	1.51E-01	2.78E-01
		37.36	39.70	-2.18E-02		1.51E-01
		42.30	15.10	2.91E-01		4.47E-01
		72.40	2.31	2.18E-01		5.30E+00
+	PM-146	453.90	39.94	2.26E-01	3.76E-01	3.76E-01
		735.90	14.01	6.09E-02		1.26E+00
		747.13	13.10	9.32E-02		1.34E+00
+	ND-147	91.11	28.90	5.81E+00	2.43E+00	2.43E+00
		531.02	13.10	-1.57E+00		6.51E+00
+	PM-149	285.90	3.10	3.11E+03	2.71E+04	2.71E+04
+	EU-152	121.78	20.50	-1.60E-01	4.85E-01	4.85E-01
		244.69	5.40	-3.20E-01		2.70E+00
		344.27	19.13	-5.06E-02		7.00E-01
		778.89	9.20	2.85E-01		2.20E+00
		964.01	10.40	2.80E-01		2.21E+00
		1085.78	7.22	1.44E+00		3.20E+00
		1112.02	9.60	-2.39E-02		2.08E+00
		1407.95	14.94	1.72E-01		1.19E+00
+	GD-153	97.43	31.30	8.39E-02	3.36E-01	3.36E-01
		103.18	22.20	9.98E-02		4.57E-01
+	EU-154	123.07	40.50	-3.16E-02	2.47E-01	2.47E-01
		723.30	19.70	5.07E-01		1.01E+00
		873.19	11.50	-1.69E-01		1.49E+00
		996.32	10.30	-1.05E+00		1.78E+00
		1004.76	17.90	7.92E-01		1.15E+00
		1274.45	35.50	-2.28E-01		6.40E-01
+	EU-155	86.50	* 30.90	3.15E-01	3.93E-01	3.93E-01
		105.30	20.70	-3.13E-01		4.52E-01
+	EU-156	811.77	10.40	1.00E+00	6.38E+00	6.38E+00
		1153.47	7.20	-5.74E-01		1.10E+01
		1230.71	8.90	-6.93E-01		1.04E+01
+	HO-166M	184.41	72.60	2.51E-01	1.88E-01	1.88E-01
		280.45	29.60	-1.07E-01		4.30E-01
		410.94	11.10	4.25E-02		1.38E+00
		711.69	54.10	6.47E-02		3.41E-01
+	TM-171	66.72	0.14	3.54E+01	7.05E+01	7.05E+01
+	HF-172	81.75	4.52	-8.44E+00	9.15E-01	2.55E+00
		125.81	11.30	-4.02E-01		9.15E-01
+	LU-172	181.53	20.60	-4.06E-01	6.38E+00	1.14E+01
		810.06	16.63	6.06E+00		2.04E+01
		912.12	15.25	3.02E+01		3.30E+01
		1093.66	62.50	4.73E-01		6.38E+00
+	LU-173	100.72	5.24	1.02E+00	6.47E-01	1.84E+00
		272.11	21.20	-1.75E-01		6.47E-01
+	HF-175	343.40	84.00	-1.51E-02	2.15E-01	2.15E-01
+	LU-176	88.34	13.30	1.82E+00	1.44E-01	8.87E-01

Analysis Report for 1510064-03
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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	3.70E-03	1.44E-01	1.45E-01
		306.78	94.00	-3.94E-02		1.44E-01
+	TA-182	67.75	41.20	-3.55E-02	2.72E-01	2.72E-01
		1121.30	34.90	-6.26E-02		9.03E-01
		1189.05	16.23	3.90E-01		1.81E+00
		1221.41	26.98	1.11E-01		1.06E+00
		1231.02	11.44	-1.77E-01		2.65E+00
+	IR-192	308.46	29.68	-4.19E-02	3.43E-01	5.92E-01
		468.07	48.10	-4.22E-02		3.43E-01
+	HG-203	279.19	77.30	-7.44E-03	2.55E-01	2.55E-01
+	BI-207	569.67	97.72	1.66E-02	1.62E-01	1.62E-01
		1063.62	74.90	-7.92E-02		2.79E-01
+	TL-208	583.14	* 30.22	1.85E+00	2.58E-01	8.57E-01
		860.37	4.48	1.98E+00		4.49E+00
		2614.66	* 35.85	1.11E+00		2.58E-01
+	BI-210M	262.00	45.00	-1.16E-01	2.64E-01	2.64E-01
		300.00	23.00	-2.67E-01		6.97E-01
+	PB-210	46.50	4.25	5.86E-01	1.66E+00	1.66E+00
+	PB-211	404.84	2.90	5.89E-03	5.12E+00	5.12E+00
		831.96	2.90	2.75E+00		6.83E+00
+	BI-212	727.17	11.80	6.16E-01	1.67E+00	1.67E+00
		1620.62	2.75	1.98E+00		6.58E+00
+	PB-212	238.63	* 44.60	1.75E+00	4.89E-01	4.89E-01
		300.09	3.41	-1.80E+00		4.70E+00
+	BI-214	609.31	* 46.30	1.75E+00	5.87E-01	5.87E-01
		1120.29	* 15.10	1.47E+00		1.40E+00
		1764.49	* 15.80	1.15E+00		1.28E+00
		2204.22	4.98	3.27E+00		5.40E+00
+	PB-214	295.21	* 19.19	1.31E+00	5.71E-01	7.19E-01
		351.92	* 37.19	1.62E+00		5.71E-01
+	RN-219	401.80	6.50	-1.86E-01	2.21E+00	2.21E+00
+	RA-223	323.87	3.88	1.19E+00	3.60E+00	3.60E+00
+	RA-224	240.98	3.95	2.05E+01	5.29E+00	5.29E+00
+	RA-225	40.00	31.00	-6.69E-01	7.48E-01	7.48E-01
+	RA-226	186.21	* 3.28	5.87E+00	5.23E+00	5.23E+00
+	TH-227	50.10	8.40	2.76E-01	8.72E-01	8.72E-01
		236.00	11.50	2.89E-02		1.69E+00
		256.20	6.30	1.43E-01		1.98E+00
+	AC-228	338.32	* 11.40	1.33E+00	1.23E+00	1.52E+00
		911.07	* 27.70	9.95E-01		1.23E+00
		969.11	* 16.60	1.00E+00		1.60E+00
+	TH-230	48.44	16.90	3.18E-02	4.22E-01	4.22E-01
		62.85	4.60	1.21E+00		2.02E+00
		67.67	0.37	-3.33E+00		2.55E+01
+	PA-231	283.67	1.60	-9.98E-01	6.19E+00	7.49E+00
		302.67	2.30	-5.58E+00		6.19E+00
+	TH-231	25.64	14.70	-5.67E-02	3.79E-01	3.79E-01
		84.21	6.40	-7.65E+00		1.64E+00

Analysis Report for 1510064-03
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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	PA-233	311.98	38.60	3.88E-02	7.16E-01	7.16E-01
+	PA-234	131.20	20.40	2.64E-01	5.20E-01	5.20E-01
		733.99	8.80	-5.77E-01		1.99E+00
		946.00	12.00	3.56E-01		1.63E+00
+	PA-234M	1001.03	0.92	-8.08E+00	1.99E+01	1.99E+01
+	TH-234	63.29	3.80	1.67E+00	2.46E+00	2.46E+00
+	U-235	143.76	10.50	1.19E-01	1.07E+00	1.07E+00
		163.35	4.70	-7.51E-01		2.33E+00
		205.31	4.70	2.09E-01		2.86E+00
+	NP-237	86.50	* 12.60	7.64E-01	9.53E-01	9.53E-01
+	NP-239	106.10	22.70	-1.12E+03	1.62E+03	1.62E+03
		228.18	10.70	1.05E+03		4.72E+03
		277.60	14.10	2.30E+03		3.64E+03
+	AM-241	59.54	35.90	2.91E-01	2.50E-01	2.50E-01
+	AM-243	74.67	66.00	8.30E-01	2.01E-01	2.01E-01
+	CM-243	209.75	* 3.29	3.82E+00	1.02E+00	4.08E+00
		228.14	10.60	-2.46E-02		1.19E+00
		277.60	* 14.00	7.27E-01		1.02E+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	1.87E+00	1.87E+00	8.49E-01	8.81E-01
NA-22	1274.54	99.94	2.31E-01	2.31E-01	-8.21E-02	1.05E-01
NA-24	1368.53	99.99	7.25E+12	7.18E+12	1.56E+12	3.22E+12
	2754.09	99.86	7.18E+12		2.15E+12	2.90E+12

Analysis Report for 1510064-03

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
AL-26	1808.65	99.76	1.59E-01	1.59E-01	-3.52E-03	6.50E-02
+ K-40	1460.81	* 10.67	1.55E+00	1.55E+00	2.38E+01	6.62E-01
@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26	1.00E+20
TI-44	67.88	94.40	1.00E-01	1.00E-01	-1.31E-02	4.92E-02
	78.34	96.00	1.35E-01		3.68E-01	6.67E-02
SC-46	889.25	99.98	2.58E-01	2.58E-01	-4.49E-03	1.20E-01
	1120.51	99.99	3.38E-01		3.05E-01	1.57E-01
V-48	983.52	99.98	6.34E-01	6.34E-01	-1.30E-01	2.89E-01
	1312.10	97.50	8.18E-01		1.67E-01	3.71E-01
CR-51	320.08	9.83	2.78E+00	2.78E+00	-3.87E-03	1.33E+00
MN-54	834.83	99.97	1.99E-01	1.99E-01	-2.40E-02	9.22E-02
CO-56	846.75	99.96	2.43E-01	2.43E-01	5.52E-02	1.12E-01
	1037.75	14.03	1.84E+00		4.48E-01	8.41E-01
	1238.25	67.00	5.53E-01		1.69E-01	2.57E-01
	1771.40	15.51	1.36E+00		-6.31E-01	5.63E-01
	2598.48	16.90	1.47E+00		6.26E-01	5.94E-01
CO-57	122.06	85.51	1.25E-01	1.25E-01	-4.11E-02	6.08E-02
	136.48	10.60	1.08E+00		-2.96E-02	5.27E-01
CO-58	810.76	99.40	2.45E-01	2.45E-01	7.27E-02	1.14E-01
FE-59	1099.22	56.50	6.24E-01	6.24E-01	3.63E-01	2.87E-01
	1291.56	43.20	7.20E-01		-1.27E-01	3.22E-01
CO-60	1173.22	100.00	2.42E-01	2.05E-01	3.22E-02	1.11E-01
	1332.49	100.00	2.05E-01		-8.67E-02	9.13E-02
ZN-65	1115.52	50.75	4.38E-01	4.38E-01	-1.40E-01	1.99E-01
+ GA-67	93.31	* 35.70	1.29E+02	1.29E+02	6.76E+01	6.32E+01
	208.95	* 2.24	2.36E+03		2.21E+03	1.15E+03
	300.22	16.00	3.60E+02		-1.67E+02	1.74E+02
SE-75	121.11	16.70	6.95E-01	2.14E-01	-3.96E-01	3.39E-01
	136.00	59.20	2.14E-01		3.79E-02	1.04E-01
	264.65	59.80	2.43E-01		-1.01E-02	1.17E-01
	279.53	25.20	6.06E-01		-1.77E-02	2.92E-01
	400.65	11.40	1.48E+00		2.70E-01	7.05E-01
RB-82	776.52	13.00	3.33E+00	3.33E+00	-4.96E-02	1.56E+00
RB-83	520.41	46.00	4.24E-01	4.24E-01	1.97E-01	2.00E-01
	529.64	30.30	5.73E-01		-4.35E-01	2.68E-01
	552.65	16.40	1.18E+00		-7.96E-03	5.52E-01
KR-85	513.99	0.43	4.65E+01	4.65E+01	5.16E+01	2.22E+01
SR-85	513.99	99.27	2.73E-01	2.73E-01	3.03E-01	1.31E-01
Y-88	898.02	93.40	2.81E-01	1.93E-01	5.03E-02	1.31E-01
	1836.01	99.38	1.93E-01		-1.35E-02	7.93E-02
NB-93M	16.57	9.43	5.09E-01	5.09E-01	9.89E-01	2.47E-01
NB-94	702.63	100.00	1.59E-01	1.59E-01	-1.06E-01	7.38E-02
	871.10	100.00	1.76E-01		1.34E-02	8.09E-02
NB-95	765.79	99.81	3.88E-01	3.88E-01	5.58E-02	1.83E-01
NB-95M	235.69	25.00	1.73E+02	1.73E+02	2.95E+00	8.44E+01
ZR-95	724.18	43.70	6.23E-01	4.05E-01	4.67E-01	2.93E-01
	756.72	55.30	4.05E-01		2.30E-02	1.87E-01
MO-99	181.06	6.20	2.40E+03	1.57E+03	3.87E+02	1.17E+03
	739.58	12.80	1.57E+03		-2.05E+02	7.27E+02
	778.00	4.50	5.36E+03		6.96E+02	2.50E+03
RU-103	497.08	89.00	2.45E-01	2.45E-01	-7.10E-02	1.15E-01
RU-106	621.84	9.80	1.57E+00	1.57E+00	-4.19E-02	7.30E-01
AG-108M	433.93	89.90	1.56E-01	1.56E-01	-7.41E-02	7.37E-02

Analysis Report for 1510064-03
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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
AG-108M	614.37	90.40	2.26E-01	1.56E-01	1.38E-02	1.07E-01
	722.95	90.50	2.19E-01		1.10E-01	1.03E-01
CD-109	88.03	3.72	3.21E+00	3.21E+00	2.48E+00	1.58E+00
AG-110M	657.75	93.14	2.13E-01	2.13E-01	0.00E+00	1.00E-01
	677.61	10.53	1.70E+00		-2.18E-01	7.92E-01
	706.67	16.46	1.26E+00		7.70E-01	5.93E-01
	763.93	21.98	1.03E+00		-5.48E-02	4.83E-01
	884.67	71.63	2.82E-01		-9.21E-02	1.30E-01
	1384.27	23.94	7.62E-01		-7.57E-02	3.30E-01
CD-113M	263.70	0.02	5.32E+02	5.32E+02	-9.55E+01	2.56E+02
SN-113	255.12	1.93	7.67E+00	2.41E-01	2.82E-01	3.70E+00
	391.69	64.90	2.41E-01		-1.03E-01	1.14E-01
TE123M	159.00	84.10	1.53E-01	1.53E-01	-1.86E-02	7.45E-02
SB-124	602.71	97.87	2.34E-01	2.34E-01	-8.90E-03	1.10E-01
	645.85	7.26	3.19E+00		-5.11E-01	1.49E+00
	722.78	11.10	2.44E+00		2.68E-02	1.14E+00
	1691.02	49.00	3.38E-01		2.34E-03	1.31E-01
I-125	35.49	6.49	1.24E+00	1.24E+00	-1.37E-01	6.07E-01
SB-125	176.33	6.89	1.72E+00	4.90E-01	-8.22E-02	8.37E-01
	427.89	29.33	4.90E-01		2.69E-02	2.32E-01
	463.38	10.35	1.43E+00		8.47E-01	6.76E-01
	600.56	17.80	9.56E-01		7.64E-02	4.49E-01
	635.90	11.32	1.42E+00		-1.57E-01	6.63E-01
SB-126	414.70	83.30	7.94E-01	7.94E-01	-2.79E-01	3.77E-01
	666.33	99.60	8.85E-01		4.63E-01	4.15E-01
	695.00	99.60	8.03E-01		2.11E-02	3.73E-01
	720.50	53.80	1.69E+00		-2.47E-01	7.92E-01
+ SN-126	87.57	* 37.00	3.25E-01	3.25E-01	2.60E-01	1.60E-01
SB-127	473.00	25.00	7.96E+01	7.88E+01	-2.08E+01	3.73E+01
	685.20	35.70	7.88E+01		-1.53E+01	3.68E+01
	783.80	14.70	2.14E+02		4.82E+01	9.98E+01
I-129	29.78	57.00	9.63E-02	9.63E-02	-3.02E-02	4.69E-02
	33.60	13.20	4.31E-01		-8.82E-02	2.10E-01
	39.58	7.52	8.23E-01		-7.36E-01	4.02E-01
I-131	284.30	6.05	2.21E+01	1.84E+00	-8.54E+00	1.06E+01
	364.48	81.20	1.84E+00		-1.03E-01	8.78E-01
	636.97	7.26	2.43E+01		-5.67E+00	1.13E+01
	722.89	1.80	1.23E+02		1.35E+00	5.76E+01
TE-132	49.72	13.10	2.22E+02	5.67E+01	7.02E+01	1.08E+02
	228.16	88.00	5.67E+01		-1.17E+00	2.74E+01
BA-133	81.00	33.00	3.68E-01	3.47E-01	-2.23E-01	1.81E-01
	302.84	17.80	8.04E-01		-7.25E-01	3.87E-01
	356.01	60.00	3.47E-01		-1.93E-03	1.68E-01
I-133	529.87	86.30	9.52E+08	9.52E+08	-7.22E+08	4.45E+08
XE-133	81.00	38.00	1.31E+01	1.31E+01	-7.95E+00	6.45E+00
CS-134	563.23	8.38	2.07E+00	2.26E-01	5.06E-01	9.77E-01
	569.32	15.43	1.05E+00		1.08E-01	4.95E-01
	604.70	97.60	2.40E-01		-5.32E-03	1.14E-01
	795.84	85.40	2.26E-01		4.00E-02	1.05E-01
	801.93	8.73	2.15E+00		4.32E-01	9.97E-01
CS-135	268.24	16.00	8.09E-01	8.09E-01	-9.12E-02	3.90E-01
@ I-135	1131.51	22.50	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	1260.41	28.60	1.00E+26		1.00E+26	1.00E+20

Analysis Report for 1510064-03

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
@ I-135	1678.03	9.54	1.00E+26	1.00E+26	1.00E+26	1.00E+20
CS-136	153.22	7.46	6.59E+00	7.25E-01	4.18E-01	3.21E+00
	163.89	4.61	1.05E+01		-3.38E+00	5.10E+00
	176.55	13.56	3.78E+00		-1.81E-01	1.84E+00
	273.65	12.66	4.78E+00		2.90E+00	2.31E+00
	340.57	48.50	1.46E+00		-8.66E-02	7.02E-01
	818.50	99.70	7.25E-01		2.09E-02	3.32E-01
	1048.07	79.60	1.04E+00		2.17E-02	4.72E-01
	1235.34	19.70	6.39E+00		9.07E-01	2.97E+00
CS-137	661.65	85.12	2.27E-01	2.27E-01	1.07E-01	1.07E-01
LA-138	788.74	34.00	5.39E-01	2.72E-01	3.81E-02	2.50E-01
	1435.80	66.00	2.72E-01		4.20E-02	1.18E-01
CE-139	165.85	80.35	1.60E-01	1.60E-01	-1.18E-03	7.75E-02
BA-140	162.64	6.70	7.44E+00	2.63E+00	-3.82E+00	3.61E+00
	304.84	4.50	1.43E+01		3.96E+00	6.89E+00
	423.70	3.20	2.06E+01		7.99E+00	9.79E+00
	437.55	2.00	3.46E+01		1.90E+01	1.64E+01
	537.32	25.00	2.63E+00		3.54E-01	1.23E+00
LA-140	328.77	20.50	3.09E+00	1.00E+00	5.29E-01	1.48E+00
	487.03	45.50	1.31E+00		-9.60E-02	6.11E-01
	815.85	23.50	3.38E+00		1.02E-01	1.55E+00
	1596.49	95.49	1.00E+00		0.00E+00	4.38E-01
CE-141	145.44	48.40	4.27E-01	4.27E-01	4.02E-02	2.08E-01
CE-143	57.36	11.80	1.01E+06	5.86E+05	-7.02E+05	4.94E+05
	293.26	42.00	5.86E+05		5.35E+04	2.84E+05
	664.55	5.20	5.10E+06		-4.49E+05	2.39E+06
CE-144	133.54	10.80	1.04E+00	1.04E+00	-3.35E-01	5.05E-01
PM-144	476.78	42.00	3.34E-01	1.52E-01	6.15E-02	1.57E-01
	618.01	98.60	1.52E-01		-3.20E-02	7.02E-02
	696.49	99.49	1.65E-01		-6.64E-02	7.61E-02
PM-145	36.85	21.70	2.78E-01	1.51E-01	6.66E-02	1.36E-01
	37.36	39.70	1.51E-01		-2.18E-02	7.37E-02
	42.30	15.10	4.47E-01		2.91E-01	2.19E-01
	72.40	2.31	5.30E+00		2.18E-01	2.61E+00
PM-146	453.90	39.94	3.76E-01	3.76E-01	2.26E-01	1.78E-01
	735.90	14.01	1.26E+00		6.09E-02	5.83E-01
	747.13	13.10	1.34E+00		9.32E-02	6.21E-01
ND-147	91.11	28.90	2.43E+00	2.43E+00	5.81E+00	1.19E+00
	531.02	13.10	6.51E+00		-1.57E+00	3.05E+00
PM-149	285.90	3.10	2.71E+04	2.71E+04	3.11E+03	1.30E+04
EU-152	121.78	20.50	4.85E-01	4.85E-01	-1.60E-01	2.36E-01
	244.69	5.40	2.70E+00		-3.20E-01	1.31E+00
	344.27	19.13	7.00E-01		-5.06E-02	3.35E-01
	778.89	9.20	2.20E+00		2.85E-01	1.03E+00
	964.01	10.40	2.21E+00		2.80E-01	1.02E+00
	1085.78	7.22	3.20E+00		1.44E+00	1.47E+00
	1112.02	9.60	2.08E+00		-2.39E-02	9.44E-01
	1407.95	14.94	1.19E+00		1.72E-01	5.15E-01
GD-153	97.43	31.30	3.36E-01	3.36E-01	8.39E-02	1.64E-01
	103.18	22.20	4.57E-01		9.98E-02	2.23E-01
EU-154	123.07	40.50	2.47E-01	2.47E-01	-3.16E-02	1.21E-01
	723.30	19.70	1.01E+00		5.07E-01	4.75E-01
	873.19	11.50	1.49E+00		-1.69E-01	6.83E-01

Analysis Report for 1510064-03

CP5005S14-15

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
EU-154	996.32	10.30	1.78E+00	2.47E-01	-1.05E+00	8.07E-01
	1004.76	17.90	1.15E+00		7.92E-01	5.28E-01
	1274.45	35.50	6.40E-01		-2.28E-01	2.90E-01
+ EU-155	86.50 *	30.90	3.93E-01	3.93E-01	3.15E-01	1.93E-01
	105.30	20.70	4.52E-01		-3.13E-01	2.21E-01
EU-156	811.77	10.40	6.38E+00	6.38E+00	1.00E+00	2.95E+00
	1153.47	7.20	1.10E+01		-5.74E-01	5.04E+00
	1230.71	8.90	1.04E+01		-6.93E-01	4.77E+00
HO-166M	184.41	72.60	1.88E-01	1.88E-01	2.51E-01	9.17E-02
	280.45	29.60	4.30E-01		-1.07E-01	2.07E-01
	410.94	11.10	1.38E+00		4.25E-02	6.60E-01
	711.69	54.10	3.41E-01		6.47E-02	1.59E-01
TM-171	66.72	0.14	7.05E+01	7.05E+01	3.54E+01	3.46E+01
HF-172	81.75	4.52	2.55E+00	9.15E-01	-8.44E+00	1.25E+00
	125.81	11.30	9.15E-01		-4.02E-01	4.46E-01
LU-172	181.53	20.60	1.14E+01	6.38E+00	-4.06E-01	5.55E+00
	810.06	16.63	2.04E+01		6.06E+00	9.47E+00
	912.12	15.25	3.30E+01		3.02E+01	1.56E+01
	1093.66	62.50	6.38E+00		4.73E-01	2.92E+00
LU-173	100.72	5.24	1.84E+00	6.47E-01	1.02E+00	8.98E-01
	272.11	21.20	6.47E-01		-1.75E-01	3.12E-01
HF-175	343.40	84.00	2.15E-01	2.15E-01	-1.51E-02	1.03E-01
LU-176	88.34	13.30	8.87E-01	1.44E-01	1.82E+00	4.36E-01
	201.83	86.00	1.45E-01		3.70E-03	7.03E-02
	306.78	94.00	1.44E-01		-3.94E-02	6.93E-02
TA-182	67.75	41.20	2.72E-01	2.72E-01	-3.55E-02	1.33E-01
	1121.30	34.90	9.03E-01		-6.26E-02	4.20E-01
	1189.05	16.23	1.81E+00		3.90E-01	8.33E-01
	1221.41	26.98	1.06E+00		1.11E-01	4.84E-01
	1231.02	11.44	2.65E+00		-1.77E-01	1.22E+00
	308.46	29.68	5.92E-01		3.43E-01	-4.19E-02	2.84E-01
IR-192	468.07	48.10	3.43E-01	3.43E-01	-4.22E-02	1.61E-01
HG-203	279.19	77.30	2.55E-01	2.55E-01	-7.44E-03	1.23E-01
BI-207	569.67	97.72	1.62E-01	1.62E-01	1.66E-02	7.63E-02
	1063.62	74.90	2.79E-01		-7.92E-02	1.28E-01
+ TL-208	583.14 *	30.22	8.57E-01	2.58E-01	1.85E+00	4.12E-01
	860.37	4.48	4.49E+00		1.98E+00	2.08E+00
	2614.66 *	35.85	2.58E-01		1.11E+00	7.67E-02
BI-210M	262.00	45.00	2.64E-01	2.64E-01	-1.16E-01	1.27E-01
	300.00	23.00	6.97E-01		-2.67E-01	3.37E-01
PB-210	46.50	4.25	1.66E+00	1.66E+00	5.86E-01	8.11E-01
PB-211	404.84	2.90	5.12E+00	5.12E+00	5.89E-03	2.44E+00
	831.96	2.90	6.83E+00		2.75E+00	3.17E+00
BI-212	727.17	11.80	1.67E+00	1.67E+00	6.16E-01	7.82E-01
	1620.62	2.75	6.58E+00		1.98E+00	2.82E+00
+ PB-212	238.63 *	44.60	4.89E-01	4.89E-01	1.75E+00	2.40E-01
	300.09	3.41	4.70E+00		-1.80E+00	2.27E+00
+ BI-214	609.31 *	46.30	5.87E-01	5.87E-01	1.75E+00	2.82E-01
	1120.29 *	15.10	1.40E+00		1.47E+00	6.38E-01
	1764.49 *	15.80	1.28E+00		1.15E+00	5.52E-01
	2204.22	4.98	5.40E+00		3.27E+00	2.36E+00
+ PB-214	295.21 *	19.19	7.19E-01	5.71E-01	1.31E+00	3.46E-01
	351.92 *	37.19	5.71E-01		1.62E+00	2.77E-01

Analysis Report for 1510064-03
CP5005S14-15

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
RN-219	401.80	6.50	2.21E+00	2.21E+00	-1.86E-01	1.05E+00
RA-223	323.87	3.88	3.60E+00	3.60E+00	1.19E+00	1.73E+00
RA-224	240.98	3.95	5.29E+00	5.29E+00	2.05E+01	2.59E+00
RA-225	40.00	31.00	7.48E-01	7.48E-01	-6.69E-01	3.65E-01
+ RA-226	186.21 *	3.28	5.23E+00	5.23E+00	5.87E+00	2.56E+00
TH-227	50.10	8.40	8.72E-01	8.72E-01	2.76E-01	4.27E-01
	236.00	11.50	1.69E+00		2.89E-02	8.28E-01
	256.20	6.30	1.98E+00		1.43E-01	9.52E-01
+ AC-228	338.32 *	11.40	1.52E+00	1.23E+00	1.33E+00	7.33E-01
	911.07 *	27.70	1.23E+00		9.95E-01	5.89E-01
	969.11 *	16.60	1.60E+00		1.00E+00	7.52E-01
TH-230	48.44	16.90	4.22E-01	4.22E-01	3.18E-02	2.06E-01
	62.85	4.60	2.02E+00		1.21E+00	9.90E-01
	67.67	0.37	2.55E+01		-3.33E+00	1.25E+01
PA-231	283.67	1.60	7.49E+00	6.19E+00	-9.98E-01	3.59E+00
	302.67	2.30	6.19E+00		-5.58E+00	2.98E+00
TH-231	25.64	14.70	3.79E-01	3.79E-01	-5.67E-02	1.85E-01
	84.21	6.40	1.64E+00		-7.65E+00	8.06E-01
PA-233	311.98	38.60	7.16E-01	7.16E-01	3.88E-02	3.43E-01
PA-234	131.20	20.40	5.20E-01	5.20E-01	2.64E-01	2.53E-01
	733.99	8.80	1.99E+00		-5.77E-01	9.25E-01
	946.00	12.00	1.63E+00		3.56E-01	7.48E-01
PA-234M	1001.03	0.92	1.99E+01	1.99E+01	-8.08E+00	9.02E+00
TH-234	63.29	3.80	2.46E+00	2.46E+00	1.67E+00	1.20E+00
U-235	143.76	10.50	1.07E+00	1.07E+00	1.19E-01	5.20E-01
	163.35	4.70	2.33E+00		-7.51E-01	1.13E+00
	205.31	4.70	2.86E+00		2.09E-01	1.39E+00
+ NP-237	86.50 *	12.60	9.53E-01	9.53E-01	7.64E-01	4.69E-01
NP-239	106.10	22.70	1.62E+03	1.62E+03	-1.12E+03	7.90E+02
	228.18	10.70	4.72E+03		1.05E+03	2.28E+03
	277.60	14.10	3.64E+03		2.30E+03	1.75E+03
AM-241	59.54	35.90	2.50E-01	2.50E-01	2.91E-01	1.22E-01
AM-243	74.67	66.00	2.01E-01	2.01E-01	8.30E-01	9.89E-02
+ CM-243	209.75 *	3.29	4.08E+00	1.02E+00	3.82E+00	1.98E+00
	228.14	10.60	1.19E+00		-2.46E-02	5.74E-01
	277.60 *	14.00	1.02E+00		7.27E-01	4.95E-01

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

No Action Level results available for reporting purposes.

Analysis Report for 1510064-03
CP5005S14-15

DATA REVIEW COMMENTS REPORT

Creation Date

Comment

User

No Data Review Comments Entered.

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

Sample Title: CP5005S14-15

Elapsed Live time: 3600
 Elapsed Real Time: 3639

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	26	122
17:	63	72	75	65	82	58	63	77
25:	67	67	54	41	55	52	60	69
33:	58	59	64	53	67	61	61	85
41:	56	79	62	63	90	115	91	57
49:	62	70	69	72	84	74	90	73
57:	93	102	94	90	108	144	136	100
65:	90	87	107	96	110	93	101	109
73:	179	220	231	308	271	141	91	84
81:	82	82	80	117	115	129	127	132
89:	106	97	122	140	133	75	56	63
97:	51	71	67	73	57	57	71	55
105:	55	53	56	58	70	60	66	70
113:	73	63	61	62	60	50	62	55
121:	62	46	49	55	62	58	60	55
129:	46	63	62	65	63	46	50	43
137:	52	56	69	51	49	61	52	72
145:	54	51	47	70	54	51	51	57
153:	61	32	52	49	49	44	50	42
161:	55	40	50	28	41	41	50	39
169:	55	49	38	44	40	42	41	59
177:	43	42	41	45	44	59	42	59
185:	84	84	47	47	35	36	48	45
193:	46	40	39	45	41	44	37	40
201:	51	40	34	46	31	40	53	50
209:	69	48	30	28	28	37	35	35
217:	24	30	37	34	39	29	25	26
225:	34	36	29	38	35	40	35	36
233:	33	29	38	49	118	191	162	80
241:	63	46	30	31	26	27	27	25
249:	28	29	34	26	29	24	23	35
257:	24	17	24	35	20	24	22	19
265:	22	20	29	28	48	27	21	22
273:	19	23	22	33	43	27	23	15
281:	18	16	23	12	22	30	22	18
289:	32	26	27	16	33	82	77	42
297:	18	23	26	36	30	20	26	23
305:	25	20	18	21	31	18	17	25
313:	17	18	26	26	14	18	19	23
321:	12	24	23	29	18	16	29	15
329:	18	23	15	20	23	18	15	29
337:	38	53	31	18	14	19	8	24
345:	13	17	21	22	23	63	109	98
353:	44	24	21	14	13	18	22	13
361:	19	18	10	24	12	15	9	17

369: 13 16 13 19 19 13 14 15

Sample Title: CP5005S14-15

Channel	1	2	3	4	5	6	7	8	9
377:	14	11	17	9	7	16	18	12	
385:	13	23	13	7	17	17	13	17	
393:	7	10	17	17	15	14	13	14	
401:	14	17	15	15	17	19	11	19	
409:	27	18	10	13	12	18	11	12	
417:	10	10	12	11	15	13	14	11	
425:	13	13	18	11	9	14	10	9	
433:	14	12	13	11	16	18	16	12	
441:	12	7	12	11	10	7	6	10	
449:	14	11	12	10	18	12	11	13	
457:	11	9	10	11	10	21	10	17	
465:	10	5	8	6	7	5	13	4	
473:	10	11	4	12	9	13	10	7	
481:	7	7	9	4	7	5	11	12	
489:	8	9	5	15	6	8	13	11	
497:	6	4	9	5	11	9	11	8	
505:	6	10	10	12	22	42	23	21	
513:	10	7	17	13	8	13	10	8	
521:	12	12	9	8	6	5	5	13	
529:	9	8	11	10	3	12	13	13	
537:	8	4	7	8	5	13	13	14	
545:	11	11	8	6	11	6	9	9	
553:	14	10	4	11	8	11	5	12	
561:	7	10	15	9	14	9	13	6	
569:	11	8	8	8	3	8	5	7	
577:	7	10	10	16	17	34	46	36	
585:	13	13	11	11	6	6	6	7	
593:	14	5	5	12	9	6	11	9	
601:	7	6	11	9	5	14	34	57	
609:	68	48	19	8	9	10	4	5	
617:	6	8	4	7	4	5	4	8	
625:	10	6	8	5	9	10	6	5	
633:	7	8	6	6	6	9	10	4	
641:	7	10	5	8	5	12	8	6	
649:	8	5	12	10	8	7	4	9	
657:	15	14	5	11	8	9	9	9	
665:	9	10	7	7	9	9	5	8	
673:	1	4	8	6	9	7	9	8	
681:	9	8	4	10	6	6	12	9	
689:	5	5	14	8	6	8	7	7	
697:	5	2	1	6	5	8	7	8	
705:	9	6	10	12	11	6	9	8	
713:	4	4	5	5	10	15	9	6	
721:	9	2	7	8	11	9	17	11	
729:	4	4	5	11	7	4	11	6	
737:	6	4	3	8	5	5	4	5	
745:	6	6	10	5	5	9	5	6	
753:	3	8	8	6	3	3	7	4	
761:	7	14	12	13	8	4	4	12	
769:	14	7	8	7	5	10	5	12	
777:	11	5	7	8	8	3	8	8	
785:	6	7	11	5	1	5	3	9	
793:	4	12	8	7	6	3	5	8	

801: 6 7 4 7 7 6 7 4

Sample Title: CP5005S14-15

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

1233: 7 3 6 3 7 10 8 9

Sample Title: CP5005S14-15

Channel	1	2	3	4	5	6	7	8	9
1241:	5	7	5	2	4	6	7	1	
1249:	4	2	5	4	5	5	4	2	
1257:	3	4	6	3	3	2	3	3	
1265:	5	5	2	4	5	2	8	4	
1273:	3	4	4	3	2	2	7	6	
1281:	3	3	3	2	3	5	2	3	
1289:	3	1	2	2	4	3	4	1	
1297:	4	4	4	2	6	0	2	2	
1305:	2	3	4	5	6	4	5	3	
1313:	1	3	1	5	3	4	2	2	
1321:	0	1	4	2	8	4	2	1	
1329:	1	5	4	2	4	4	0	2	
1337:	0	4	5	1	2	3	1	0	
1345:	0	1	2	2	1	3	1	0	
1353:	1	1	3	5	2	3	2	2	
1361:	1	2	2	4	2	1	3	1	
1369:	4	3	3	1	1	3	2	3	
1377:	8	8	5	3	2	1	1	3	
1385:	2	0	2	0	2	1	0	0	
1393:	1	2	2	3	4	1	2	2	
1401:	1	3	0	2	0	2	1	1	
1409:	4	2	2	1	0	2	2	1	
1417:	1	1	2	2	2	0	0	0	
1425:	1	2	3	1	1	4	0	2	
1433:	2	1	1	0	3	3	1	2	
1441:	0	1	2	1	2	2	0	0	
1449:	1	1	4	1	0	2	0	1	
1457:	3	11	21	73	90	72	18	4	
1465:	2	0	0	1	1	1	1	1	
1473:	2	1	2	1	1	0	0	1	
1481:	0	2	0	3	2	1	1	1	
1489:	0	2	1	1	1	2	3	3	
1497:	0	2	3	2	2	0	3	0	
1505:	2	4	0	2	2	4	0	1	
1513:	2	2	0	1	1	2	1	1	
1521:	0	0	1	2	0	1	1	1	
1529:	0	2	1	0	3	1	1	4	
1537:	1	1	1	1	1	1	1	1	
1545:	3	1	3	0	3	1	0	0	
1553:	0	1	0	1	1	0	0	1	
1561:	0	1	1	1	1	1	0	0	
1569:	2	2	2	1	2	0	4	0	
1577:	0	1	2	1	2	0	0	1	
1585:	3	3	2	2	4	0	2	4	
1593:	7	1	3	3	3	0	0	0	
1601:	0	0	0	0	2	0	0	1	
1609:	1	0	3	1	2	0	0	0	
1617:	0	0	1	2	4	4	0	1	
1625:	0	1	0	3	0	1	5	3	
1633:	2	0	0	1	0	1	1	0	
1641:	0	0	4	2	0	1	0	1	
1649:	1	1	4	0	3	1	1	3	
1657:	1	0	3	1	1	4	0	0	

1665: 0 3 0 1 2 0 0 0

Sample Title: CP5005S14-15

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

2097: 2 1 1 0 1 0 3 3

Sample Title: CP5005S14-15

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

2529: 1 1 0 0 0 0 0 0

Sample Title: CP5005S14-15

Channel	-----	-----	-----	-----	-----	-----	-----	-----
2537:	0	0	1	1	0	1	0	0
2545:	0	0	0	0	0	0	1	0
2553:	0	0	0	1	0	0	0	0
2561:	0	1	0	0	0	0	0	0
2569:	0	0	0	0	0	0	0	0
2577:	0	0	0	0	0	0	0	0
2585:	0	2	0	0	0	0	0	0
2593:	0	0	3	1	0	1	1	0
2601:	0	0	0	0	0	0	0	1
2609:	0	0	0	2	2	3	12	6
2617:	5	0	0	0	0	1	0	0
2625:	0	1	0	0	0	0	0	0
2633:	1	0	0	1	1	0	0	0
2641:	1	0	0	0	0	0	0	0
2649:	0	0	0	0	0	1	0	0
2657:	0	0	0	0	1	0	0	0
2665:	0	0	0	0	0	0	0	0
2673:	0	0	0	0	0	0	1	0
2681:	2	0	0	0	0	0	0	0
2689:	0	0	0	0	0	0	1	2
2697:	0	0	1	0	0	1	1	0
2705:	0	0	0	1	0	0	0	0
2713:	0	0	0	1	0	0	0	0
2721:	0	0	0	0	0	0	2	0
2729:	0	3	0	0	0	1	0	0
2737:	0	2	0	0	1	1	0	0
2745:	0	0	0	0	0	0	1	0
2753:	1	0	1	0	1	1	0	1
2761:	0	1	0	1	0	1	0	0
2769:	0	0	0	0	0	1	0	0
2777:	0	0	0	1	0	0	0	0
2785:	0	1	1	0	0	0	0	0
2793:	1	0	0	0	0	0	0	0
2801:	0	0	0	1	0	0	0	0
2809:	0	2	0	0	0	0	0	0
2817:	0	1	0	0	0	0	0	0
2825:	0	0	0	0	0	0	0	0
2833:	0	0	0	1	0	0	0	0
2841:	1	0	0	1	0	0	0	2
2849:	0	1	0	0	0	0	0	0
2857:	1	0	0	1	0	0	1	0
2865:	0	0	0	0	0	0	0	0
2873:	1	0	0	0	0	0	0	0
2881:	0	0	0	0	0	0	1	0
2889:	0	0	1	0	1	0	1	0
2897:	0	0	0	0	0	0	0	1
2905:	0	0	0	0	0	1	1	1
2913:	0	1	0	0	0	0	0	0
2921:	0	0	0	0	0	0	0	0
2929:	0	1	0	0	0	0	0	0
2937:	0	0	0	0	0	0	0	0
2945:	0	0	1	0	0	0	0	0
2953:	0	0	0	1	0	0	1	0

2961: 0 1 0 0 0 0 1 1

Sample Title: CP5005S14-15

Channel	1	2	3	4	5	6	7	8
2969:	1	1	0	0	0	0	0	1
2977:	0	0	0	0	0	0	1	0
2985:	0	0	0	0	0	1	0	0
2993:	0	0	0	0	0	0	0	0
3001:	1	0	0	0	0	0	0	0
3009:	1	0	1	0	0	0	0	0
3017:	0	0	0	0	0	0	0	1
3025:	1	0	0	0	0	0	0	1
3033:	0	0	0	0	0	0	1	1
3041:	0	1	0	0	0	0	0	1
3049:	0	0	0	0	0	0	0	0
3057:	0	0	0	0	0	0	0	0
3065:	0	0	0	0	0	0	0	0
3073:	0	1	0	0	0	0	1	0
3081:	0	0	0	0	0	0	0	0
3089:	0	0	1	0	0	0	0	0
3097:	0	0	1	0	0	0	0	1
3105:	0	1	2	0	0	0	1	0
3113:	0	0	0	0	0	0	0	0
3121:	0	0	0	0	0	0	0	0
3129:	0	0	0	0	0	0	0	0
3137:	0	0	0	1	0	1	0	0
3145:	0	0	0	0	0	0	0	0
3153:	0	0	2	0	0	0	0	0
3161:	0	0	0	0	0	0	0	0
3169:	0	0	0	0	0	0	1	0
3177:	0	0	0	0	0	0	0	0
3185:	0	0	1	0	0	0	0	0
3193:	0	1	0	0	0	1	0	0
3201:	0	0	0	0	0	0	0	1
3209:	0	0	0	0	0	0	0	0
3217:	0	0	0	0	0	0	0	0
3225:	0	0	0	0	1	1	1	0
3233:	0	0	0	0	0	0	0	1
3241:	0	0	0	0	0	0	0	0
3249:	1	0	0	0	0	0	0	0
3257:	0	0	1	0	0	0	0	0
3265:	0	0	0	0	0	0	0	0
3273:	0	0	0	0	1	0	0	0
3281:	0	0	0	0	0	0	0	0
3289:	1	1	0	1	0	1	0	0
3297:	0	0	0	0	0	0	0	0
3305:	0	0	0	0	0	0	0	0
3313:	0	0	0	0	0	1	0	0
3321:	0	0	0	0	0	0	0	0
3329:	0	0	0	0	0	0	1	0
3337:	0	0	0	0	0	0	0	0
3345:	0	0	0	0	0	1	0	0
3353:	0	0	1	0	0	0	0	0
3361:	0	0	0	0	0	0	1	1
3369:	0	0	0	0	2	0	0	0
3377:	1	1	0	0	0	0	1	0
3385:	0	0	0	0	0	0	1	0

3393: 0 0 0 0 0 0 0 0 0

Sample Title: CP5005S14-15

Channel								
3401:	0	0	0	0	0	0	0	0
3409:	0	0	0	0	0	0	0	0
3417:	0	0	0	0	0	0	0	0
3425:	1	0	0	0	0	0	0	0
3433:	0	0	0	0	0	0	0	0
3441:	0	0	0	0	0	0	0	0
3449:	2	0	0	0	0	0	0	0
3457:	1	0	0	0	1	2	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	0	0	0	2	0
3497:	0	1	0	1	0	1	0	0
3505:	0	0	0	2	0	0	0	0
3513:	0	0	0	0	0	0	0	0
3521:	0	0	0	0	0	0	0	0
3529:	0	0	0	0	0	0	0	0
3537:	0	0	0	0	0	0	0	0
3545:	0	0	0	0	1	0	0	0
3553:	0	0	0	0	0	0	0	0
3561:	0	0	0	1	0	0	0	0
3569:	0	0	0	0	1	0	0	0
3577:	1	0	0	0	0	0	1	0
3585:	1	0	0	0	0	0	0	1
3593:	0	0	0	1	0	2	0	0
3601:	0	1	0	0	0	0	0	0
3609:	0	0	0	0	0	0	0	0
3617:	0	0	0	0	1	0	0	0
3625:	0	0	0	0	0	0	0	0
3633:	0	0	0	0	0	0	0	0
3641:	0	0	0	0	0	0	0	0
3649:	0	0	0	0	0	0	0	0
3657:	0	0	0	0	0	0	0	0
3665:	0	0	0	0	2	0	0	0
3673:	1	0	0	0	1	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	1	1	0	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	1	0
3737:	0	1	0	0	0	0	0	0
3745:	1	0	1	1	0	0	0	0
3753:	0	0	1	0	0	0	2	0
3761:	0	0	0	0	0	0	0	2
3769:	0	0	0	0	0	0	0	0
3777:	0	0	0	0	0	0	0	0
3785:	0	0	0	0	0	1	0	0
3793:	0	0	0	0	0	0	0	0
3801:	1	0	0	0	0	0	0	0
3809:	0	0	0	0	1	0	1	0
3817:	1	0	0	0	0	0	0	0

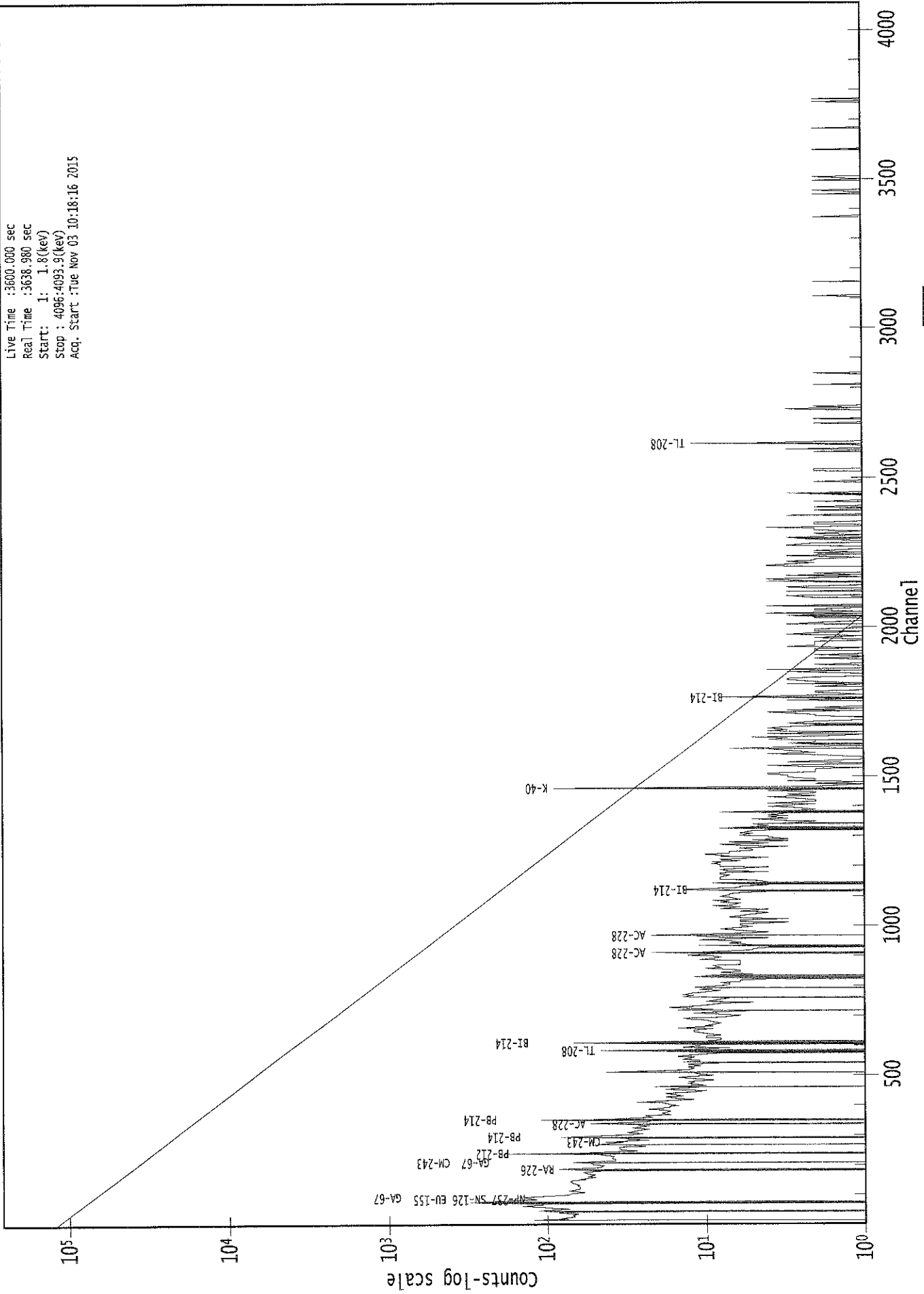
3825: 1 0 0 0 0 1 0 1

Sample Title: CP5005S14-15

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

0000029022.CNF

Live Time :3600.000 sec
Real Time :3638.980 sec
Start: 1: 1.8(keV)
Stop : 4096:4093.9(keV)
Acq. Start :Tue Nov 03 10:18:16 2015



00356

ROI Type: 2

ROI Type: 1

veb
11/3/15Analysis Report for 1510064-04
CP5005S14-15

GAMMA SPECTRUM ANALYSIS

Sample Identification : 1510064-04
Sample Description : CP5005S14-15
Sample Type : SOIL

Sample Size : 5.070E+02 grams
Facility : Countroom

Sample Taken On : 10/6/2015 7:33:40AM
Acquisition Started : 11/3/2015 11:27:28AM

Procedure : GAS-1402 pCi
Operator : Administrator
Detector Name : GE4
Geometry : GAS-1402
Live Time : 3600.0 seconds
Real Time : 3700.6 seconds

Dead Time : 2.72 %

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 : 29026

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
11/3/15

Analysis Report for 1510064-04
CP5005S14-15

PEAK LOCATE REPORT

Peak Locate Performed on : 11/3/2015 12:29:10PM
 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	76.28	75.54	0.0000	0.00
2	93.03	92.30	0.0000	0.00
3	115.21	114.49	0.0000	0.00
4	129.70	128.99	0.0000	0.00
5	185.71	185.02	0.0000	0.00
6	209.03	208.35	0.0000	0.00
7	239.44	238.78	0.0000	0.00
8	270.51	269.86	0.0000	0.00
9	295.74	295.10	0.0000	0.00
10	329.19	328.57	0.0000	0.00
11	337.79	337.18	0.0000	0.00
12	351.95	351.34	0.0000	0.00
13	510.46	509.92	0.0000	0.00
14	583.08	582.58	0.0000	0.00
15	609.59	609.10	0.0000	0.00
16	615.62	615.13	0.0000	0.00
17	627.25	626.77	0.0000	0.00
18	727.27	726.83	0.0000	0.00
19	863.41	863.04	0.0000	0.00
20	911.99	911.65	0.0000	0.00
21	1120.86	1120.63	0.0000	0.00
22	1271.91	1271.77	0.0000	0.00
23	1282.46	1282.33	0.0000	0.00
24	1440.00	1439.96	0.0000	0.00
25	1461.02	1460.99	0.0000	0.00
26	1561.52	1561.56	0.0000	0.00
27	1590.15	1590.20	0.0000	0.00
28	1716.05	1716.18	0.0000	0.00
29	1729.62	1729.76	0.0000	0.00
30	1765.19	1765.35	0.0000	0.00
31	1847.07	1847.28	0.0000	0.00
32	2052.64	2053.00	0.0000	0.00
33	2196.76	2197.22	0.0000	0.00
34	2204.43	2204.89	0.0000	0.00
35	2379.57	2380.17	0.0000	0.00
36	2614.81	2615.58	0.0000	0.00

? = Adjacent peak noted
 Errors quoted at 2.000sigma

Analysis Report for 1510064-04
CP5005S14-15

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/3/2015 12:29:10PM

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	76.28	71 -	81	75.54	6.90E+02	138.30	2.13E+03	4.02
2	93.03	90 -	97	92.30	1.33E+02	89.31	1.19E+03	1.87
3	115.21	111 -	119	114.49	9.15E+01	78.57	8.89E+02	4.53
4	129.70	125 -	133	128.99	7.17E+01	81.40	9.73E+02	2.14
5	185.71	181 -	189	185.02	1.75E+02	69.91	6.47E+02	3.14
6	209.03	205 -	211	208.35	5.95E+01	54.66	4.99E+02	2.20
7	239.44	233 -	245	238.78	5.58E+02	93.47	7.60E+02	2.50
8	270.51	266 -	274	269.86	5.90E+01	53.28	4.00E+02	1.26
9	295.74	290 -	301	295.10	1.74E+02	66.69	4.72E+02	2.31
M 10	329.19	325 -	342	328.57	5.23E+01	38.63	1.99E+02	3.26
m 11	337.79	325 -	342	337.18	1.04E+02	50.00	2.95E+02	3.27
12	351.95	346 -	355	351.34	2.68E+02	54.76	2.75E+02	2.36
13	510.46	504 -	515	509.92	8.78E+01	46.13	2.22E+02	1.92
14	583.08	578 -	587	582.58	1.29E+02	35.92	1.12E+02	2.77
M 15	609.59	602 -	618	609.10	1.99E+02	36.51	8.47E+01	3.00
m 16	615.62	602 -	618	615.13	2.72E+01	21.18	5.73E+01	2.87
17	627.25	624 -	630	626.77	2.36E+01	20.10	5.69E+01	2.26
18	727.27	724 -	729	726.83	3.37E+01	21.19	6.26E+01	2.15
19	863.41	858 -	869	863.04	3.09E+01	26.98	6.82E+01	9.50
20	911.99	907 -	920	911.65	5.50E+01	38.47	1.40E+02	3.03
21	1120.86	1113 -	1127	1120.63	4.73E+01	32.30	8.95E+01	5.12
22	1271.91	1268 -	1275	1271.77	1.62E+01	13.56	1.96E+01	3.46
23	1282.46	1276 -	1292	1282.33	3.33E+01	25.95	5.35E+01	5.51
24	1440.00	1436 -	1443	1439.96	1.06E+01	11.49	1.27E+01	3.12
25	1461.02	1454 -	1467	1460.99	2.34E+02	33.51	2.09E+01	3.35
26	1561.52	1556 -	1565	1561.56	9.00E+00	6.00	0.00E+00	1.98
27	1590.15	1582 -	1597	1590.20	2.45E+01	16.00	1.49E+01	5.75
28	1716.05	1712 -	1721	1716.18	1.10E+01	6.63	0.00E+00	6.30
29	1729.62	1725 -	1733	1729.76	1.07E+01	8.50	4.62E+00	5.32
30	1765.19	1761 -	1769	1765.35	3.10E+01	11.14	0.00E+00	2.14
31	1847.07	1843 -	1853	1847.28	8.88E+00	8.85	6.25E+00	1.11
32	2052.64	2050 -	2055	2053.00	5.00E+00	4.47	0.00E+00	1.50
33	2196.76	2192 -	2200	2197.22	9.00E+00	6.00	0.00E+00	1.87
34	2204.43	2202 -	2209	2204.89	1.03E+01	9.59	9.47E+00	2.83
35	2379.57	2377 -	2382	2380.17	6.00E+00	4.90	0.00E+00	1.98
36	2614.81	2610 -	2619	2615.58	2.78E+01	12.04	4.37E+00	3.62

Analysis Report for 1510064-04
CP5005S14-15

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 : 11/3/2015 12:29:10PM

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	76.28	71 -	81	6.90E+02	138.30	2.13E+03	1.05E+02
2	93.03	90 -	97	1.33E+02	89.31	1.19E+03	7.09E+01
3	115.21	111 -	119	9.15E+01	78.57	8.89E+02	6.26E+01
4	129.70	125 -	133	7.17E+01	81.40	9.73E+02	6.54E+01
5	185.71	181 -	189	1.75E+02	69.91	6.47E+02	5.32E+01
6	209.03	205 -	211	5.95E+01	54.66	4.99E+02	4.31E+01
7	239.44	233 -	245	5.58E+02	93.47	7.60E+02	6.63E+01
8	270.51	266 -	274	5.90E+01	53.28	4.00E+02	4.19E+01
9	295.74	290 -	301	1.74E+02	66.69	4.72E+02	5.04E+01
M 10	329.19	325 -	342	5.23E+01	38.63	1.99E+02	2.32E+01
m 11	337.79	325 -	342	1.04E+02	50.00	2.95E+02	2.82E+01
12	351.95	346 -	355	2.68E+02	54.76	2.75E+02	3.61E+01
13	510.46	504 -	515	8.78E+01	46.13	2.22E+02	3.46E+01
14	583.08	578 -	587	1.29E+02	35.92	1.12E+02	2.29E+01
M 15	609.59	602 -	618	1.99E+02	36.51	8.47E+01	1.51E+01
m 16	615.62	602 -	618	2.72E+01	21.18	5.73E+01	1.24E+01
17	627.25	624 -	630	2.36E+01	20.10	5.69E+01	1.45E+01
18	727.27	724 -	729	3.37E+01	21.19	6.26E+01	1.46E+01
19	863.41	858 -	869	3.09E+01	26.98	6.82E+01	2.02E+01
20	911.99	907 -	920	5.50E+01	38.47	1.40E+02	2.92E+01
21	1120.86	1113 -	1127	4.73E+01	32.30	8.95E+01	2.40E+01
22	1271.91	1268 -	1275	1.62E+01	13.56	1.96E+01	8.98E+00
23	1282.46	1276 -	1292	3.33E+01	25.95	5.35E+01	1.91E+01
24	1440.00	1436 -	1443	1.06E+01	11.49	1.27E+01	7.77E+00
25	1461.02	1454 -	1467	2.34E+02	33.51	2.09E+01	1.13E+01
26	1561.52	1556 -	1565	9.00E+00	6.00	0.00E+00	0.00E+00
27	1590.15	1582 -	1597	2.45E+01	16.00	1.49E+01	1.03E+01
28	1716.05	1712 -	1721	1.10E+01	6.63	0.00E+00	0.00E+00
29	1729.62	1725 -	1733	1.07E+01	8.50	4.62E+00	4.46E+00
30	1765.19	1761 -	1769	3.10E+01	11.14	0.00E+00	0.00E+00
31	1847.07	1843 -	1853	8.88E+00	8.85	6.25E+00	5.37E+00

Analysis Report for 1510064-04

CP5005S14-15

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
32	2052.64	2050 -	2055	5.00E+00	4.47	0.00E+00	0.00E+00
33	2196.76	2192 -	2200	9.00E+00	6.00	0.00E+00	0.00E+00
34	2204.43	2202 -	2209	1.03E+01	9.59	9.47E+00	5.87E+00
35	2379.57	2377 -	2382	6.00E+00	4.90	0.00E+00	0.00E+00
36	2614.81	2610 -	2619	2.78E+01	12.04	4.37E+00	4.77E+00

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

PEAK WITH NID REPORT

Peak Analysis Performed on : 11/3/2015 12:29:10PM

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	76.28	71 -	81	75.54	6.90E+02	138.30	2.13E+03	.....
2	93.03	90 -	97	92.30	1.33E+02	89.31	1.19E+03	GA-67
3	115.21	111 -	119	114.49	9.15E+01	78.57	8.89E+02	.....
4	129.70	125 -	133	128.99	7.17E+01	81.40	9.73E+02	.....
5	185.71	181 -	189	185.02	1.75E+02	69.91	6.47E+02	RA-226
6	209.03	205 -	211	208.35	5.95E+01	54.66	4.99E+02	GA-67 CM-243
7	239.44	233 -	245	238.78	5.58E+02	93.47	7.60E+02	PB-212
8	270.51	266 -	274	269.86	5.90E+01	53.28	4.00E+02	.....
9	295.74	290 -	301	295.10	1.74E+02	66.69	4.72E+02	PB-214
M 10	329.19	325 -	342	328.57	5.23E+01	38.63	1.99E+02	LA-140
m 11	337.79	325 -	342	337.18	1.04E+02	50.00	2.95E+02	AC-228
12	351.95	346 -	355	351.34	2.68E+02	54.76	2.75E+02	PB-214
13	510.46	504 -	515	509.92	8.78E+01	46.13	2.22E+02	.....
14	583.08	578 -	587	582.58	1.29E+02	35.92	1.12E+02	TL-208
M 15	609.59	602 -	618	609.10	1.99E+02	36.51	8.47E+01	BI-214
m 16	615.62	602 -	618	615.13	2.72E+01	21.18	5.73E+01	.....
17	627.25	624 -	630	626.77	2.36E+01	20.10	5.69E+01	.....
18	727.27	724 -	729	726.83	3.37E+01	21.19	6.26E+01	BI-212
19	863.41	858 -	869	863.04	3.09E+01	26.98	6.82E+01	.....
20	911.99	907 -	920	911.65	5.50E+01	38.47	1.40E+02	LU-172

Analysis Report for 1510064-04

CP5005S14-15

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
21	1120.86	1113 -	1127	1120.63	4.73E+01	32.30	8.95E+01	AC-228 SC-46 TA-182 BI-214
22	1271.91	1268 -	1275	1271.77	1.62E+01	13.56	1.96E+01	.....
23	1282.46	1276 -	1292	1282.33	3.33E+01	25.95	5.35E+01	.....
24	1440.00	1436 -	1443	1439.96	1.06E+01	11.49	1.27E+01	.....
25	1461.02	1454 -	1467	1460.99	2.34E+02	33.51	2.09E+01	K-40
26	1561.52	1556 -	1565	1561.56	9.00E+00	6.00	0.00E+00	.....
27	1590.15	1582 -	1597	1590.20	2.45E+01	16.00	1.49E+01	.....
28	1716.05	1712 -	1721	1716.18	1.10E+01	6.63	0.00E+00	.....
29	1729.62	1725 -	1733	1729.76	1.07E+01	8.50	4.62E+00	.....
30	1765.19	1761 -	1769	1765.35	3.10E+01	11.14	0.00E+00	BI-214
31	1847.07	1843 -	1853	1847.28	8.88E+00	8.85	6.25E+00	.....
32	2052.64	2050 -	2055	2053.00	5.00E+00	4.47	0.00E+00	.....
33	2196.76	2192 -	2200	2197.22	9.00E+00	6.00	0.00E+00	.....
34	2204.43	2202 -	2209	2204.89	1.03E+01	9.59	9.47E+00	BI-214
35	2379.57	2377 -	2382	2380.17	6.00E+00	4.90	0.00E+00	.....
36	2614.81	2610 -	2619	2615.58	2.78E+01	12.04	4.37E+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 : 11/3/2015 12:29:10PM

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
1	76.28	6.90E+02	138.30	2.12E-02	1.69E-03
2	93.03	1.33E+02	89.31	1.90E-02	1.62E-03
3	115.21	9.15E+01	78.57	1.66E-02	1.55E-03
4	129.70	7.17E+01	81.40	1.53E-02	1.47E-03
5	185.71	1.75E+02	69.91	1.16E-02	1.15E-03
6	209.03	5.95E+01	54.66	1.06E-02	1.08E-03
7	239.44	5.58E+02	93.47	9.39E-03	9.85E-04
8	270.51	5.90E+01	53.28	8.43E-03	8.88E-04
9	295.74	1.74E+02	66.69	7.77E-03	8.43E-04
M 10	329.19	5.23E+01	38.63	7.04E-03	8.05E-04
m 11	337.79	1.04E+02	50.00	6.87E-03	7.96E-04

: 00362

Analysis Report for 1510064-04

CP5005S14-15

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	12	351.95	2.68E+02	54.76	6.61E-03	7.80E-04
	13	510.46	8.78E+01	46.13	4.61E-03	5.62E-04
	14	583.08	1.29E+02	35.92	4.05E-03	4.55E-04
M	15	609.59	1.99E+02	36.51	3.87E-03	4.17E-04
m	16	615.62	2.72E+01	21.18	3.84E-03	4.08E-04
	17	627.25	2.36E+01	20.10	3.77E-03	3.91E-04
	18	727.27	3.37E+01	21.19	3.25E-03	3.04E-04
	19	863.41	3.09E+01	26.98	2.75E-03	2.27E-04
	20	911.99	5.50E+01	38.47	2.61E-03	2.06E-04
	21	1120.86	4.73E+01	32.30	2.14E-03	1.79E-04
	22	1271.91	1.62E+01	13.56	1.91E-03	1.99E-04
	23	1282.46	3.33E+01	25.95	1.89E-03	2.02E-04
	24	1440.00	1.06E+01	11.49	1.71E-03	1.93E-04
	25	1461.02	2.34E+02	33.51	1.68E-03	1.89E-04
	26	1561.52	9.00E+00	6.00	1.59E-03	1.68E-04
	27	1590.15	2.45E+01	16.00	1.56E-03	1.62E-04
	28	1716.05	1.10E+01	6.63	1.47E-03	1.36E-04
	29	1729.62	1.07E+01	8.50	1.46E-03	1.33E-04
	30	1765.19	3.10E+01	11.14	1.43E-03	1.26E-04
	31	1847.07	8.88E+00	8.85	1.38E-03	1.11E-04
	32	2052.64	5.00E+00	4.47	1.27E-03	1.11E-04
	33	2196.76	9.00E+00	6.00	1.21E-03	1.11E-04
	34	2204.43	1.03E+01	9.59	1.21E-03	1.11E-04
	35	2379.57	6.00E+00	4.90	1.14E-03	1.11E-04
	36	2614.81	2.78E+01	12.04	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 : 11/3/2015 12:29:10PM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000028944.CNF

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
1	76.28	6.90E+02	138.30			6.90E+02	1.38E+02
2	93.03	1.33E+02	89.31	5.44E+01	8.36E+00	7.89E+01	8.97E+01
3	115.21	9.15E+01	78.57			9.15E+01	7.86E+01
4	129.70	7.17E+01	81.40			7.17E+01	8.14E+01
5	185.71	1.75E+02	69.91	1.43E+01	7.33E+00	1.60E+02	7.03E+01

: 00363

Analysis Report for 1510064-04

CP5005S14-15

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
6	209.03	5.95E+01	54.66			5.95E+01	5.47E+01
7	239.44	5.58E+02	93.47	1.09E+01	6.39E+00	5.47E+02	9.37E+01
8	270.51	5.90E+01	53.28			5.90E+01	5.33E+01
9	295.74	1.74E+02	66.69			1.74E+02	6.67E+01
M 10	329.19	5.23E+01	38.63			5.23E+01	3.86E+01
m 11	337.79	1.04E+02	50.00			1.04E+02	5.00E+01
12	351.95	2.68E+02	54.76	8.07E+00	5.01E+00	2.60E+02	5.50E+01
13	510.46	8.78E+01	46.13	4.21E+01	4.92E+00	4.57E+01	4.64E+01
14	583.08	1.29E+02	35.92			1.29E+02	3.59E+01
M 15	609.59	1.99E+02	36.51	5.16E+00	1.63E+00	1.94E+02	3.65E+01
m 16	615.62	2.72E+01	21.18			2.72E+01	2.12E+01
17	627.25	2.36E+01	20.10			2.36E+01	2.01E+01
18	727.27	3.37E+01	21.19			3.37E+01	2.12E+01
19	863.41	3.09E+01	26.98			3.09E+01	2.70E+01
20	911.99	5.50E+01	38.47			5.50E+01	3.85E+01
21	1120.86	4.73E+01	32.30			4.73E+01	3.23E+01
22	1271.91	1.62E+01	13.56			1.62E+01	1.36E+01
23	1282.46	3.33E+01	25.95			3.33E+01	2.60E+01
24	1440.00	1.06E+01	11.49	3.36E-01	1.12E+00	1.03E+01	1.15E+01
25	1461.02	2.34E+02	33.51			2.34E+02	3.35E+01
26	1561.52	9.00E+00	6.00			9.00E+00	6.00E+00
27	1590.15	2.45E+01	16.00			2.45E+01	1.60E+01
28	1716.05	1.10E+01	6.63			1.10E+01	6.63E+00
29	1729.62	1.07E+01	8.50			1.07E+01	8.50E+00
30	1765.19	3.10E+01	11.14	1.11E-01	9.77E-01	3.09E+01	1.12E+01
31	1847.07	8.88E+00	8.85			8.88E+00	8.85E+00
32	2052.64	5.00E+00	4.47			5.00E+00	4.47E+00
33	2196.76	9.00E+00	6.00			9.00E+00	6.00E+00
34	2204.43	1.03E+01	9.59			1.03E+01	9.59E+00
35	2379.57	6.00E+00	4.90			6.00E+00	4.90E+00
36	2614.81	2.78E+01	12.04	1.20E+00	1.02E+00	2.66E+01	1.21E+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 : 11/3/2015 12:29:10PM
Ref. Peak Energy : 0.00 Reference Date :
Peak Ratio : 0.00 Uncertainty : 0.00
Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000028944.CNF

Corrected Area is: Original * Peak Ratio - Background

: 00364

Analysis Report for 1510064-04

CP5005S14-15

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
1	76.28	6.90E+02	138.30			6.90E+02	1.38E+02
2	93.03	1.33E+02	89.31	5.44E+01	8.36E+00	7.89E+01	8.97E+01
3	115.21	9.15E+01	78.57			9.15E+01	7.86E+01
4	129.70	7.17E+01	81.40			7.17E+01	8.14E+01
5	185.71	1.75E+02	69.91	1.43E+01	7.33E+00	1.60E+02	7.03E+01
6	209.03	5.95E+01	54.66			5.95E+01	5.47E+01
7	239.44	5.58E+02	93.47	1.09E+01	6.39E+00	5.47E+02	9.37E+01
8	270.51	5.90E+01	53.28			5.90E+01	5.33E+01
9	295.74	1.74E+02	66.69			1.74E+02	6.67E+01
M	10	329.19	5.23E+01			5.23E+01	3.86E+01
m	11	337.79	1.04E+02			1.04E+02	5.00E+01
	12	351.95	2.68E+02	8.07E+00	5.01E+00	2.60E+02	5.50E+01
	13	510.46	8.78E+01	4.21E+01	4.92E+00	4.57E+01	4.64E+01
	14	583.08	1.29E+02			1.29E+02	3.59E+01
M	15	609.59	1.99E+02	5.16E+00	1.63E+00	1.94E+02	3.65E+01
m	16	615.62	2.72E+01			2.72E+01	2.12E+01
	17	627.25	2.36E+01			2.36E+01	2.01E+01
	18	727.27	3.37E+01			3.37E+01	2.12E+01
	19	863.41	3.09E+01			3.09E+01	2.70E+01
	20	911.99	5.50E+01			5.50E+01	3.85E+01
	21	1120.86	4.73E+01			4.73E+01	3.23E+01
	22	1271.91	1.62E+01			1.62E+01	1.36E+01
	23	1282.46	3.33E+01			3.33E+01	2.60E+01
	24	1440.00	1.06E+01	3.36E-01	1.12E+00	1.03E+01	1.15E+01
	25	1461.02	2.34E+02			2.34E+02	3.35E+01
	26	1561.52	9.00E+00			9.00E+00	6.00E+00
	27	1590.15	2.45E+01			2.45E+01	1.60E+01
	28	1716.05	1.10E+01			1.10E+01	6.63E+00
	29	1729.62	1.07E+01			1.07E+01	8.50E+00
	30	1765.19	3.10E+01	1.11E-01	9.77E-01	3.09E+01	1.12E+01
	31	1847.07	8.88E+00			8.88E+00	8.85E+00
	32	2052.64	5.00E+00			5.00E+00	4.47E+00
	33	2196.76	9.00E+00			9.00E+00	6.00E+00
	34	2204.43	1.03E+01			1.03E+01	9.59E+00
	35	2379.57	6.00E+00			6.00E+00	4.90E+00
	36	2614.81	2.78E+01	1.20E+00	1.02E+00	2.66E+01	1.21E+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 1510064-04
 CP5005S14-15

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.993	1460.81 *	10.67	1.93E+01	3.53E+00
TL-208	0.885	583.14 *	30.22	1.56E+00	4.69E-01
		860.37	4.48		
BI-212	0.778	2614.66 *	35.85	1.03E+00	4.78E-01
		727.17 *	11.80	1.30E+00	8.26E-01
		1620.62	2.75		
PB-212	0.804	238.63 *	44.60	1.93E+00	3.88E-01
		300.09	3.41		
BI-214	0.968	609.31 *	46.30	1.60E+00	3.47E-01
		1120.29 *	15.10	2.16E+00	1.49E+00
		1764.49 *	15.80	2.02E+00	7.52E-01
		2204.22 *	4.98	2.53E+00	2.38E+00
PB-214	0.985	295.21 *	19.19	1.73E+00	6.88E-01
		351.92 *	37.19	1.57E+00	3.80E-01
RA-226	0.960	186.21 *	3.28	6.22E+00	1.17E+01
AC-228	0.512	338.32 *	11.40	1.96E+00	9.72E-01
		911.07 *	27.70	1.13E+00	7.94E-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 2.00sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/3/2015 12:29:10PM
 Peak Locate From Channel : 1
 Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
1	76.28	1.91786E-01	10.02		
2	93.03	2.19265E-02	56.82		
3	115.21	2.54257E-02	42.92		
4	129.70	1.99291E-02	56.73		
6	209.03	1.65332E-02	45.92	Tol.	CM-243
8	270.51	1.63991E-02	45.12		
M 10	329.19	1.45302E-02	36.92	Tol.	LA-140

Analysis Report for 1510064-04
CP5005S14-15

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
m 13	510.46	1.26931E-02	50.76		
16	615.62	7.55654E-03	38.94		
17	627.25	6.54380E-03	42.66		
19	863.41	8.58333E-03	43.66		
22	1271.91	4.49786E-03	41.89		
23	1282.46	9.23611E-03	39.03		
24	1440.00	2.86430E-03	55.98		
26	1561.52	2.50000E-03	33.33		
27	1590.15	6.81424E-03	32.61		
28	1716.05	3.05556E-03	30.15		
29	1729.62	2.97009E-03	39.75	Sum	
31	1847.07	2.46528E-03	49.84		
32	2052.64	1.38889E-03	44.72		
33	2196.76	2.50000E-03	33.33		
35	2379.57	1.66667E-03	40.82		

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

NUCLIDE IDENTIFICATION REPORT

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

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.99	1460.81 *	10.67	1.93E+01	3.53E+00
TL-208	0.88	583.14 *	30.22	1.56E+00	4.69E-01
		860.37	4.48		
		2614.66 *	35.85	1.03E+00	4.78E-01
BI-212	0.77	727.17 *	11.80	1.30E+00	8.26E-01
		1620.62	2.75		
PB-212	0.80	238.63 *	44.60	1.93E+00	3.88E-01
		300.09	3.41		
BI-214	0.96	609.31 *	46.30	1.60E+00	3.47E-01
		1120.29 *	15.10	2.16E+00	1.49E+00
		1764.49 *	15.80	2.02E+00	7.52E-01
		2204.22 *	4.98	2.53E+00	2.38E+00
PB-214	0.98	295.21 *	19.19	1.73E+00	6.88E-01

: 00367

Analysis Report for 1510064-04
CP5005S14-15

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
PB-214	0.98	351.92 *	37.19	1.57E+00	3.80E-01
RA-226	0.96	186.21 *	3.28	6.22E+00	1.17E+01
AC-228	0.51	338.32 *	11.40	1.96E+00	9.72E-01
		911.07 *	27.70	1.13E+00	7.94E-01
		969.11	16.60		

* = 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	0.993	1.93E+01	3.53E+00	
X	GA-67	0.447			
	TL-208	0.885	1.30E+00	3.35E-01	
	BI-212	0.778	1.30E+00	8.26E-01	
	PB-212	0.804	1.93E+00	3.88E-01	
	BI-214	0.968	1.71E+00	3.06E-01	
	PB-214	0.985	1.61E+00	3.32E-01	
	RA-226	0.960	6.22E+00	1.17E+01	
	AC-228	0.512	1.46E+00	6.15E-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 1510064-04
CP5005S14-15

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/3/2015 12:29:10PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
1	76.28	1.91786E-01	10.02		
2	93.03	2.19265E-02	56.82		
3	115.21	2.54257E-02	42.92		
4	129.70	1.99291E-02	56.73		
6	209.03	1.65332E-02	45.92	Tol.	CM-243
8	270.51	1.63991E-02	45.12		
M 10	329.19	1.45302E-02	36.92	Tol.	LA-140
13	510.46	1.26931E-02	50.76		
m 16	615.62	7.55654E-03	38.94		
17	627.25	6.54380E-03	42.66		
19	863.41	8.58333E-03	43.66		
22	1271.91	4.49786E-03	41.89		
23	1282.46	9.23611E-03	39.03		
24	1440.00	2.86430E-03	55.98		
26	1561.52	2.50000E-03	33.33		
27	1590.15	6.81424E-03	32.61		
28	1716.05	3.05556E-03	30.15		
29	1729.62	2.97009E-03	39.75	Sum	
31	1847.07	2.46528E-03	49.84		
32	2052.64	1.38889E-03	44.72		
33	2196.76	2.50000E-03	33.33		
35	2379.57	1.66667E-03	40.82		

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

Analysis Report for 1510064-04
CP5005S14-15

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	7.26E-01	1.99E+00	1.99E+00
+ NA-22	1274.54	99.94	-3.94E-02	2.27E-01	2.27E-01
+ NA-24	1368.53	99.99	3.05E+12	5.78E+12	8.24E+12
	2754.09	99.86	-3.58E+11		5.78E+12
+ AL-26	1808.65	99.76	3.60E-02	2.12E-01	2.12E-01
+ K-40	1460.81	* 10.67	1.93E+01	2.09E+00	2.09E+00
+ @ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26
+ TI-44	67.88	94.40	-6.87E-02	1.04E-01	1.04E-01
	78.34	96.00	3.31E-01		1.33E-01
+ SC-46	889.25	99.98	-1.26E-01	2.09E-01	2.09E-01
	1120.51	99.99	4.32E-01		3.75E-01
+ V-48	983.52	99.98	-6.92E-04	6.55E-01	6.67E-01
	1312.10	97.50	-2.28E-01		6.55E-01
+ CR-51	320.08	9.83	6.93E-01	2.59E+00	2.59E+00
+ MN-54	834.83	99.97	1.84E-01	2.28E-01	2.28E-01
+ CO-56	846.75	99.96	-2.58E-03	2.23E-01	2.23E-01
	1037.75	14.03	-1.04E-01		1.82E+00
	1238.25	67.00	1.45E-01		4.66E-01
	1771.40	15.51	-7.32E-01		1.36E+00
	2598.48	16.90	3.48E-02		7.68E-01
+ CO-57	122.06	85.51	-3.60E-03	1.22E-01	1.22E-01
	136.48	10.60	3.50E-03		1.07E+00
+ CO-58	810.76	99.40	-4.25E-02	2.39E-01	2.39E-01
+ FE-59	1099.22	56.50	-4.56E-01	5.48E-01	5.48E-01
	1291.56	43.20	-7.69E-02		7.07E-01
+ CO-60	1173.22	100.00	-1.66E-01	2.01E-01	2.17E-01
	1332.49	100.00	9.34E-02		2.01E-01
+ ZN-65	1115.52	50.75	9.79E-03	4.93E-01	4.93E-01
+ GA-67	93.31	* 35.70	6.89E+01	1.29E+02	1.29E+02
	208.95	* 2.24	1.49E+03		2.23E+03
	300.22	16.00	-1.32E+01		3.58E+02
+ SE-75	121.11	16.70	-2.01E-02	2.11E-01	6.85E-01
	136.00	59.20	1.85E-02		2.11E-01
	264.65	59.80	-6.11E-02		2.40E-01
	279.53	25.20	8.23E-02		5.96E-01
	400.65	11.40	-3.71E-01		1.47E+00
+ RB-82	776.52	13.00	-2.77E-01	3.13E+00	3.13E+00
+ RB-83	520.41	46.00	2.46E-02	4.31E-01	4.31E-01
	529.64	30.30	2.80E-01		6.65E-01
	552.65	16.40	-6.77E-01		1.00E+00
+ KR-85	513.99	0.43	-3.03E+00	4.61E+01	4.61E+01
+ SR-85	513.99	99.27	-1.78E-02	2.71E-01	2.71E-01

Analysis Report for 1510064-04
CP5005S14-15

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	Y-88	898.02	93.40	9.97E-02	1.82E-01	2.41E-01
		1836.01	99.38	3.01E-02		1.82E-01
+	NB-93M	16.57	9.43	1.06E+00	4.91E-01	4.91E-01
+	NB-94	702.63	100.00	5.72E-02	1.53E-01	1.83E-01
		871.10	100.00	-1.14E-01		1.53E-01
+	NB-95	765.79	99.81	1.32E-01	3.42E-01	3.42E-01
+	NB-95M	235.69	25.00	2.25E+01	1.76E+02	1.76E+02
+	ZR-95	724.18	43.70	-4.39E-03	4.53E-01	6.63E-01
		756.72	55.30	2.56E-02		4.53E-01
+	MO-99	181.06	6.20	-2.77E+02	1.76E+03	2.38E+03
		739.58	12.80	4.93E+01		1.76E+03
		778.00	4.50	-1.18E+03		4.92E+03
+	RU-103	497.08	89.00	2.55E-02	2.65E-01	2.65E-01
+	RU-106	621.84	9.80	-1.29E-01	1.41E+00	1.41E+00
+	AG-108M	433.93	89.90	-4.94E-02	1.44E-01	1.44E-01
		614.37	90.40	6.64E-02		2.36E-01
		722.95	90.50	-9.60E-03		2.23E-01
+	CD-109	88.03	3.72	1.18E+00	3.14E+00	3.14E+00
+	AG-110M	657.75	93.14	5.59E-03	1.95E-01	1.95E-01
		677.61	10.53	-3.07E-01		1.75E+00
		706.67	16.46	4.85E-01		1.23E+00
		763.93	21.98	-1.14E-02		9.17E-01
		884.67	71.63	7.61E-03		2.88E-01
		1384.27	23.94	-2.90E-01		9.48E-01
+	CD-113M	263.70	0.02	-2.70E+02	5.25E+02	5.25E+02
+	SN-113	255.12	1.93	2.22E+00	2.53E-01	7.64E+00
		391.69	64.90	4.04E-02		2.53E-01
+	TE123M	159.00	84.10	5.95E-02	1.62E-01	1.62E-01
+	SB-124	602.71	97.87	8.91E-03	2.52E-01	2.52E-01
		645.85	7.26	7.42E-01		3.30E+00
		722.78	11.10	-2.68E-01		2.35E+00
		1691.02	49.00	-1.50E-01		4.46E-01
+	I-125	35.49	6.49	4.80E-02	1.25E+00	1.25E+00
+	SB-125	176.33	6.89	-7.48E-01	4.67E-01	1.66E+00
		427.89	29.33	3.89E-02		4.67E-01
		463.38	10.35	5.94E-01		1.51E+00
		600.56	17.80	5.14E-02		9.67E-01
		635.90	11.32	-3.63E-01		1.38E+00
+	SB-126	414.70	83.30	-2.01E-01	7.66E-01	8.13E-01
		666.33	99.60	-2.77E-01		7.66E-01
		695.00	99.60	-7.99E-03		8.12E-01
		720.50	53.80	-4.92E-01		1.61E+00
+	SN-126	87.57	37.00	1.14E-01	3.02E-01	3.02E-01
+	SB-127	473.00	25.00	-1.57E+01	7.89E+01	8.59E+01
		685.20	35.70	1.49E+01		7.89E+01
		783.80	14.70	6.15E+01		2.08E+02
+	I-129	29.78	57.00	-7.11E-02	9.42E-02	9.42E-02
		33.60	13.20	4.15E-03		4.31E-01

Analysis Report for 1510064-04
CP5005S14-15

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	I-129	39.58	7.52	-2.23E-01	9.42E-02	8.27E-01
+	I-131	284.30	6.05	-2.05E+00	1.87E+00	2.34E+01
		364.48	81.20	-5.89E-02		1.87E+00
		636.97	7.26	-8.44E+00		2.44E+01
		722.89	1.80	-1.36E+01		1.19E+02
+	TE-132	49.72	13.10	1.62E+02	5.78E+01	2.24E+02
		228.16	88.00	6.77E+00		5.78E+01
+	BA-133	81.00	33.00	-6.24E-02	3.46E-01	3.57E-01
		302.84	17.80	-9.65E-02		7.77E-01
		356.01	60.00	-2.97E-02		3.46E-01
+	I-133	529.87	86.30	4.82E+08	1.15E+09	1.15E+09
+	XE-133	81.00	38.00	-2.24E+00	1.28E+01	1.28E+01
+	CS-134	563.23	8.38	6.83E-01	2.21E-01	2.01E+00
		569.32	15.43	4.22E-01		1.13E+00
		604.70	97.60	-2.66E-03		2.21E-01
		795.84	85.40	8.74E-02		2.22E-01
		801.93	8.73	-9.83E-01		2.06E+00
+	CS-135	268.24	16.00	-4.17E-02	8.52E-01	8.52E-01
+	@ 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	4.29E+00	7.51E-01	6.93E+00
		163.89	4.61	8.19E-01		1.08E+01
		176.55	13.56	-1.65E+00		3.66E+00
		273.65	12.66	3.55E-01		4.81E+00
		340.57	48.50	-3.49E-02		1.51E+00
		818.50	99.70	-3.27E-01		7.51E-01
		1048.07	79.60	2.99E-01		1.06E+00
		1235.34	19.70	-2.07E-01		5.38E+00
+	CS-137	661.65	85.12	1.07E-01	2.03E-01	2.03E-01
+	LA-138	788.74	34.00	-4.56E-01	3.15E-01	5.11E-01
		1435.80	66.00	2.92E-02		3.15E-01
+	CE-139	165.85	80.35	6.28E-03	1.61E-01	1.61E-01
+	BA-140	162.64	6.70	-6.28E+00	2.80E+00	7.57E+00
		304.84	4.50	-2.28E+00		1.41E+01
		423.70	3.20	1.29E+00		1.99E+01
		437.55	2.00	1.97E+01		3.36E+01
		537.32	25.00	-4.12E-01		2.80E+00
+	LA-140	328.77	20.50	4.55E-01	9.49E-01	2.92E+00
		487.03	45.50	3.10E-02		1.46E+00
		815.85	23.50	1.27E+00		3.52E+00
		1596.49	95.49	1.98E-01		9.49E-01
+	CE-141	145.44	48.40	-1.57E-01	4.01E-01	4.01E-01
+	CE-143	57.36	11.80	-9.41E+05	5.75E+05	1.02E+06
		293.26	42.00	6.20E+05		5.75E+05
		664.55	5.20	5.27E+05		4.83E+06
+	CE-144	133.54	10.80	-8.34E-02	1.08E+00	1.08E+00
+	PM-144	476.78	42.00	-6.01E-02	1.63E-01	3.51E-01
		618.01	98.60	1.74E-02		1.63E-01

Analysis Report for 1510064-04
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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	PM-144	696.49	99.49	-2.75E-02	1.63E-01	1.86E-01
+	PM-145	36.85	21.70	4.33E-02	1.53E-01	2.75E-01
		37.36	39.70	4.50E-02		1.53E-01
		42.30	15.10	-8.63E-02		4.33E-01
		72.40	2.31	-5.81E-01		5.37E+00
+	PM-146	453.90	39.94	-7.05E-03	3.63E-01	3.63E-01
		735.90	14.01	-6.45E-01		1.32E+00
		747.13	13.10	-7.32E-01		1.36E+00
+	ND-147	91.11	28.90	3.07E-01	2.38E+00	2.38E+00
		531.02	13.10	7.04E-01		7.11E+00
+	PM-149	285.90	3.10	7.25E+02	2.77E+04	2.77E+04
+	EU-152	121.78	20.50	-1.40E-02	4.75E-01	4.75E-01
		244.69	5.40	1.20E-01		2.86E+00
		344.27	19.13	-4.38E-03		6.94E-01
		778.89	9.20	-4.77E-01		1.99E+00
		964.01	10.40	-8.28E-02		2.52E+00
		1085.78	7.22	-5.10E-01		3.03E+00
		1112.02	9.60	2.46E-01		2.14E+00
		1407.95	14.94	8.82E-01		1.46E+00
+	GD-153	97.43	31.30	3.01E-02	3.31E-01	3.31E-01
		103.18	22.20	6.96E-02		4.61E-01
+	EU-154	123.07	40.50	-7.16E-03	2.43E-01	2.43E-01
		723.30	19.70	-4.44E-02		1.03E+00
		873.19	11.50	-7.58E-01		1.30E+00
		996.32	10.30	6.31E-01		2.23E+00
		1004.76	17.90	2.74E-01		1.21E+00
		1274.45	35.50	-1.09E-01		6.31E-01
+	EU-155	86.50	30.90	1.36E-01	3.62E-01	3.62E-01
		105.30	20.70	1.93E-02		4.65E-01
+	EU-156	811.77	10.40	-1.08E+00	6.51E+00	6.51E+00
		1153.47	7.20	-2.24E+00		1.04E+01
		1230.71	8.90	1.84E+00		1.04E+01
+	HO-166M	184.41	72.60	2.10E-01	1.86E-01	1.86E-01
		280.45	29.60	2.73E-02		4.28E-01
		410.94	11.10	-1.96E-01		1.32E+00
		711.69	54.10	6.71E-02		3.38E-01
+	TM-171	66.72	0.14	-1.58E+01	7.22E+01	7.22E+01
+	HF-172	81.75	4.52	-5.23E-01	9.55E-01	2.48E+00
		125.81	11.30	-5.77E-02		9.55E-01
+	LU-172	181.53	20.60	-1.41E+00	6.56E+00	1.13E+01
		810.06	16.63	-3.56E+00		2.00E+01
		912.12	15.25	4.85E+01		3.45E+01
		1093.66	62.50	3.39E+00		6.56E+00
+	LU-173	100.72	5.24	-6.14E-02	6.82E-01	1.83E+00
		272.11	21.20	4.56E-01		6.82E-01
+	HF-175	343.40	84.00	-1.31E-03	2.18E-01	2.18E-01
+	LU-176	88.34	13.30	1.67E-01	1.42E-01	8.60E-01
		201.83	86.00	1.29E-02		1.48E-01
		306.78	94.00	9.45E-03		1.42E-01

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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	-1.87E-01	2.82E-01	2.82E-01
		1121.30	34.90	1.17E+00		1.01E+00
		1189.05	16.23	4.45E-01		1.75E+00
		1221.41	26.98	-1.25E-01		1.08E+00
		1231.02	11.44	4.69E-01		2.65E+00
+	IR-192	308.46	29.68	6.37E-02	3.84E-01	5.79E-01
		468.07	48.10	-6.45E-02		3.84E-01
+	HG-203	279.19	77.30	3.46E-02	2.51E-01	2.51E-01
+	BI-207	569.67	97.72	6.50E-02	1.74E-01	1.74E-01
		1063.62	74.90	-4.83E-03		2.73E-01
+	TL-208	583.14	* 30.22	1.56E+00	5.03E-01	5.87E-01
		860.37	4.48	3.79E-01		4.71E+00
		2614.66	* 35.85	1.03E+00		5.03E-01
+	BI-210M	262.00	45.00	-1.08E-01	2.68E-01	2.68E-01
		300.00	23.00	-3.78E-02		6.91E-01
+	PB-210	46.50	4.25	-1.34E-01	1.63E+00	1.63E+00
+	PB-211	404.84	2.90	1.86E+00	5.30E+00	5.30E+00
		831.96	2.90	1.25E+00		6.94E+00
+	BI-212	727.17	* 11.80	1.30E+00	1.23E+00	1.23E+00
		1620.62	2.75	2.10E+00		5.55E+00
+	PB-212	238.63	* 44.60	1.93E+00	4.82E-01	4.82E-01
		300.09	3.41	-2.55E-01		4.66E+00
+	BI-214	609.31	* 46.30	1.60E+00	3.04E-01	5.60E-01
		1120.29	* 15.10	2.16E+00		2.32E+00
		1764.49	* 15.80	2.02E+00		3.04E-01
		2204.22	* 4.98	2.53E+00		3.56E+00
+	PB-214	295.21	* 19.19	1.73E+00	4.58E-01	1.03E+00
		351.92	* 37.19	1.57E+00		4.58E-01
+	RN-219	401.80	6.50	1.20E-01	2.27E+00	2.27E+00
+	RA-223	323.87	3.88	8.64E-02	3.04E+00	3.04E+00
+	RA-224	240.98	3.95	2.14E+01	5.43E+00	5.43E+00
+	RA-225	40.00	31.00	-2.03E-01	7.53E-01	7.53E-01
+	RA-226	186.21	* 3.28	6.22E+00	4.29E+00	4.29E+00
+	TH-227	50.10	8.40	6.31E-01	8.71E-01	8.71E-01
		236.00	11.50	2.19E-01		1.71E+00
		256.20	6.30	7.44E-01		1.97E+00
+	AC-228	338.32	* 11.40	1.96E+00	1.25E+00	2.28E+00
		911.07	* 27.70	1.13E+00		1.25E+00
		969.11	16.60	1.53E+00		1.68E+00
+	TH-230	48.44	16.90	2.09E-01	4.23E-01	4.23E-01
		62.85	4.60	1.77E+00		2.03E+00
		67.67	0.37	-1.75E+01		2.65E+01
+	PA-231	283.67	1.60	-9.93E-02	5.98E+00	7.84E+00
		302.67	2.30	-7.43E-01		5.98E+00
+	TH-231	25.64	14.70	-1.58E-01	3.66E-01	3.66E-01
		84.21	6.40	9.66E-01		1.65E+00
+	PA-233	311.98	38.60	-5.44E-02	6.98E-01	6.98E-01
+	PA-234	131.20	20.40	3.19E-01	5.38E-01	5.38E-01

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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	-1.30E+00	5.38E-01	2.10E+00
	946.00	12.00	2.19E-01		1.50E+00
+ PA-234M	1001.03	0.92	1.77E+01	2.55E+01	2.55E+01
+ TH-234	63.29	3.80	7.70E-01	2.47E+00	2.47E+00
+ U-235	143.76	10.50	-3.52E-01	1.01E+00	1.01E+00
	163.35	4.70	1.82E-01		2.39E+00
	205.31	4.70	-1.37E-01		2.80E+00
+ NP-237	86.50	12.60	3.31E-01	8.78E-01	8.78E-01
+ NP-239	106.10	22.70	7.02E+01	1.69E+03	1.69E+03
	228.18	10.70	-8.98E+02		4.72E+03
	277.60	14.10	3.39E+02		3.59E+03
+ AM-241	59.54	35.90	1.80E-01	2.46E-01	2.46E-01
+ AM-243	74.67	66.00	8.29E-01	1.99E-01	1.99E-01
+ CM-243	209.75	3.29	-3.14E-01	9.05E-01	4.04E+00
	228.14	10.60	1.40E-01		1.20E+00
	277.60	14.00	8.55E-02		9.05E-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	1.99E+00	1.99E+00	7.26E-01	9.38E-01
NA-22	1274.54	99.94	2.27E-01	2.27E-01	-3.94E-02	1.03E-01
NA-24	1368.53	99.99	8.24E+12	5.78E+12	3.05E+12	3.70E+12
	2754.09	99.86	5.78E+12		-3.58E+11	2.16E+12
AL-26	1808.65	99.76	2.12E-01	2.12E-01	3.60E-02	9.19E-02
+ K-40	1460.81	* 10.67	2.09E+00	2.09E+00	1.93E+01	9.32E-01

Analysis Report for 1510064-04

CP5005S14-15

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	1.04E-01	1.04E-01	-6.87E-02	5.11E-02
	78.34	96.00	1.33E-01		3.31E-01	6.56E-02
SC-46	889.25	99.98	2.09E-01	2.09E-01	-1.26E-01	9.49E-02
	1120.51	99.99	3.75E-01		4.32E-01	1.76E-01
V-48	983.52	99.98	6.67E-01	6.55E-01	-6.92E-04	3.05E-01
	1312.10	97.50	6.55E-01		-2.28E-01	2.90E-01
CR-51	320.08	9.83	2.59E+00	2.59E+00	6.93E-01	1.24E+00
MN-54	834.83	99.97	2.28E-01	2.28E-01	1.84E-01	1.06E-01
CO-56	846.75	99.96	2.23E-01	2.23E-01	-2.58E-03	1.02E-01
	1037.75	14.03	1.82E+00		-1.04E-01	8.31E-01
	1238.25	67.00	4.66E-01		1.45E-01	2.13E-01
	1771.40	15.51	1.36E+00		-7.32E-01	5.63E-01
	2598.48	16.90	7.68E-01		3.48E-02	2.43E-01
CO-57	122.06	85.51	1.22E-01	1.22E-01	-3.60E-03	5.94E-02
	136.48	10.60	1.07E+00		3.50E-03	5.20E-01
CO-58	810.76	99.40	2.39E-01	2.39E-01	-4.25E-02	1.10E-01
FE-59	1099.22	56.50	5.48E-01	5.48E-01	-4.56E-01	2.49E-01
	1291.56	43.20	7.07E-01		-7.69E-02	3.15E-01
CO-60	1173.22	100.00	2.17E-01	2.01E-01	-1.66E-01	9.88E-02
	1332.49	100.00	2.01E-01		9.34E-02	8.93E-02
ZN-65	1115.52	50.75	4.93E-01	4.93E-01	9.79E-03	2.27E-01
GA-67	93.31	* 35.70	1.29E+02	1.29E+02	6.89E+01	6.31E+01
	208.95	* 2.24	2.23E+03		1.49E+03	1.08E+03
	300.22	16.00	3.58E+02		-1.32E+01	1.72E+02
SE-75	121.11	16.70	6.85E-01	2.11E-01	-2.01E-02	3.34E-01
	136.00	59.20	2.11E-01		1.85E-02	1.03E-01
	264.65	59.80	2.40E-01		-6.11E-02	1.15E-01
	279.53	25.20	5.96E-01		8.23E-02	2.86E-01
	400.65	11.40	1.47E+00		-3.71E-01	7.00E-01
RB-82	776.52	13.00	3.13E+00	3.13E+00	-2.77E-01	1.46E+00
RB-83	520.41	46.00	4.31E-01	4.31E-01	2.46E-02	2.03E-01
	529.64	30.30	6.65E-01		2.80E-01	3.14E-01
	552.65	16.40	1.00E+00		-6.77E-01	4.66E-01
KR-85	513.99	0.43	4.61E+01	4.61E+01	-3.03E+00	2.20E+01
SR-85	513.99	99.27	2.71E-01	2.71E-01	-1.78E-02	1.29E-01
Y-88	898.02	93.40	2.41E-01	1.82E-01	9.97E-02	1.11E-01
	1836.01	99.38	1.82E-01		3.01E-02	7.34E-02
NB-93M	16.57	9.43	4.91E-01	4.91E-01	1.06E+00	2.39E-01
NB-94	702.63	100.00	1.83E-01	1.53E-01	5.72E-02	8.56E-02
	871.10	100.00	1.53E-01		-1.14E-01	6.92E-02
NB-95	765.79	99.81	3.42E-01	3.42E-01	1.32E-01	1.59E-01
NB-95M	235.69	25.00	1.76E+02	1.76E+02	2.25E+01	8.60E+01
ZR-95	724.18	43.70	6.63E-01	4.53E-01	-4.39E-03	3.12E-01
	756.72	55.30	4.53E-01		2.56E-02	2.11E-01
MO-99	181.06	6.20	2.38E+03	1.76E+03	-2.77E+02	1.16E+03
	739.58	12.80	1.76E+03		4.93E+01	8.23E+02
	778.00	4.50	4.92E+03		-1.18E+03	2.28E+03
RU-103	497.08	89.00	2.65E-01	2.65E-01	2.55E-02	1.25E-01
RU-106	621.84	9.80	1.41E+00	1.41E+00	-1.29E-01	6.47E-01
AG-108M	433.93	89.90	1.44E-01	1.44E-01	-4.94E-02	6.80E-02
	614.37	90.40	2.36E-01		6.64E-02	1.12E-01
	722.95	90.50	2.23E-01		-9.60E-03	1.05E-01

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
CD-109	88.03	3.72	3.14E+00	3.14E+00	1.18E+00	1.54E+00
AG-110M	657.75	93.14	1.95E-01	1.95E-01	5.59E-03	9.11E-02
	677.61	10.53	1.75E+00		-3.07E-01	8.17E-01
	706.67	16.46	1.23E+00		4.85E-01	5.74E-01
	763.93	21.98	9.17E-01		-1.14E-02	4.27E-01
	884.67	71.63	2.88E-01		7.61E-03	1.33E-01
	1384.27	23.94	9.48E-01		-2.90E-01	4.23E-01
CD-113M	263.70	0.02	5.25E+02	5.25E+02	-2.70E+02	2.52E+02
SN-113	255.12	1.93	7.64E+00	2.53E-01	2.22E+00	3.68E+00
	391.69	64.90	2.53E-01		4.04E-02	1.21E-01
TE123M	159.00	84.10	1.62E-01	1.62E-01	5.95E-02	7.91E-02
SB-124	602.71	97.87	2.52E-01	2.52E-01	8.91E-03	1.19E-01
	645.85	7.26	3.30E+00		7.42E-01	1.54E+00
	722.78	11.10	2.35E+00		-2.68E-01	1.10E+00
	1691.02	49.00	4.46E-01		-1.50E-01	1.85E-01
I-125	35.49	6.49	1.25E+00	1.25E+00	4.80E-02	6.09E-01
SB-125	176.33	6.89	1.66E+00	4.67E-01	-7.48E-01	8.07E-01
	427.89	29.33	4.67E-01		3.89E-02	2.21E-01
	463.38	10.35	1.51E+00		5.94E-01	7.14E-01
	600.56	17.80	9.67E-01		5.14E-02	4.55E-01
	635.90	11.32	1.38E+00		-3.63E-01	6.41E-01
SB-126	414.70	83.30	8.13E-01	7.66E-01	-2.01E-01	3.86E-01
	666.33	99.60	7.66E-01		-2.77E-01	3.56E-01
	695.00	99.60	8.12E-01		-7.99E-03	3.77E-01
	720.50	53.80	1.61E+00		-4.92E-01	7.48E-01
SN-126	87.57	37.00	3.02E-01	3.02E-01	1.14E-01	1.48E-01
SB-127	473.00	25.00	8.59E+01	7.89E+01	-1.57E+01	4.04E+01
	685.20	35.70	7.89E+01		1.49E+01	3.69E+01
	783.80	14.70	2.08E+02		6.15E+01	9.68E+01
I-129	29.78	57.00	9.42E-02	9.42E-02	-7.11E-02	4.59E-02
	33.60	13.20	4.31E-01		4.15E-03	2.10E-01
	39.58	7.52	8.27E-01		-2.23E-01	4.04E-01
I-131	284.30	6.05	2.34E+01	1.87E+00	-2.05E+00	1.12E+01
	364.48	81.20	1.87E+00		-5.89E-02	8.92E-01
	636.97	7.26	2.44E+01		-8.44E+00	1.13E+01
	722.89	1.80	1.19E+02		-1.36E+01	5.56E+01
TE-132	49.72	13.10	2.24E+02	5.78E+01	1.62E+02	1.09E+02
	228.16	88.00	5.78E+01		6.77E+00	2.80E+01
BA-133	81.00	33.00	3.57E-01	3.46E-01	-6.24E-02	1.75E-01
	302.84	17.80	7.77E-01		-9.65E-02	3.73E-01
	356.01	60.00	3.46E-01		-2.97E-02	1.68E-01
I-133	529.87	86.30	1.15E+09	1.15E+09	4.82E+08	5.41E+08
XE-133	81.00	38.00	1.28E+01	1.28E+01	-2.24E+00	6.29E+00
CS-134	563.23	8.38	2.01E+00	2.21E-01	6.83E-01	9.45E-01
	569.32	15.43	1.13E+00		4.22E-01	5.33E-01
	604.70	97.60	2.21E-01		-2.66E-03	1.05E-01
	795.84	85.40	2.22E-01		8.74E-02	1.03E-01
	801.93	8.73	2.06E+00		-9.83E-01	9.49E-01
CS-135	268.24	16.00	8.52E-01	8.52E-01	-4.17E-02	4.11E-01
@ I-135	1131.51	22.50	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	1260.41	28.60	1.00E+26		1.00E+26	1.00E+20
@	1678.03	9.54	1.00E+26		1.00E+26	1.00E+20
CS-136	153.22	7.46	6.93E+00	7.51E-01	4.29E+00	3.38E+00

Analysis Report for 1510064-04

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
CS-136	163.89	4.61	1.08E+01	7.51E-01	8.19E-01	5.24E+00
	176.55	13.56	3.66E+00		-1.65E+00	1.78E+00
	273.65	12.66	4.81E+00		3.55E-01	2.32E+00
	340.57	48.50	1.51E+00		-3.49E-02	7.28E-01
	818.50	99.70	7.51E-01		-3.27E-01	3.45E-01
	1048.07	79.60	1.06E+00		2.99E-01	4.81E-01
	1235.34	19.70	5.38E+00		-2.07E-01	2.46E+00
	CS-137	661.65	85.12		2.03E-01	2.03E-01	1.07E-01	9.50E-02
LA-138	788.74	34.00	5.11E-01	3.15E-01	-4.56E-01	2.36E-01
	1435.80	66.00	3.15E-01		2.92E-02	1.40E-01
CE-139	165.85	80.35	1.61E-01	1.61E-01	6.28E-03	7.81E-02
BA-140	162.64	6.70	7.57E+00	2.80E+00	-6.28E+00	3.68E+00
	304.84	4.50	1.41E+01		-2.28E+00	6.76E+00
	423.70	3.20	1.99E+01		1.29E+00	9.44E+00
	437.55	2.00	3.36E+01		1.97E+01	1.59E+01
	537.32	25.00	2.80E+00		-4.12E-01	1.32E+00
LA-140	328.77	20.50	2.92E+00	9.49E-01	4.55E-01	1.40E+00
	487.03	45.50	1.46E+00		3.10E-02	6.89E-01
	815.85	23.50	3.52E+00		1.27E+00	1.63E+00
	1596.49	95.49	9.49E-01		1.98E-01	4.13E-01
CE-141	145.44	48.40	4.01E-01	4.01E-01	-1.57E-01	1.95E-01
CE-143	57.36	11.80	1.02E+06	5.75E+05	-9.41E+05	4.97E+05
	293.26	42.00	5.75E+05		6.20E+05	2.79E+05
	664.55	5.20	4.83E+06		5.27E+05	2.26E+06
CE-144	133.54	10.80	1.08E+00	1.08E+00	-8.34E-02	5.25E-01
PM-144	476.78	42.00	3.51E-01	1.63E-01	-6.01E-02	1.66E-01
	618.01	98.60	1.63E-01		1.74E-02	7.60E-02
	696.49	99.49	1.86E-01		-2.75E-02	8.68E-02
PM-145	36.85	21.70	2.75E-01	1.53E-01	4.33E-02	1.34E-01
	37.36	39.70	1.53E-01		4.50E-02	7.45E-02
	42.30	15.10	4.33E-01		-8.63E-02	2.12E-01
	72.40	2.31	5.37E+00		-5.81E-01	2.65E+00
PM-146	453.90	39.94	3.63E-01	3.63E-01	-7.05E-03	1.72E-01
	735.90	14.01	1.32E+00		-6.45E-01	6.18E-01
	747.13	13.10	1.36E+00		-7.32E-01	6.33E-01
ND-147	91.11	28.90	2.38E+00	2.38E+00	3.07E-01	1.17E+00
	531.02	13.10	7.11E+00		7.04E-01	3.35E+00
PM-149	285.90	3.10	2.77E+04	2.77E+04	7.25E+02	1.33E+04
EU-152	121.78	20.50	4.75E-01	4.75E-01	-1.40E-02	2.31E-01
	244.69	5.40	2.86E+00		1.20E-01	1.39E+00
	344.27	19.13	6.94E-01		-4.38E-03	3.31E-01
	778.89	9.20	1.99E+00		-4.77E-01	9.25E-01
	964.01	10.40	2.52E+00		-8.28E-02	1.18E+00
	1085.78	7.22	3.03E+00		-5.10E-01	1.39E+00
	1112.02	9.60	2.14E+00		2.46E-01	9.73E-01
	1407.95	14.94	1.46E+00		8.82E-01	6.52E-01
GD-153	97.43	31.30	3.31E-01	3.31E-01	3.01E-02	1.62E-01
	103.18	22.20	4.61E-01		6.96E-02	2.25E-01
EU-154	123.07	40.50	2.43E-01	2.43E-01	-7.16E-03	1.18E-01
	723.30	19.70	1.03E+00		-4.44E-02	4.84E-01
	873.19	11.50	1.30E+00		-7.58E-01	5.86E-01
	996.32	10.30	2.23E+00		6.31E-01	1.03E+00
	1004.76	17.90	1.21E+00		2.74E-01	5.59E-01

: 00378

Analysis Report for 1510064-04

CP5005S14-15

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
EU-154	1274.45	35.50	6.31E-01	2.43E-01	-1.09E-01	2.86E-01
EU-155	86.50	30.90	3.62E-01	3.62E-01	1.36E-01	1.78E-01
	105.30	20.70	4.65E-01		1.93E-02	2.27E-01
EU-156	811.77	10.40	6.51E+00	6.51E+00	-1.08E+00	3.02E+00
	1153.47	7.20	1.04E+01		-2.24E+00	4.70E+00
	1230.71	8.90	1.04E+01		1.84E+00	4.78E+00
HO-166M	184.41	72.60	1.86E-01	1.86E-01	2.10E-01	9.08E-02
	280.45	29.60	4.28E-01		2.73E-02	2.06E-01
	410.94	11.10	1.32E+00		-1.96E-01	6.30E-01
	711.69	54.10	3.38E-01		6.71E-02	1.58E-01
TM-171	66.72	0.14	7.22E+01	7.22E+01	-1.58E+01	3.55E+01
HF-172	81.75	4.52	2.48E+00	9.55E-01	-5.23E-01	1.22E+00
	125.81	11.30	9.55E-01		-5.77E-02	4.66E-01
LU-172	181.53	20.60	1.13E+01	6.56E+00	-1.41E+00	5.48E+00
	810.06	16.63	2.00E+01		-3.56E+00	9.24E+00
	912.12	15.25	3.45E+01		4.85E+01	1.63E+01
	1093.66	62.50	6.56E+00		3.39E+00	3.01E+00
LU-173	100.72	5.24	1.83E+00	6.82E-01	-6.14E-02	8.93E-01
	272.11	21.20	6.82E-01		4.56E-01	3.29E-01
HF-175	343.40	84.00	2.18E-01	2.18E-01	-1.31E-03	1.05E-01
LU-176	88.34	13.30	8.60E-01	1.42E-01	1.67E-01	4.22E-01
	201.83	86.00	1.48E-01		1.29E-02	7.18E-02
	306.78	94.00	1.42E-01		9.45E-03	6.83E-02
TA-182	67.75	41.20	2.82E-01	2.82E-01	-1.87E-01	1.39E-01
	1121.30	34.90	1.01E+00		1.17E+00	4.73E-01
	1189.05	16.23	1.75E+00		4.45E-01	8.05E-01
	1221.41	26.98	1.08E+00		-1.25E-01	4.96E-01
	1231.02	11.44	2.65E+00		4.69E-01	1.22E+00
IR-192	308.46	29.68	5.79E-01	3.84E-01	6.37E-02	2.78E-01
	468.07	48.10	3.84E-01		-6.45E-02	1.81E-01
HG-203	279.19	77.30	2.51E-01	2.51E-01	3.46E-02	1.20E-01
BI-207	569.67	97.72	1.74E-01	1.74E-01	6.50E-02	8.22E-02
	1063.62	74.90	2.73E-01		-4.83E-03	1.24E-01
+ TL-208	583.14	* 30.22	5.87E-01	5.03E-01	1.56E+00	2.77E-01
	860.37	4.48	4.71E+00		3.79E-01	2.19E+00
	2614.66	* 35.85	5.03E-01		1.03E+00	1.99E-01
BI-210M	262.00	45.00	2.68E-01	2.68E-01	-1.08E-01	1.29E-01
	300.00	23.00	6.91E-01		-3.78E-02	3.34E-01
PB-210	46.50	4.25	1.63E+00	1.63E+00	-1.34E-01	7.96E-01
PB-211	404.84	2.90	5.30E+00	5.30E+00	1.86E+00	2.53E+00
	831.96	2.90	6.94E+00		1.25E+00	3.23E+00
+ BI-212	727.17	* 11.80	1.23E+00	1.23E+00	1.30E+00	5.62E-01
	1620.62	2.75	5.55E+00		2.10E+00	2.30E+00
+ PB-212	238.63	* 44.60	4.82E-01	4.82E-01	1.93E+00	2.36E-01
	300.09	3.41	4.66E+00		-2.55E-01	2.26E+00
+ BI-214	609.31	* 46.30	5.60E-01	3.04E-01	1.60E+00	2.69E-01
	1120.29	* 15.10	2.32E+00		2.16E+00	1.10E+00
	1764.49	* 15.80	3.04E-01		2.02E+00	6.36E-02
	2204.22	* 4.98	3.56E+00		2.53E+00	1.45E+00
+ PB-214	295.21	* 19.19	1.03E+00	4.58E-01	1.73E+00	5.00E-01
	351.92	* 37.19	4.58E-01		1.57E+00	2.21E-01
RN-219	401.80	6.50	2.27E+00	2.27E+00	1.20E-01	1.08E+00
RA-223	323.87	3.88	3.04E+00	3.04E+00	8.64E-02	1.45E+00

Analysis Report for 1510064-04
CP5005S14-15

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
RA-224	240.98	3.95	5.43E+00	5.43E+00	2.14E+01	2.66E+00
RA-225	40.00	31.00	7.53E-01	7.53E-01	-2.03E-01	3.68E-01
+ RA-226	186.21 *	3.28	4.29E+00	4.29E+00	6.22E+00	2.09E+00
TH-227	50.10	8.40	8.71E-01	8.71E-01	6.31E-01	4.26E-01
	236.00	11.50	1.71E+00		2.19E-01	8.35E-01
	256.20	6.30	1.97E+00		7.44E-01	9.48E-01
+ AC-228	338.32 *	11.40	2.28E+00	1.25E+00	1.96E+00	1.11E+00
	911.07 *	27.70	1.25E+00		1.13E+00	5.98E-01
	969.11	16.60	1.68E+00		1.53E+00	7.91E-01
TH-230	48.44	16.90	4.23E-01	4.23E-01	2.09E-01	2.07E-01
	62.85	4.60	2.03E+00		1.77E+00	9.95E-01
	67.67	0.37	2.65E+01		-1.75E+01	1.30E+01
PA-231	283.67	1.60	7.84E+00	5.98E+00	-9.93E-02	3.76E+00
	302.67	2.30	5.98E+00		-7.43E-01	2.87E+00
TH-231	25.64	14.70	3.66E-01	3.66E-01	-1.58E-01	1.78E-01
	84.21	6.40	1.65E+00		9.66E-01	8.08E-01
PA-233	311.98	38.60	6.98E-01	6.98E-01	-5.44E-02	3.35E-01
PA-234	131.20	20.40	5.38E-01	5.38E-01	3.19E-01	2.62E-01
	733.99	8.80	2.10E+00		-1.30E+00	9.79E-01
	946.00	12.00	1.50E+00		2.19E-01	6.84E-01
PA-234M	1001.03	0.92	2.55E+01	2.55E+01	1.77E+01	1.19E+01
TH-234	63.29	3.80	2.47E+00	2.47E+00	7.70E-01	1.21E+00
U-235	143.76	10.50	1.01E+00	1.01E+00	-3.52E-01	4.89E-01
	163.35	4.70	2.39E+00		1.82E-01	1.16E+00
	205.31	4.70	2.80E+00		-1.37E-01	1.36E+00
NP-237	86.50	12.60	8.78E-01	8.78E-01	3.31E-01	4.31E-01
NP-239	106.10	22.70	1.69E+03	1.69E+03	7.02E+01	8.25E+02
	228.18	10.70	4.72E+03		-8.98E+02	2.28E+03
	277.60	14.10	3.59E+03		3.39E+02	1.73E+03
AM-241	59.54	35.90	2.46E-01	2.46E-01	1.80E-01	1.21E-01
AM-243	74.67	66.00	1.99E-01	1.99E-01	8.29E-01	9.82E-02
CM-243	209.75	3.29	4.04E+00	9.05E-01	-3.14E-01	1.96E+00
	228.14	10.60	1.20E+00		1.40E-01	5.79E-01
	277.60	14.00	9.05E-01		8.55E-02	4.35E-01

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

No Action Level results available for reporting purposes.

Analysis Report for 1510064-04
CP5005S14-15

DATA REVIEW COMMENTS REPORT

Creation Date

Comment

User

No Data Review Comments Entered.

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

Sample Title: CP5005S14-15

Elapsed Live time: 3600
 Elapsed Real Time: 3701

Channel								
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	36	71
17:	73	76	72	65	52	57	61	71
25:	65	49	53	61	54	59	54	59
33:	46	61	74	62	69	52	78	63
41:	72	57	66	66	84	91	85	70
49:	74	70	77	77	80	75	68	75
57:	99	92	85	77	130	130	146	97
65:	106	98	96	105	107	127	109	118
73:	164	237	246	275	227	129	88	93
81:	71	93	112	92	107	131	124	118
89:	96	102	100	149	120	76	54	63
97:	62	57	71	65	59	59	60	63
105:	67	68	59	64	65	53	51	77
113:	53	71	73	62	57	55	37	58
121:	45	59	56	56	56	59	63	62
129:	82	75	60	49	52	53	51	57
137:	51	65	52	51	44	64	56	36
145:	49	42	54	44	57	51	61	45
153:	60	56	77	52	44	45	52	53
161:	42	44	41	48	37	41	59	51
169:	42	40	46	34	44	46	31	45
177:	47	38	50	34	34	57	53	57
185:	73	82	64	47	31	44	44	36
193:	32	51	34	41	36	54	46	37
201:	44	43	46	32	41	44	37	49
209:	60	50	28	42	36	39	38	48
217:	45	32	30	27	45	28	40	36
225:	35	26	38	30	35	20	43	37
233:	27	32	40	59	119	199	147	72
241:	80	58	46	30	29	25	35	25
249:	22	24	23	26	26	20	29	36
257:	24	31	22	21	21	26	22	20
265:	26	19	32	26	30	51	26	33
273:	25	17	27	28	23	25	28	18
281:	20	19	24	23	20	19	28	24
289:	18	17	24	18	40	60	83	46
297:	17	24	20	39	22	21	21	26
305:	21	19	25	16	22	25	13	22
313:	15	26	17	15	21	23	17	21
321:	18	12	15	13	10	13	17	31
329:	31	16	19	12	15	25	16	41
337:	44	42	39	21	20	14	19	11
345:	20	8	18	22	22	43	109	104
353:	47	21	12	15	21	15	17	17
361:	15	11	11	13	17	16	19	21

369: 8 19 15 14 15 17 18 11

Sample Title: CP5005S14-15

Channel	1	2	3	4	5	6	7	8
377:	5	17	12	15	15	18	18	18
385:	10	16	12	16	17	13	13	18
393:	12	14	16	15	8	15	13	13
401:	14	20	18	16	24	16	15	16
409:	22	6	22	15	13	9	17	12
417:	11	14	11	14	12	12	14	12
425:	13	11	12	12	11	12	5	5
433:	8	16	14	15	6	15	11	11
441:	20	14	11	9	10	14	9	16
449:	8	10	7	13	7	15	18	15
457:	11	8	10	13	15	16	13	16
465:	14	10	7	9	15	5	8	11
473:	10	9	9	7	7	15	8	13
481:	16	10	10	7	8	9	17	11
489:	9	10	8	7	9	10	7	11
497:	8	13	8	13	7	11	10	8
505:	14	10	11	15	25	41	24	21
513:	15	6	9	10	9	10	11	15
521:	10	6	11	14	12	8	12	12
529:	11	13	14	7	7	7	7	7
537:	9	18	10	10	8	8	9	9
545:	7	8	14	3	10	2	6	2
553:	9	10	8	7	6	9	11	5
561:	10	7	14	8	9	7	17	12
569:	8	6	17	8	9	7	6	9
577:	3	4	4	10	20	43	48	29
585:	13	8	6	9	13	4	6	3
593:	6	4	13	8	7	6	15	12
601:	6	5	13	10	12	12	12	46
609:	66	60	14	10	5	12	14	7
617:	3	3	5	5	3	10	5	2
625:	8	13	11	4	8	6	3	9
633:	9	7	6	7	5	7	6	5
641:	10	12	8	3	8	9	7	10
649:	7	9	7	8	10	3	6	7
657:	8	6	5	11	11	5	10	5
665:	9	3	7	6	7	5	10	4
673:	7	6	8	12	5	5	8	4
681:	10	9	11	8	7	9	1	4
689:	9	9	4	9	6	7	7	7
697:	5	9	5	10	4	4	17	6
705:	7	8	6	7	6	11	6	7
713:	5	10	10	7	5	7	6	8
721:	11	8	4	7	9	10	18	16
729:	5	5	8	10	6	10	8	5
737:	5	8	4	8	11	10	6	5
745:	6	6	7	8	7	4	8	11
753:	3	9	5	7	11	7	5	3
761:	12	2	6	6	7	4	11	10
769:	9	6	3	10	7	7	2	9
777:	6	8	7	5	6	6	12	3
785:	8	7	7	5	4	2	6	7
793:	6	6	17	3	3	3	4	4

801: 9 2 2 6 12 6 9 4

Sample Title: CP5005S14-15

Channel	-----	-----	-----	-----	-----	-----	-----	-----
809:	7	6	6	5	3	4	10	5
817:	3	9	4	4	3	1	9	7
825:	6	4	1	6	3	4	7	7
833:	12	11	3	7	9	8	7	4
841:	2	4	5	5	6	5	3	4
849:	7	3	7	7	1	7	3	7
857:	7	3	10	5	12	9	4	5
865:	1	3	4	9	0	3	2	5
873:	1	4	2	5	6	12	4	4
881:	5	6	6	6	3	8	5	4
889:	3	5	2	2	2	7	3	7
897:	4	5	4	5	4	5	7	3
905:	3	7	3	6	6	19	24	23
913:	11	6	5	4	2	4	4	8
921:	2	2	4	5	2	0	3	6
929:	4	8	3	6	9	2	3	9
937:	3	5	3	3	3	3	5	4
945:	1	4	4	3	5	7	2	6
953:	4	6	1	5	2	6	4	5
961:	7	6	9	11	8	7	9	15
969:	21	14	6	4	4	1	4	3
977:	7	4	6	7	6	6	5	2
985:	3	1	4	6	5	2	8	8
993:	3	5	0	7	7	6	6	12
1001:	5	5	4	5	7	2	6	1
1009:	5	4	1	3	3	2	6	4
1017:	1	7	6	4	5	4	3	3
1025:	3	2	4	3	5	3	4	8
1033:	5	2	4	4	3	5	2	7
1041:	5	2	5	4	4	4	3	0
1049:	3	7	5	3	2	2	1	5
1057:	1	6	4	1	3	2	8	5
1065:	9	3	2	5	5	3	4	2
1073:	6	4	6	3	1	4	7	8
1081:	5	6	4	5	6	2	2	7
1089:	3	6	1	2	9	11	3	3
1097:	4	2	1	3	6	3	8	10
1105:	4	2	7	3	8	3	4	4
1113:	3	2	5	2	7	4	13	14
1121:	8	9	11	7	2	3	2	3
1129:	3	2	7	7	2	3	2	5
1137:	5	6	2	4	5	2	6	4
1145:	4	10	0	4	7	4	3	3
1153:	2	2	5	5	1	5	3	4
1161:	5	3	3	3	4	11	6	9
1169:	5	6	2	1	0	8	2	5
1177:	5	2	6	5	3	2	2	4
1185:	5	5	2	2	9	5	5	3
1193:	6	1	6	7	5	3	5	2
1201:	6	5	5	7	6	7	8	3
1209:	4	6	5	5	5	3	2	8
1217:	3	7	5	5	5	5	3	3
1225:	6	4	7	6	3	7	1	5

1233: 4 7 5 3 2 8 4 6

Sample Title: CP5005S14-15

Channel	1	2	3	4	5	6	7	8
1241:	3	2	3	5	2	3	5	4
1249:	4	0	3	4	2	5	1	5
1257:	3	3	1	5	3	2	4	0
1265:	2	0	2	1	3	4	5	2
1273:	7	3	1	1	5	3	2	8
1281:	6	7	2	4	2	3	5	3
1289:	1	5	2	1	3	1	2	5
1297:	3	1	4	4	3	2	1	2
1305:	2	4	4	3	4	1	3	0
1313:	3	3	1	2	2	3	4	3
1321:	2	2	0	4	2	0	0	2
1329:	1	4	2	2	1	5	1	4
1337:	1	1	3	5	5	2	3	1
1345:	4	0	2	4	0	3	2	3
1353:	1	4	3	1	0	1	5	3
1361:	2	2	2	5	2	3	5	0
1369:	4	1	2	4	1	2	2	4
1377:	4	5	4	2	3	3	4	1
1385:	2	3	1	4	1	3	4	2
1393:	3	4	2	3	3	1	1	2
1401:	3	1	0	2	3	2	3	4
1409:	4	3	1	2	1	1	0	0
1417:	1	4	2	2	0	3	4	3
1425:	1	5	2	2	0	0	3	3
1433:	2	3	1	3	2	1	2	4
1441:	2	3	0	0	1	1	1	2
1449:	3	1	3	2	0	2	1	2
1457:	2	5	23	52	66	62	23	4
1465:	1	1	0	1	1	0	0	2
1473:	0	1	2	1	3	2	0	2
1481:	1	0	2	1	2	1	2	3
1489:	2	1	1	0	1	1	1	2
1497:	1	3	2	2	3	2	4	0
1505:	1	2	6	1	3	3	2	3
1513:	1	0	1	1	2	1	1	2
1521:	1	2	3	0	1	0	0	0
1529:	1	0	1	2	2	2	0	4
1537:	4	1	2	1	2	1	2	2
1545:	2	1	0	0	1	3	1	1
1553:	1	2	0	0	1	1	0	1
1561:	0	1	3	2	0	0	1	1
1569:	1	0	0	1	0	1	2	1
1577:	0	0	1	2	2	0	1	1
1585:	3	1	1	7	5	1	2	2
1593:	4	2	1	1	0	0	3	3
1601:	1	1	0	1	0	0	0	2
1609:	0	2	3	1	0	1	0	1
1617:	2	0	2	0	2	1	0	1
1625:	0	0	0	0	0	3	0	0
1633:	0	2	0	0	0	2	0	2
1641:	0	1	3	1	0	0	1	0
1649:	2	0	1	1	2	0	2	1
1657:	0	0	1	1	0	1	1	1

1665: 1 1 4 0 0 1 0 3

Sample Title: CP5005S14-15

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

2097: 0 1 0 0 0 2 0 3

Sample Title: CP5005S14-15

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

2529: 1 1 0 0 0 0 0 0

Sample Title: CP5005S14-15

Channel	1	2	3	4	5	6	7	8
2537:	2	0	0	0	0	0	0	0
2545:	0	0	1	0	0	0	0	1
2553:	0	0	0	0	0	1	0	1
2561:	0	1	0	0	0	1	0	0
2569:	0	0	0	0	0	1	1	1
2577:	0	0	0	1	0	0	2	1
2585:	0	0	0	0	1	0	0	1
2593:	0	0	0	1	0	0	0	0
2601:	0	0	0	0	0	0	0	1
2609:	0	0	1	1	0	4	7	8
2617:	5	4	0	1	0	1	0	1
2625:	1	0	1	0	1	0	0	3
2633:	0	0	0	0	2	0	0	0
2641:	0	0	0	1	0	0	0	0
2649:	0	0	0	0	1	0	0	0
2657:	0	0	0	0	0	0	0	0
2665:	0	0	0	0	0	0	0	0
2673:	1	0	0	0	0	0	0	0
2681:	0	1	1	0	0	0	0	0
2689:	0	0	0	0	0	0	0	0
2697:	1	0	0	1	0	0	0	1
2705:	0	0	0	0	0	0	1	0
2713:	0	0	0	0	0	0	0	0
2721:	0	0	0	0	0	0	0	0
2729:	0	0	0	0	1	0	0	0
2737:	0	0	0	0	0	0	1	0
2745:	0	0	0	1	0	0	0	0
2753:	0	1	0	0	1	1	0	0
2761:	0	0	1	0	0	0	0	0
2769:	0	1	0	0	0	1	0	0
2777:	0	0	0	1	0	0	0	0
2785:	0	0	0	1	0	0	0	0
2793:	0	0	0	0	0	0	0	1
2801:	0	0	0	0	0	0	0	0
2809:	0	0	0	0	0	0	0	0
2817:	0	0	0	0	0	0	0	0
2825:	0	1	0	0	0	0	0	0
2833:	0	0	0	0	0	0	0	0
2841:	0	1	0	1	0	2	0	0
2849:	0	0	0	0	0	0	1	0
2857:	0	0	0	0	0	0	0	0
2865:	0	0	1	0	0	1	1	0
2873:	0	0	0	0	0	0	0	0
2881:	0	0	1	0	1	0	0	1
2889:	0	0	2	1	0	1	0	0
2897:	0	0	0	0	0	0	0	0
2905:	1	0	0	0	0	0	0	0
2913:	0	0	0	1	0	0	0	0
2921:	0	0	1	1	0	0	0	0
2929:	0	0	0	0	0	0	0	0
2937:	0	0	0	0	0	0	0	0
2945:	1	2	0	1	0	0	0	0
2953:	0	0	0	0	0	0	0	0

2961: 1 0 0 0 0 0 0 0 0

Sample Title: CP5005S14-15

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

3393: 0 0 0 0 0 0 0 0 0

Sample Title: CP5005S14-15

Channel	1	2	3	4	5	6	7	8	9
3401:	0	0	0	0	2	0	0	0	0
3409:	0	0	0	0	0	0	0	0	0
3417:	0	0	0	0	0	1	1	0	0
3425:	0	0	0	0	0	0	0	1	0
3433:	0	0	0	0	0	0	0	1	0
3441:	0	0	0	0	0	0	0	0	0
3449:	0	0	0	0	0	0	0	0	1
3457:	1	0	0	0	0	0	0	0	0
3465:	0	0	0	0	0	0	0	0	0
3473:	0	0	0	0	0	0	0	0	0
3481:	0	0	0	0	0	0	0	0	0
3489:	0	1	0	0	0	0	0	0	0
3497:	0	0	0	0	0	0	0	0	0
3505:	0	1	0	0	1	0	0	0	0
3513:	0	0	0	0	0	0	0	0	0
3521:	0	0	1	0	0	0	0	0	0
3529:	0	0	1	0	0	0	0	0	0
3537:	0	0	0	0	0	0	0	0	0
3545:	0	0	1	0	0	0	0	0	0
3553:	1	0	1	0	0	0	0	0	1
3561:	0	0	0	0	0	0	0	0	0
3569:	0	1	0	0	0	1	1	0	0
3577:	0	0	0	1	0	0	0	0	0
3585:	0	0	0	0	0	0	1	0	0
3593:	0	0	0	1	0	0	0	0	1
3601:	0	0	0	1	0	0	0	0	0
3609:	0	0	0	0	0	0	0	0	0
3617:	0	0	0	0	0	0	0	0	0
3625:	0	0	0	0	0	0	0	0	0
3633:	0	0	1	0	0	0	0	0	0
3641:	0	1	0	0	0	0	0	0	1
3649:	0	0	0	0	0	0	0	0	0
3657:	0	0	0	0	0	0	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	2	0	0	0	1	0	0
3689:	0	0	0	0	0	0	0	0	0
3697:	0	0	0	0	0	0	0	0	0
3705:	0	0	0	2	0	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	0
3745:	0	0	0	0	0	2	0	0	0
3753:	0	0	0	0	0	0	0	0	0
3761:	1	0	1	0	1	0	0	0	0
3769:	0	0	0	0	0	0	0	0	0
3777:	0	0	0	0	0	0	0	0	0
3785:	1	0	0	0	1	0	0	0	1
3793:	0	0	0	0	0	0	0	0	0
3801:	2	0	0	1	1	0	0	0	0
3809:	1	0	0	0	0	0	0	0	0
3817:	0	0	0	0	0	0	0	0	0

3825: 0 0 0 0 0 0 0 0 0

Sample Title: CP5005S14-15

Channel	-----	-----	-----	-----	-----	-----	-----	-----
3833:	0	0	0	0	0	1	0	0
3841:	0	1	0	0	0	0	0	0
3849:	1	0	0	0	0	0	0	0
3857:	0	0	0	0	0	1	1	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	1	0	0	0	0	0	0
3897:	0	0	0	0	0	0	0	0
3905:	0	1	0	1	0	0	0	0
3913:	0	0	0	0	0	0	0	0
3921:	0	0	0	0	1	0	0	0
3929:	0	0	0	0	1	0	0	0
3937:	0	0	0	0	0	0	0	0
3945:	0	0	0	0	0	0	0	0
3953:	0	0	1	0	0	0	0	0
3961:	0	0	0	0	0	1	0	0
3969:	0	0	0	0	0	1	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	0	0	1	0	0	0	0
4017:	0	0	0	0	0	0	1	0
4025:	0	0	0	0	0	0	0	0
4033:	0	0	0	0	0	0	0	0
4041:	0	0	0	0	0	1	2	0
4049:	0	0	0	0	0	0	1	0
4057:	0	0	0	0	0	0	0	0
4065:	0	0	0	0	1	0	0	0
4073:	0	0	0	0	0	0	0	0
4081:	0	0	0	0	0	0	0	0
4089:	0	0	0	0	0	0	0	0

KB
11/3/15Analysis Report for 1510064-05
CP5005S16-17 5

GAMMA SPECTRUM ANALYSIS

Sample Identification : 1510064-05
Sample Description : CP5005S16-17 5
Sample Type : SOIL

Sample Size : 5.250E+02 grams
Facility : Countroom

Sample Taken On : 10/6/2015 7:34:08AM
Acquisition Started : 11/3/2015 11:27:07AM

Procedure : GAS-1402 pCi
Operator : Administrator
Detector Name : GE1
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) : 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 : 29023

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
11/3/15

Analysis Report for 1510064-05
CP5005S16-17 5

PEAK LOCATE REPORT

Peak Locate Performed on : 11/3/2015 12:27:11PM
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	46.49	46.84	0.0000	0.00
2	63.37	63.72	0.0000	0.00
3	76.35	76.69	0.0000	0.00
4	87.80	88.13	0.0000	0.00
5	92.53	92.86	0.0000	0.00
6	106.04	106.37	0.0000	0.00
7	129.48	129.81	0.0000	0.00
8	144.10	144.42	0.0000	0.00
9	185.92	186.22	0.0000	0.00
10	208.82	209.12	0.0000	0.00
11	238.74	239.03	0.0000	0.00
12	241.87	242.15	0.0000	0.00
13	270.35	270.63	0.0000	0.00
14	277.68	277.95	0.0000	0.00
15	295.48	295.75	0.0000	0.00
16	300.48	300.74	0.0000	0.00
17	327.56	327.82	0.0000	0.00
18	338.66	338.92	0.0000	0.00
19	352.20	352.45	0.0000	0.00
20	463.17	463.38	0.0000	0.00
21	496.10	496.30	0.0000	0.00
22	511.15	511.35	0.0000	0.00
23	583.60	583.77	0.0000	0.00
24	609.61	609.77	0.0000	0.00
25	703.45	703.57	0.0000	0.00
26	727.79	727.91	0.0000	0.00
27	768.47	768.58	0.0000	0.00
28	795.21	795.31	0.0000	0.00
29	911.52	911.57	0.0000	0.00
30	934.65	934.70	0.0000	0.00
31	965.11	965.14	0.0000	0.00
32	969.30	969.34	0.0000	0.00
33	1033.86	1033.87	0.0000	0.00
34	1092.07	1092.06	0.0000	0.00
35	1110.67	1110.65	0.0000	0.00
36	1121.23	1121.21	0.0000	0.00
37	1231.92	1231.86	0.0000	0.00
38	1239.69	1239.63	0.0000	0.00
39	1331.41	1331.31	0.0000	0.00
40	1378.06	1377.95	0.0000	0.00
41	1412.13	1412.00	0.0000	0.00
42	1416.13	1416.00	0.0000	0.00

Analysis Report for 1510064-05
CP5005S16-17 5

<i>Peak No.</i>	<i>Energy (keV)</i>	<i>Centroid Channel</i>	<i>Centroid Uncertainty</i>	<i>Peak Significance</i>
43	1461.54	1461.39	0.0000	0.00
44	1592.47	1592.28	0.0000	0.00
45	1607.09	1606.89	0.0000	0.00
46	1634.75	1634.54	0.0000	0.00
47	1660.86	1660.65	0.0000	0.00
48	1696.79	1696.56	0.0000	0.00
49	1703.02	1702.79	0.0000	0.00
50	1717.13	1716.89	0.0000	0.00
51	1730.42	1730.17	0.0000	0.00
52	1765.50	1765.25	0.0000	0.00
53	1818.95	1818.68	0.0000	0.00
54	1842.88	1842.59	0.0000	0.00
55	1848.14	1847.86	0.0000	0.00
56	1870.49	1870.20	0.0000	0.00
57	1889.86	1889.55	0.0000	0.00
58	1950.61	1950.29	0.0000	0.00
59	1981.21	1980.88	0.0000	0.00
60	2013.40	2013.05	0.0000	0.00
61	2104.49	2104.11	0.0000	0.00
62	2204.92	2204.50	0.0000	0.00
63	2219.23	2218.80	0.0000	0.00
64	2316.50	2316.03	0.0000	0.00
65	2397.00	2396.51	0.0000	0.00
66	2615.52	2614.94	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1510064-05

CP5005S16-17 5

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/3/2015 12:27:11PM

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	46.49	44 -	49	46.84	1.25E+02	73.10	9.65E+02	1.22
2	63.37	59 -	67	63.72	2.11E+02	125.07	2.29E+03	1.43
3	76.35	72 -	81	76.69	1.26E+03	151.44	2.53E+03	3.65
m 4	87.80	82 -	102	88.13	2.90E+02	64.68	7.97E+02	1.48
m 5	92.53	82 -	102	92.86	3.08E+02	69.31	6.96E+02	1.49
6	106.04	104 -	108	106.37	4.81E+01	60.09	7.56E+02	1.57
7	129.48	126 -	132	129.81	6.49E+01	78.90	1.08E+03	1.82
8	144.10	142 -	147	144.42	6.45E+01	67.17	8.49E+02	2.02
9	185.92	182 -	190	186.22	3.16E+02	86.42	9.55E+02	2.01
10	208.82	205 -	213	209.12	8.72E+01	76.99	8.56E+02	2.06
M 11	238.74	235 -	246	239.03	9.89E+02	78.43	4.82E+02	1.55
m 12	241.87	235 -	246	242.15	2.16E+02	61.71	4.63E+02	1.68
13	270.35	267 -	274	270.63	6.01E+01	59.87	5.60E+02	2.03
14	277.68	275 -	281	277.95	4.57E+01	52.97	4.73E+02	1.27
M 15	295.48	293 -	304	295.75	3.51E+02	51.25	2.87E+02	1.53
m 16	300.48	293 -	304	300.74	4.80E+01	44.53	3.47E+02	1.91
17	327.56	324 -	332	327.82	5.34E+01	58.16	4.91E+02	2.37
18	338.66	334 -	343	338.92	1.94E+02	68.47	5.57E+02	1.66
19	352.20	348 -	357	352.45	6.01E+02	70.84	3.71E+02	1.87
20	463.17	458 -	467	463.38	5.19E+01	51.20	3.44E+02	1.92
21	496.10	493 -	500	496.30	2.74E+01	34.87	1.85E+02	2.19
22	511.15	507 -	516	511.35	1.80E+02	56.27	3.49E+02	1.93
23	583.60	579 -	589	583.77	3.36E+02	57.18	2.52E+02	1.90
24	609.61	605 -	614	609.77	4.35E+02	61.34	2.85E+02	1.77
25	703.45	698 -	709	703.57	5.70E+01	40.84	1.80E+02	3.85
26	727.79	724 -	731	727.91	5.87E+01	33.05	1.41E+02	1.37
27	768.47	765 -	772	768.58	4.36E+01	35.16	1.79E+02	1.79
28	795.21	791 -	800	795.31	7.08E+01	30.77	9.44E+01	1.94
29	911.52	906 -	917	911.57	1.94E+02	46.09	1.69E+02	1.98
30	934.65	930 -	938	934.70	4.41E+01	26.92	8.17E+01	1.41
M 31	965.11	960 -	981	965.14	4.57E+01	28.28	8.65E+01	2.64
m 32	969.30	960 -	981	969.34	1.19E+02	29.14	6.30E+01	2.05
33	1033.86	1030 -	1038	1033.87	2.42E+01	25.47	8.36E+01	2.15
34	1092.07	1088 -	1095	1092.06	2.42E+01	23.41	7.35E+01	3.24
35	1110.67	1106 -	1113	1110.65	2.60E+01	24.66	8.40E+01	2.30
36	1121.23	1117 -	1125	1121.21	9.45E+01	32.77	1.05E+02	1.44
37	1231.92	1228 -	1235	1231.86	3.59E+01	26.38	9.22E+01	3.13
38	1239.69	1236 -	1245	1239.63	5.10E+01	31.73	1.14E+02	4.19
39	1331.41	1325 -	1336	1331.31	3.28E+01	22.63	4.65E+01	7.46
40	1378.06	1373 -	1383	1377.95	5.00E+01	20.18	2.79E+01	3.03

Analysis Report for 1510064-05

CP5005S16-17 5

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
M	41	1412.13	1396 - 1421		1412.00	1.21E+01	13.15	1.08E+01	2.18
m	42	1416.13	1396 - 1421		1416.00	1.94E+01	12.04	8.64E+00	2.18
	43	1461.54	1455 - 1466		1461.39	8.35E+02	60.23	3.60E+01	2.16
	44	1592.47	1582 - 1599		1592.28	2.89E+01	26.65	5.41E+01	9.38
	45	1607.09	1603 - 1609		1606.89	9.00E+00	6.00	0.00E+00	2.99
	46	1634.75	1629 - 1640		1634.54	1.73E+01	15.87	1.94E+01	8.66
	47	1660.86	1656 - 1665		1660.65	1.47E+01	12.77	1.45E+01	2.02
	48	1696.79	1692 - 1699		1696.56	9.83E+00	8.00	4.33E+00	3.66
	49	1703.02	1700 - 1706		1702.79	9.23E+00	8.75	7.54E+00	4.09
	50	1717.13	1713 - 1719		1716.89	5.07E+00	6.34	3.86E+00	2.68
	51	1730.42	1725 - 1734		1730.17	1.92E+01	15.78	2.36E+01	1.41
	52	1765.50	1760 - 1771		1765.25	7.25E+01	24.82	3.69E+01	2.30
	53	1818.95	1816 - 1820		1818.68	6.75E+00	6.18	2.50E+00	1.06
	54	1842.88	1839 - 1845		1842.59	6.92E+00	9.21	1.02E+01	1.20
	55	1848.14	1846 - 1850		1847.86	6.50E+00	6.96	5.00E+00	1.75
	56	1870.49	1866 - 1874		1870.20	1.20E+01	8.73	4.07E+00	1.87
	57	1889.86	1884 - 1892		1889.55	7.00E+00	9.41	1.00E+01	1.95
	58	1950.61	1948 - 1953		1950.29	5.21E+00	6.08	3.57E+00	1.95
	59	1981.21	1978 - 1983		1980.88	8.00E+00	5.66	0.00E+00	1.66
	60	2013.40	2010 - 2015		2013.05	8.60E+00	7.00	2.80E+00	1.09
	61	2104.49	2100 - 2109		2104.11	1.46E+01	14.14	2.09E+01	1.45
	62	2204.92	2201 - 2207		2204.50	2.95E+01	12.51	6.91E+00	1.97
	63	2219.23	2216 - 2221		2218.80	1.04E+01	7.55	3.17E+00	3.05
	64	2316.50	2313 - 2319		2316.03	7.10E+00	8.03	5.80E+00	3.96
	65	2397.00	2393 - 2398		2396.51	7.91E+00	7.87	6.18E+00	1.16
	66	2615.52	2611 - 2619		2614.94	1.18E+02	21.73	0.00E+00	2.36

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 : 11/3/2015 12:27:11PM

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	46.49	44 -	49	1.25E+02	73.10	9.65E+02	5.72E+01
2	63.37	59 -	67	2.11E+02	125.07	2.29E+03	1.00E+02

Analysis Report for 1510064-05

CP5005S16-17 5

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	3	76.35	72 -	81	1.26E+03	151.44	2.53E+03	1.10E+02
m	4	87.80	82 -	102	2.90E+02	64.68	7.97E+02	4.64E+01
m	5	92.53	82 -	102	3.08E+02	69.31	6.96E+02	4.34E+01
	6	106.04	104 -	108	4.81E+01	60.09	7.56E+02	4.81E+01
	7	129.48	126 -	132	6.49E+01	78.90	1.08E+03	6.35E+01
	8	144.10	142 -	147	6.45E+01	67.17	8.49E+02	5.36E+01
	9	185.92	182 -	190	3.16E+02	86.42	9.55E+02	6.47E+01
	10	208.82	205 -	213	8.72E+01	76.99	8.56E+02	6.14E+01
M	11	238.74	235 -	246	9.89E+02	78.43	4.82E+02	3.61E+01
m	12	241.87	235 -	246	2.16E+02	61.71	4.63E+02	3.54E+01
	13	270.35	267 -	274	6.01E+01	59.87	5.60E+02	4.75E+01
	14	277.68	275 -	281	4.57E+01	52.97	4.73E+02	4.21E+01
M	15	295.48	293 -	304	3.51E+02	51.25	2.87E+02	2.78E+01
m	16	300.48	293 -	304	4.80E+01	44.53	3.47E+02	3.06E+01
	17	327.56	324 -	332	5.34E+01	58.16	4.91E+02	4.63E+01
	18	338.66	334 -	343	1.94E+02	68.47	5.57E+02	5.14E+01
	19	352.20	348 -	357	6.01E+02	70.84	3.71E+02	4.20E+01
	20	463.17	458 -	467	5.19E+01	51.20	3.44E+02	4.04E+01
	21	496.10	493 -	500	2.74E+01	34.87	1.85E+02	2.73E+01
	22	511.15	507 -	516	1.80E+02	56.27	3.49E+02	4.07E+01
	23	583.60	579 -	589	3.36E+02	57.18	2.52E+02	3.61E+01
	24	609.61	605 -	614	4.35E+02	61.34	2.85E+02	3.69E+01
	25	703.45	698 -	709	5.70E+01	40.84	1.80E+02	3.12E+01
	26	727.79	724 -	731	5.87E+01	33.05	1.41E+02	2.41E+01
	27	768.47	765 -	772	4.36E+01	35.16	1.79E+02	2.68E+01
	28	795.21	791 -	800	7.08E+01	30.77	9.44E+01	2.12E+01
	29	911.52	906 -	917	1.94E+02	46.09	1.69E+02	3.02E+01
	30	934.65	930 -	938	4.41E+01	26.92	8.17E+01	1.92E+01
M	31	965.11	960 -	981	4.57E+01	28.28	8.65E+01	1.53E+01
m	32	969.30	960 -	981	1.19E+02	29.14	6.30E+01	1.30E+01
	33	1033.86	1030 -	1038	2.42E+01	25.47	8.36E+01	1.93E+01
	34	1092.07	1088 -	1095	2.42E+01	23.41	7.35E+01	1.75E+01
	35	1110.67	1106 -	1113	2.60E+01	24.66	8.40E+01	1.85E+01
	36	1121.23	1117 -	1125	9.45E+01	32.77	1.05E+02	2.17E+01
	37	1231.92	1228 -	1235	3.59E+01	26.38	9.22E+01	1.93E+01
	38	1239.69	1236 -	1245	5.10E+01	31.73	1.14E+02	2.33E+01
	39	1331.41	1325 -	1336	3.28E+01	22.63	4.65E+01	1.60E+01
	40	1378.06	1373 -	1383	5.00E+01	20.18	2.79E+01	1.18E+01
M	41	1412.13	1396 -	1421	1.21E+01	13.15	1.08E+01	5.41E+00
m	42	1416.13	1396 -	1421	1.94E+01	12.04	8.64E+00	4.83E+00
	43	1461.54	1455 -	1466	8.35E+02	60.23	3.60E+01	1.39E+01
	44	1592.47	1582 -	1599	2.89E+01	26.65	5.41E+01	2.00E+01
	45	1607.09	1603 -	1609	9.00E+00	6.00	0.00E+00	0.00E+00
	46	1634.75	1629 -	1640	1.73E+01	15.87	1.94E+01	1.11E+01
	47	1660.86	1656 -	1665	1.47E+01	12.77	1.45E+01	8.39E+00
	48	1696.79	1692 -	1699	9.83E+00	8.00	4.33E+00	4.08E+00
	49	1703.02	1700 -	1706	9.23E+00	8.75	7.54E+00	5.17E+00
	50	1717.13	1713 -	1719	5.07E+00	6.34	3.86E+00	3.67E+00
	51	1730.42	1725 -	1734	1.92E+01	15.78	2.36E+01	1.08E+01
	52	1765.50	1760 -	1771	7.25E+01	24.82	3.69E+01	1.48E+01
	53	1818.95	1816 -	1820	6.75E+00	6.18	2.50E+00	2.76E+00

Analysis Report for 1510064-05

CP5005S16-17 5

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
54	1842.88	1839 -	1845	6.92E+00	9.21	1.02E+01	6.21E+00
55	1848.14	1846 -	1850	6.50E+00	6.96	5.00E+00	3.90E+00
56	1870.49	1866 -	1874	1.20E+01	8.73	4.07E+00	4.38E+00
57	1889.86	1884 -	1892	7.00E+00	9.41	1.00E+01	6.39E+00
58	1950.61	1948 -	1953	5.21E+00	6.08	3.57E+00	3.30E+00
59	1981.21	1978 -	1983	8.00E+00	5.66	0.00E+00	0.00E+00
60	2013.40	2010 -	2015	8.60E+00	7.00	2.80E+00	3.14E+00
61	2104.49	2100 -	2109	1.46E+01	14.14	2.09E+01	9.79E+00
62	2204.92	2201 -	2207	2.95E+01	12.51	6.91E+00	5.09E+00
63	2219.23	2216 -	2221	1.04E+01	7.55	3.17E+00	3.22E+00
64	2316.50	2313 -	2319	7.10E+00	8.03	5.80E+00	4.94E+00
65	2397.00	2393 -	2398	7.91E+00	7.87	6.18E+00	4.53E+00
66	2615.52	2611 -	2619	1.18E+02	21.73	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 : 11/3/2015 12:27:11PM

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	46.49	44 -	49	46.84	1.25E+02	73.10	9.65E+02	PB-210
2	63.37	59 -	67	63.72	2.11E+02	125.07	2.29E+03	TH-234
								TH-230
3	76.35	72 -	81	76.69	1.26E+03	151.44	2.53E+03	.....
m 4	87.80	82 -	102	88.13	2.90E+02	64.68	7.97E+02	SN-126
								CD-109
								LU-176
m 5	92.53	82 -	102	92.86	3.08E+02	69.31	6.96E+02	GA-67
6	106.04	104 -	108	106.37	4.81E+01	60.09	7.56E+02	NP-239
								EU-155
7	129.48	126 -	132	129.81	6.49E+01	78.90	1.08E+03	.....
8	144.10	142 -	147	144.42	6.45E+01	67.17	8.49E+02	U-235

Analysis Report for 1510064-05

CP5005S16-17 5

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
9	185.92	182 -	190	186.22	3.16E+02	86.42	9.55E+02	RA-226
10	208.82	205 -	213	209.12	8.72E+01	76.99	8.56E+02	GA-67
								CM-243
M 11	238.74	235 -	246	239.03	9.89E+02	78.43	4.82E+02	PB-212
m 12	241.87	235 -	246	242.15	2.16E+02	61.71	4.63E+02	RA-224
13	270.35	267 -	274	270.63	6.01E+01	59.87	5.60E+02	.....
14	277.68	275 -	281	277.95	4.57E+01	52.97	4.73E+02	CM-243
								NP-239
M 15	295.48	293 -	304	295.75	3.51E+02	51.25	2.87E+02	PB-214
m 16	300.48	293 -	304	300.74	4.80E+01	44.53	3.47E+02	GA-67
								PB-212
								BI-210M
17	327.56	324 -	332	327.82	5.34E+01	58.16	4.91E+02	.....
18	338.66	334 -	343	338.92	1.94E+02	68.47	5.57E+02	AC-228
19	352.20	348 -	357	352.45	6.01E+02	70.84	3.71E+02	PB-214
20	463.17	458 -	467	463.38	5.19E+01	51.20	3.44E+02	SB-125
21	496.10	493 -	500	496.30	2.74E+01	34.87	1.85E+02	RU-103
22	511.15	507 -	516	511.35	1.80E+02	56.27	3.49E+02	.....
23	583.60	579 -	589	583.77	3.36E+02	57.18	2.52E+02	TL-208
24	609.61	605 -	614	609.77	4.35E+02	61.34	2.85E+02	BI-214
25	703.45	698 -	709	703.57	5.70E+01	40.84	1.80E+02	NB-94
26	727.79	724 -	731	727.91	5.87E+01	33.05	1.41E+02	BI-212
27	768.47	765 -	772	768.58	4.36E+01	35.16	1.79E+02	.....
28	795.21	791 -	800	795.31	7.08E+01	30.77	9.44E+01	CS-134
29	911.52	906 -	917	911.57	1.94E+02	46.09	1.69E+02	AC-228
								LU-172
							
M 30	934.65	930 -	938	934.70	4.41E+01	26.92	8.17E+01	.....
31	965.11	960 -	981	965.14	4.57E+01	28.28	8.65E+01	.....
m 32	969.30	960 -	981	969.34	1.19E+02	29.14	6.30E+01	AC-228
33	1033.86	1030 -	1038	1033.87	2.42E+01	25.47	8.36E+01	.....
34	1092.07	1088 -	1095	1092.06	2.42E+01	23.41	7.35E+01	.....
35	1110.67	1106 -	1113	1110.65	2.60E+01	24.66	8.40E+01	.....
36	1121.23	1117 -	1125	1121.21	9.45E+01	32.77	1.05E+02	TA-182
								SC-46
								BI-214
								TA-182
37	1231.92	1228 -	1235	1231.86	3.59E+01	26.38	9.22E+01	.....
38	1239.69	1236 -	1245	1239.63	5.10E+01	31.73	1.14E+02	.....
39	1331.41	1325 -	1336	1331.31	3.28E+01	22.63	4.65E+01	.....
40	1378.06	1373 -	1383	1377.95	5.00E+01	20.18	2.79E+01	.....
M 41	1412.13	1396 -	1421	1412.00	1.21E+01	13.15	1.08E+01	.....
m 42	1416.13	1396 -	1421	1416.00	1.94E+01	12.04	8.64E+00	.....
43	1461.54	1455 -	1466	1461.39	8.35E+02	60.23	3.60E+01	K-40
44	1592.47	1582 -	1599	1592.28	2.89E+01	26.65	5.41E+01	.....
45	1607.09	1603 -	1609	1606.89	9.00E+00	6.00	0.00E+00	.....
46	1634.75	1629 -	1640	1634.54	1.73E+01	15.87	1.94E+01	.....
47	1660.86	1656 -	1665	1660.65	1.47E+01	12.77	1.45E+01	.....
48	1696.79	1692 -	1699	1696.56	9.83E+00	8.00	4.33E+00	.....
49	1703.02	1700 -	1706	1702.79	9.23E+00	8.75	7.54E+00	.....
50	1717.13	1713 -	1719	1716.89	5.07E+00	6.34	3.86E+00	.....
51	1730.42	1725 -	1734	1730.17	1.92E+01	15.78	2.36E+01	.....
52	1765.50	1760 -	1771	1765.25	7.25E+01	24.82	3.69E+01	.....
53	1818.95	1816 -	1820	1818.68	6.75E+00	6.18	2.50E+00	.....
54	1842.88	1839 -	1845	1842.59	6.92E+00	9.21	1.02E+01	.....
55	1848.14	1846 -	1850	1847.86	6.50E+00	6.96	5.00E+00	.....

Analysis Report for 1510064-05

CP5005S16-17 5

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
56	1870.49	1866 -	1874	1870.20	1.20E+01	8.73	4.07E+00	.....
57	1889.86	1884 -	1892	1889.55	7.00E+00	9.41	1.00E+01	.....
58	1950.61	1948 -	1953	1950.29	5.21E+00	6.08	3.57E+00	.....
59	1981.21	1978 -	1983	1980.88	8.00E+00	5.66	0.00E+00	.....
60	2013.40	2010 -	2015	2013.05	8.60E+00	7.00	2.80E+00	.....
61	2104.49	2100 -	2109	2104.11	1.46E+01	14.14	2.09E+01	.....
62	2204.92	2201 -	2207	2204.50	2.95E+01	12.51	6.91E+00	BI-214
63	2219.23	2216 -	2221	2218.80	1.04E+01	7.55	3.17E+00	.....
64	2316.50	2313 -	2319	2316.03	7.10E+00	8.03	5.80E+00	.....
65	2397.00	2393 -	2398	2396.51	7.91E+00	7.87	6.18E+00	.....
66	2615.52	2611 -	2619	2614.94	1.18E+02	21.73	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 : 11/3/2015 12:27:11PM

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty	
	1	46.49	1.25E+02	73.10	1.68E-02	1.78E-03
	2	63.37	2.11E+02	125.07	2.49E-02	1.91E-03
	3	76.35	1.26E+03	151.44	2.77E-02	2.35E-03
m	4	87.80	2.90E+02	64.68	2.85E-02	2.73E-03
m	5	92.53	3.08E+02	69.31	2.86E-02	2.65E-03
	6	106.04	4.81E+01	60.09	2.82E-02	2.38E-03
	7	129.48	6.49E+01	78.90	2.67E-02	2.09E-03
	8	144.10	6.45E+01	67.17	2.55E-02	2.12E-03
	9	185.92	3.16E+02	86.42	2.24E-02	2.03E-03
	10	208.82	8.72E+01	76.99	2.09E-02	1.86E-03
M	11	238.74	9.89E+02	78.43	1.92E-02	1.64E-03
m	12	241.87	2.16E+02	61.71	1.91E-02	1.61E-03
	13	270.35	6.01E+01	59.87	1.77E-02	1.40E-03
	14	277.68	4.57E+01	52.97	1.74E-02	1.35E-03
M	15	295.48	3.51E+02	51.25	1.67E-02	1.31E-03
m	16	300.48	4.80E+01	44.53	1.65E-02	1.30E-03
	17	327.56	5.34E+01	58.16	1.55E-02	1.24E-03
	18	338.66	1.94E+02	68.47	1.52E-02	1.22E-03
	19	352.20	6.01E+02	70.84	1.48E-02	1.19E-03

: 00401

Analysis Report for 1510064-05
CP5005S16-17 5

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	20	463.17	5.19E+01	51.20	1.21E-02	1.04E-03
	21	496.10	2.74E+01	34.87	1.15E-02	1.01E-03
	22	511.15	1.80E+02	56.27	1.12E-02	9.90E-04
	23	583.60	3.36E+02	57.18	1.02E-02	9.15E-04
	24	609.61	4.35E+02	61.34	9.82E-03	8.88E-04
	25	703.45	5.70E+01	40.84	8.78E-03	7.97E-04
	26	727.79	5.87E+01	33.05	8.55E-03	7.75E-04
	27	768.47	4.36E+01	35.16	8.19E-03	7.38E-04
	28	795.21	7.08E+01	30.77	7.97E-03	7.14E-04
	29	911.52	1.94E+02	46.09	7.15E-03	6.15E-04
	30	934.65	4.41E+01	26.92	7.00E-03	6.03E-04
M	31	965.11	4.57E+01	28.28	6.83E-03	5.87E-04
m	32	969.30	1.19E+02	29.14	6.80E-03	5.85E-04
	33	1033.86	2.42E+01	25.47	6.46E-03	5.52E-04
	34	1092.07	2.42E+01	23.41	6.19E-03	5.21E-04
	35	1110.67	2.60E+01	24.66	6.11E-03	5.12E-04
	36	1121.23	9.45E+01	32.77	6.06E-03	5.06E-04
	37	1231.92	3.59E+01	26.38	5.64E-03	4.69E-04
	38	1239.69	5.10E+01	31.73	5.61E-03	4.67E-04
	39	1331.41	3.28E+01	22.63	5.32E-03	4.51E-04
	40	1378.06	5.00E+01	20.18	5.18E-03	4.40E-04
M	41	1412.13	1.21E+01	13.15	5.09E-03	4.31E-04
m	42	1416.13	1.94E+01	12.04	5.08E-03	4.30E-04
	43	1461.54	8.35E+02	60.23	4.97E-03	4.19E-04
	44	1592.47	2.89E+01	26.65	4.69E-03	3.86E-04
	45	1607.09	9.00E+00	6.00	4.66E-03	3.83E-04
	46	1634.75	1.73E+01	15.87	4.61E-03	3.76E-04
	47	1660.86	1.47E+01	12.77	4.56E-03	3.69E-04
	48	1696.79	9.83E+00	8.00	4.50E-03	3.60E-04
	49	1703.02	9.23E+00	8.75	4.49E-03	3.59E-04
	50	1717.13	5.07E+00	6.34	4.47E-03	3.55E-04
	51	1730.42	1.92E+01	15.78	4.45E-03	3.52E-04
	52	1765.50	7.25E+01	24.82	4.39E-03	3.43E-04
	53	1818.95	6.75E+00	6.18	4.32E-03	3.30E-04
	54	1842.88	6.92E+00	9.21	4.29E-03	3.26E-04
	55	1848.14	6.50E+00	6.96	4.28E-03	3.26E-04
	56	1870.49	1.20E+01	8.73	4.25E-03	3.26E-04
	57	1889.86	7.00E+00	9.41	4.23E-03	3.26E-04
	58	1950.61	5.21E+00	6.08	4.16E-03	3.26E-04
	59	1981.21	8.00E+00	5.66	4.13E-03	3.26E-04
	60	2013.40	8.60E+00	7.00	4.10E-03	3.26E-04
	61	2104.49	1.46E+01	14.14	4.02E-03	3.26E-04
	62	2204.92	2.95E+01	12.51	3.95E-03	3.26E-04
	63	2219.23	1.04E+01	7.55	3.94E-03	3.26E-04
	64	2316.50	7.10E+00	8.03	3.89E-03	3.26E-04
	65	2397.00	7.91E+00	7.87	3.85E-03	3.26E-04
	66	2615.52	1.18E+02	21.73	3.79E-03	3.26E-04

Analysis Report for 1510064-05
CP5005S16-17 5

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 : 11/3/2015 12:27:11PM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000028941.CNF

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.	
	1	46.49	1.25E+02	73.10	4.50E+01	8.46E+00	7.98E+01	7.36E+01
	2	63.37	2.11E+02	125.07	7.80E+01	1.33E+01	1.33E+02	1.26E+02
	3	76.35	1.26E+03	151.44	9.75E+00	8.28E+00	1.25E+03	1.52E+02
m	4	87.80	2.90E+02	64.68		2.90E+02	2.90E+02	6.47E+01
m	5	92.53	3.08E+02	69.31	1.34E+02	9.83E+00	1.74E+02	7.00E+01
	6	106.04	4.81E+01	60.09		4.81E+01	4.81E+01	6.01E+01
	7	129.48	6.49E+01	78.90		6.49E+01	6.49E+01	7.89E+01
	8	144.10	6.45E+01	67.17	7.18E+00	7.25E+00	5.73E+01	6.76E+01
	9	185.92	3.16E+02	86.42	6.41E+01	7.38E+00	2.52E+02	8.67E+01
	10	208.82	8.72E+01	76.99		8.72E+01	8.72E+01	7.70E+01
M	11	238.74	9.89E+02	78.43	2.34E+01	6.34E+00	9.66E+02	7.87E+01
m	12	241.87	2.16E+02	61.71		2.16E+02	2.16E+02	6.17E+01
	13	270.35	6.01E+01	59.87		6.01E+01	6.01E+01	5.99E+01
	14	277.68	4.57E+01	52.97		4.57E+01	4.57E+01	5.30E+01
M	15	295.48	3.51E+02	51.25	4.17E+00	5.50E+00	3.46E+02	5.15E+01
m	16	300.48	4.80E+01	44.53		4.80E+01	4.80E+01	4.45E+01
	17	327.56	5.34E+01	58.16		5.34E+01	5.34E+01	5.82E+01
	18	338.66	1.94E+02	68.47	2.22E-01	4.54E+00	1.93E+02	6.86E+01
	19	352.20	6.01E+02	70.84	8.83E+00	4.91E+00	5.92E+02	7.10E+01
	20	463.17	5.19E+01	51.20		5.19E+01	5.19E+01	5.12E+01
	21	496.10	2.74E+01	34.87		2.74E+01	2.74E+01	3.49E+01
	22	511.15	1.80E+02	56.27	8.12E+01	5.49E+00	9.84E+01	5.65E+01
	23	583.60	3.36E+02	57.18	6.34E+00	3.74E+00	3.30E+02	5.73E+01
	24	609.61	4.35E+02	61.34	5.20E+00	3.69E+00	4.30E+02	6.14E+01
	25	703.45	5.70E+01	40.84		5.70E+01	5.70E+01	4.08E+01
	26	727.79	5.87E+01	33.05		5.87E+01	5.87E+01	3.30E+01
	27	768.47	4.36E+01	35.16		4.36E+01	4.36E+01	3.52E+01
	28	795.21	7.08E+01	30.77		7.08E+01	7.08E+01	3.08E+01
	29	911.52	1.94E+02	46.09	3.28E+00	2.53E+00	1.91E+02	4.62E+01
	30	934.65	4.41E+01	26.92		4.41E+01	4.41E+01	2.69E+01
M	31	965.11	4.57E+01	28.28		4.57E+01	4.57E+01	2.83E+01
m	32	969.30	1.19E+02	29.14		1.19E+02	1.19E+02	2.91E+01
	33	1033.86	2.42E+01	25.47		2.42E+01	2.42E+01	2.55E+01
	34	1092.07	2.42E+01	23.41		2.42E+01	2.42E+01	2.34E+01
	35	1110.67	2.60E+01	24.66		2.60E+01	2.60E+01	2.47E+01

Analysis Report for 1510064-05

CP5005S16-17 5

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
36	1121.23	9.45E+01	32.77	2.28E+00	2.55E+00	9.22E+01	3.29E+01
37	1231.92	3.59E+01	26.38			3.59E+01	2.64E+01
38	1239.69	5.10E+01	31.73			5.10E+01	3.17E+01
39	1331.41	3.28E+01	22.63			3.28E+01	2.26E+01
40	1378.06	5.00E+01	20.18			5.00E+01	2.02E+01
M 41	1412.13	1.21E+01	13.15			1.21E+01	1.32E+01
m 42	1416.13	1.94E+01	12.04			1.94E+01	1.20E+01
43	1461.54	8.35E+02	60.23	6.46E+00	2.33E+00	8.29E+02	6.03E+01
44	1592.47	2.89E+01	26.65			2.89E+01	2.66E+01
45	1607.09	9.00E+00	6.00			9.00E+00	6.00E+00
46	1634.75	1.73E+01	15.87			1.73E+01	1.59E+01
47	1660.86	1.47E+01	12.77			1.47E+01	1.28E+01
48	1696.79	9.83E+00	8.00			9.83E+00	8.00E+00
49	1703.02	9.23E+00	8.75			9.23E+00	8.75E+00
50	1717.13	5.07E+00	6.34			5.07E+00	6.34E+00
51	1730.42	1.92E+01	15.78			1.92E+01	1.58E+01
52	1765.50	7.25E+01	24.82			7.25E+01	2.48E+01
53	1818.95	6.75E+00	6.18			6.75E+00	6.18E+00
54	1842.88	6.92E+00	9.21			6.92E+00	9.21E+00
55	1848.14	6.50E+00	6.96			6.50E+00	6.96E+00
56	1870.49	1.20E+01	8.73			1.20E+01	8.73E+00
57	1889.86	7.00E+00	9.41			7.00E+00	9.41E+00
58	1950.61	5.21E+00	6.08			5.21E+00	6.08E+00
59	1981.21	8.00E+00	5.66			8.00E+00	5.66E+00
60	2013.40	8.60E+00	7.00			8.60E+00	7.00E+00
61	2104.49	1.46E+01	14.14			1.46E+01	1.41E+01
62	2204.92	2.95E+01	12.51			2.95E+01	1.25E+01
63	2219.23	1.04E+01	7.55			1.04E+01	7.55E+00
64	2316.50	7.10E+00	8.03			7.10E+00	8.03E+00
65	2397.00	7.91E+00	7.87			7.91E+00	7.87E+00
66	2615.52	1.18E+02	21.73	3.47E+00	1.48E+00	1.15E+02	2.18E+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 : 11/3/2015 12:27:11PM
 Ref. Peak Energy : 0.00 Reference Date :
 Peak Ratio : 0.00 Uncertainty : 0.00
 Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000028941.CNF

Corrected Area is: Original * Peak Ratio - Background

Analysis Report for 1510064-05

CP5005S16-17 5

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	1	46.49	1.25E+02	73.10	4.50E+01	8.46E+00	7.98E+01	7.36E+01
	2	63.37	2.11E+02	125.07	7.80E+01	1.33E+01	1.33E+02	1.26E+02
	3	76.35	1.26E+03	151.44	9.75E+00	8.28E+00	1.25E+03	1.52E+02
m	4	87.80	2.90E+02	64.68			2.90E+02	6.47E+01
m	5	92.53	3.08E+02	69.31	1.34E+02	9.83E+00	1.74E+02	7.00E+01
	6	106.04	4.81E+01	60.09			4.81E+01	6.01E+01
	7	129.48	6.49E+01	78.90			6.49E+01	7.89E+01
	8	144.10	6.45E+01	67.17	7.18E+00	7.25E+00	5.73E+01	6.76E+01
	9	185.92	3.16E+02	86.42	6.41E+01	7.38E+00	2.52E+02	8.67E+01
	10	208.82	8.72E+01	76.99			8.72E+01	7.70E+01
M	11	238.74	9.89E+02	78.43	2.34E+01	6.34E+00	9.66E+02	7.87E+01
m	12	241.87	2.16E+02	61.71			2.16E+02	6.17E+01
	13	270.35	6.01E+01	59.87			6.01E+01	5.99E+01
	14	277.68	4.57E+01	52.97			4.57E+01	5.30E+01
M	15	295.48	3.51E+02	51.25	4.17E+00	5.50E+00	3.46E+02	5.15E+01
m	16	300.48	4.80E+01	44.53			4.80E+01	4.45E+01
	17	327.56	5.34E+01	58.16			5.34E+01	5.82E+01
	18	338.66	1.94E+02	68.47	2.22E-01	4.54E+00	1.93E+02	6.86E+01
	19	352.20	6.01E+02	70.84	8.83E+00	4.91E+00	5.92E+02	7.10E+01
	20	463.17	5.19E+01	51.20			5.19E+01	5.12E+01
	21	496.10	2.74E+01	34.87			2.74E+01	3.49E+01
	22	511.15	1.80E+02	56.27	8.12E+01	5.49E+00	9.84E+01	5.65E+01
	23	583.60	3.36E+02	57.18	6.34E+00	3.74E+00	3.30E+02	5.73E+01
	24	609.61	4.35E+02	61.34	5.20E+00	3.69E+00	4.30E+02	6.14E+01
	25	703.45	5.70E+01	40.84			5.70E+01	4.08E+01
	26	727.79	5.87E+01	33.05			5.87E+01	3.30E+01
	27	768.47	4.36E+01	35.16			4.36E+01	3.52E+01
	28	795.21	7.08E+01	30.77			7.08E+01	3.08E+01
	29	911.52	1.94E+02	46.09	3.28E+00	2.53E+00	1.91E+02	4.62E+01
	30	934.65	4.41E+01	26.92			4.41E+01	2.69E+01
M	31	965.11	4.57E+01	28.28			4.57E+01	2.83E+01
m	32	969.30	1.19E+02	29.14			1.19E+02	2.91E+01
	33	1033.86	2.42E+01	25.47			2.42E+01	2.55E+01
	34	1092.07	2.42E+01	23.41			2.42E+01	2.34E+01
	35	1110.67	2.60E+01	24.66			2.60E+01	2.47E+01
	36	1121.23	9.45E+01	32.77	2.28E+00	2.55E+00	9.22E+01	3.29E+01
	37	1231.92	3.59E+01	26.38			3.59E+01	2.64E+01
	38	1239.69	5.10E+01	31.73			5.10E+01	3.17E+01
	39	1331.41	3.28E+01	22.63			3.28E+01	2.26E+01
	40	1378.06	5.00E+01	20.18			5.00E+01	2.02E+01
M	41	1412.13	1.21E+01	13.15			1.21E+01	1.32E+01
m	42	1416.13	1.94E+01	12.04			1.94E+01	1.20E+01
	43	1461.54	8.35E+02	60.23	6.46E+00	2.33E+00	8.29E+02	6.03E+01
	44	1592.47	2.89E+01	26.65			2.89E+01	2.66E+01
	45	1607.09	9.00E+00	6.00			9.00E+00	6.00E+00
	46	1634.75	1.73E+01	15.87			1.73E+01	1.59E+01
	47	1660.86	1.47E+01	12.77			1.47E+01	1.28E+01
	48	1696.79	9.83E+00	8.00			9.83E+00	8.00E+00
	49	1703.02	9.23E+00	8.75			9.23E+00	8.75E+00
	50	1717.13	5.07E+00	6.34			5.07E+00	6.34E+00
	51	1730.42	1.92E+01	15.78			1.92E+01	1.58E+01
	52	1765.50	7.25E+01	24.82			7.25E+01	2.48E+01
	53	1818.95	6.75E+00	6.18			6.75E+00	6.18E+00
	54	1842.88	6.92E+00	9.21			6.92E+00	9.21E+00

Analysis Report for 1510064-05

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Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
55	1848.14	6.50E+00	6.96			6.50E+00	6.96E+00
56	1870.49	1.20E+01	8.73			1.20E+01	8.73E+00
57	1889.86	7.00E+00	9.41			7.00E+00	9.41E+00
58	1950.61	5.21E+00	6.08			5.21E+00	6.08E+00
59	1981.21	8.00E+00	5.66			8.00E+00	5.66E+00
60	2013.40	8.60E+00	7.00			8.60E+00	7.00E+00
61	2104.49	1.46E+01	14.14			1.46E+01	1.41E+01
62	2204.92	2.95E+01	12.51			2.95E+01	1.25E+01
63	2219.23	1.04E+01	7.55			1.04E+01	7.55E+00
64	2316.50	7.10E+00	8.03			7.10E+00	8.03E+00
65	2397.00	7.91E+00	7.87			7.91E+00	7.87E+00
66	2615.52	1.18E+02	21.73	3.47E+00	1.48E+00	1.15E+02	2.18E+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	0.919	1460.81 *	10.67	2.23E+01	2.53E+00
GA-67	0.643	93.31 *	35.70	9.76E+01	3.77E+02
		208.95 *	2.24	1.06E+03	4.02E+03
		300.22 *	16.00	1.04E+02	4.11E+02
RU-103	0.855	497.08 *	89.00	6.30E-02	8.06E-02
CD-109	0.991	88.03 *	3.72	4.08E+00	1.02E+00
SN-126	0.992	87.57 *	37.00	3.93E-01	9.55E-02
TL-208	0.817	583.14 *	30.22	1.54E+00	3.01E-01
		860.37	4.48		
		2614.66 *	35.85	1.20E+00	2.51E-01
PB-210	1.000	46.50 *	4.25	1.60E+00	1.49E+00
BI-212	0.718	727.17 *	11.80	8.33E-01	4.74E-01
		1620.62	2.75		
PB-212	0.996	238.63 *	44.60	1.61E+00	1.90E-01
		300.09 *	3.41	1.22E+00	1.14E+00
BI-214	0.726	609.31 *	46.30	1.35E+00	2.29E-01
		1120.29 *	15.10	1.44E+00	5.27E-01
		1764.49	15.80		
		2204.22 *	4.98	2.15E+00	9.27E-01

Analysis Report for 1510064-05
 CP5005S16-17 5

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
PB-214	0.988	295.21 *	19.19	1.55E+00	2.60E-01
		351.92 *	37.19	1.54E+00	2.23E-01
RA-224	0.882	240.98 *	3.95	4.10E+00	1.22E+00
RA-226	0.986	186.21 *	3.28	4.91E+00	9.15E+00
AC-228	0.979	338.32 *	11.40	1.60E+00	5.82E-01
		911.07 *	27.70	1.38E+00	3.54E-01
		969.11 *	16.60	1.50E+00	3.91E-01
TH-234	0.999	63.29 *	3.80	2.01E+00	1.90E+00
NP-239	0.325	106.10 *	22.70	4.30E+02	5.38E+02
		228.18	10.70		
		277.60 *	14.10	1.07E+03	1.24E+03

* = 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 : 11/3/2015 12:27:11PM
 Peak Locate From Channel : 1
 Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
3	76.35	3.47441E-01	6.06		
7	129.48	1.80208E-02	60.81		
8	144.10	1.59253E-02	58.92	Tol.	U-235
13	270.35	1.67038E-02	49.78		
17	327.56	1.48253E-02	54.49		
20	463.17	1.44153E-02	49.33	Sum	
22	511.15	2.73304E-02	28.73		
25	703.45	1.58333E-02	35.83	Sum	
27	768.47	1.21115E-02	40.32		
28	795.21	1.96646E-02	21.73	Sum	
30	934.65	1.22582E-02	30.50		
M 31	965.11	1.26888E-02	30.96		
33	1033.86	6.71717E-03	52.66		
34	1092.07	6.73042E-03	48.31		
35	1110.67	7.21814E-03	47.45		
37	1231.92	9.96782E-03	36.76	Tol.	TA-182
38	1239.69	1.41615E-02	31.12		
39	1331.41	9.09722E-03	34.55		

Analysis Report for 1510064-05
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Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	40	1378.06	1.38976E-02	20.17	
M	41	1412.13	3.36224E-03	54.33	
m	42	1416.13	5.39881E-03	30.98	Sum
	44	1592.47	8.03571E-03	46.05	
	45	1607.09	2.50000E-03	33.33	
	46	1634.75	4.80453E-03	45.89	
	47	1660.86	4.09091E-03	43.35	
	48	1696.79	2.73148E-03	40.68	Sum
	49	1703.02	2.56410E-03	47.38	Sum
	50	1717.13	1.40873E-03	62.55	
	51	1730.42	5.32706E-03	41.14	Sum
	52	1765.50	2.01465E-02	17.11	
	53	1818.95	1.87500E-03	45.81	
	54	1842.88	1.92130E-03	66.55	
	55	1848.14	1.80556E-03	53.57	Sum
	56	1870.49	3.32341E-03	36.49	
	57	1889.86	1.94444E-03	67.20	
	58	1950.61	1.44841E-03	58.33	
	59	1981.21	2.22222E-03	35.36	
	60	2013.40	2.38889E-03	40.70	
	61	2104.49	4.04444E-03	48.57	S-Esc
	63	2219.23	2.89352E-03	36.24	
	64	2316.50	1.97222E-03	56.56	
	65	2397.00	2.19697E-03	49.78	

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

NUCLIDE IDENTIFICATION REPORT

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

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.91	1460.81 *	10.67	2.23E+01	2.53E+00
GA-67	0.64	93.31 *	35.70	9.76E+01	3.77E+02
		208.95 *	2.24	1.06E+03	4.02E+03
		300.22 *	16.00	1.04E+02	4.11E+02

Analysis Report for 1510064-05

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Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
RU-103	0.85	497.08 *	89.00	6.30E-02	8.06E-02
CD-109	0.99	88.03 *	3.72	4.08E+00	1.02E+00
SN-126	0.99	87.57 *	37.00	3.93E-01	9.55E-02
TL-208	0.81	583.14 *	30.22	1.54E+00	3.01E-01
		860.37	4.48		
		2614.66 *	35.85	1.20E+00	2.51E-01
PB-210	1.00	46.50 *	4.25	1.60E+00	1.49E+00
BI-212	0.71	727.17 *	11.80	8.33E-01	4.74E-01
		1620.62	2.75		
PB-212	0.99	238.63 *	44.60	1.61E+00	1.90E-01
		300.09 *	3.41	1.22E+00	1.14E+00
BI-214	0.72	609.31 *	46.30	1.35E+00	2.29E-01
		1120.29 *	15.10	1.44E+00	5.27E-01
		1764.49	15.80		
		2204.22 *	4.98	2.15E+00	9.27E-01
PB-214	0.98	295.21 *	19.19	1.55E+00	2.60E-01
		351.92 *	37.19	1.54E+00	2.23E-01
RA-224	0.88	240.98 *	3.95	4.10E+00	1.22E+00
RA-226	0.98	186.21 *	3.28	4.91E+00	9.15E+00
AC-228	0.97	338.32 *	11.40	1.60E+00	5.82E-01
		911.07 *	27.70	1.38E+00	3.54E-01
		969.11 *	16.60	1.50E+00	3.91E-01
TH-234	0.99	63.29 *	3.80	2.01E+00	1.90E+00
NP-239	0.32	106.10 *	22.70	4.30E+02	5.38E+02
		228.18	10.70		
		277.60 *	14.10	1.07E+03	1.24E+03

* = 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	0.919	2.23E+01	2.53E+00	

: 00409

Analysis Report for 1510064-05

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<i>Nuclide Name</i>	<i>Nuclide Id Confidence</i>	<i>Wt mean Activity (pCi/grams)</i>	<i>Wt mean Activity Uncertainty</i>	<i>Comments</i>	
	GA-67	0.643	8.03E+01	2.97E+02	
	RU-103	0.855	6.30E-02	8.06E-02	
?	CD-109	0.991	4.08E+00	1.02E+00	
?	SN-126	0.992	3.93E-01	9.55E-02	
	TL-208	0.817	1.34E+00	1.93E-01	
	PB-210	1.000	1.60E+00	1.49E+00	
	BI-212	0.718	8.33E-01	4.74E-01	
	PB-212	0.996	1.58E+00	1.88E-01	
	BI-214	0.726	1.40E+00	2.05E-01	
	PB-214	0.988	1.54E+00	1.69E-01	
	RA-224	0.882	4.10E+00	1.22E+00	
	RA-226	0.986	4.91E+00	9.15E+00	
	AC-228	0.979	1.46E+00	2.39E-01	
	TH-234	0.999	2.01E+00	1.90E+00	
	NP-239	0.325	5.31E+02	4.94E+02	
X	CM-243	0.358			

? = 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 1510064-05
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UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/3/2015 12:27:11PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
3	76.35	3.47441E-01	6.06		
7	129.48	1.80208E-02	60.81		
8	144.10	1.59253E-02	58.92	Tol.	U-235
13	270.35	1.67038E-02	49.78		
17	327.56	1.48253E-02	54.49		
20	463.17	1.44153E-02	49.33	Sum	
22	511.15	2.73304E-02	28.73		
25	703.45	1.58333E-02	35.83	Sum	
27	768.47	1.21115E-02	40.32		
28	795.21	1.96646E-02	21.73	Sum	
30	934.65	1.22582E-02	30.50		
M 31	965.11	1.26888E-02	30.96		
33	1033.86	6.71717E-03	52.66		
34	1092.07	6.73042E-03	48.31		
35	1110.67	7.21814E-03	47.45		
37	1231.92	9.96782E-03	36.76	Tol.	TA-182
38	1239.69	1.41615E-02	31.12		
39	1331.41	9.09722E-03	34.55		
40	1378.06	1.38976E-02	20.17		
M 41	1412.13	3.36224E-03	54.33		
m 42	1416.13	5.39881E-03	30.98	Sum	
44	1592.47	8.03571E-03	46.05		
45	1607.09	2.50000E-03	33.33		
46	1634.75	4.80453E-03	45.89		
47	1660.86	4.09091E-03	43.35		
48	1696.79	2.73148E-03	40.68	Sum	
49	1703.02	2.56410E-03	47.38	Sum	
50	1717.13	1.40873E-03	62.55		
51	1730.42	5.32706E-03	41.14	Sum	
52	1765.50	2.01465E-02	17.11		
53	1818.95	1.87500E-03	45.81		
54	1842.88	1.92130E-03	66.55		
55	1848.14	1.80556E-03	53.57	Sum	
56	1870.49	3.32341E-03	36.49		
57	1889.86	1.94444E-03	67.20		

Analysis Report for 1510064-05
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Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
58	1950.61	1.44841E-03	58.33		
59	1981.21	2.22222E-03	35.36		
60	2013.40	2.38889E-03	40.70		
61	2104.49	4.04444E-03	48.57	S-Esc	
63	2219.23	2.89352E-03	36.24		
64	2316.50	1.97222E-03	56.56		
65	2397.00	2.19697E-03	49.78		

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	-1.93E-01	8.58E-01	8.58E-01
+	NA-22	1274.54	99.94	-2.71E-02	7.38E-02	7.38E-02
+	NA-24	1368.53	99.99	6.86E+10	2.00E+12	2.31E+12
		2754.09	99.86	6.62E+11		2.00E+12
+	AL-26	1808.65	99.76	1.12E-02	5.51E-02	5.51E-02
+	K-40	1460.81	* 10.67	2.23E+01	8.66E-01	8.66E-01
+	@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88	94.40	2.63E-02	7.37E-02	7.37E-02
		78.34	96.00	2.86E-01		9.27E-02
+	SC-46	889.25	99.98	-6.90E-02	8.40E-02	8.40E-02
		1120.51	99.99	2.42E-01		1.68E-01
+	V-48	983.52	99.98	2.05E-02	2.48E-01	2.48E-01
		1312.10	97.50	-8.02E-02		2.53E-01
+	CR-51	320.08	9.83	3.35E-01	1.07E+00	1.07E+00
+	MN-54	834.83	99.97	1.88E-02	8.75E-02	8.75E-02
+	CO-56	846.75	99.96	-2.72E-03	1.03E-01	1.03E-01
		1037.75	14.03	2.15E-02		6.29E-01
		1238.25	67.00	1.50E-01		2.29E-01
		1771.40	15.51	0.00E+00		4.27E-01
		2598.48	16.90	-2.38E-02		3.43E-01
+	CO-57	122.06	85.51	-1.39E-03	6.23E-02	6.23E-02
		136.48	10.60	2.56E-01		5.25E-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>
+	CO-58	810.76	99.40	-1.23E-03	9.72E-02	9.72E-02
+	FE-59	1099.22	56.50	2.63E-02	2.16E-01	2.16E-01
		1291.56	43.20	-4.73E-02		2.85E-01
+	CO-60	1173.22	100.00	3.70E-02	8.94E-02	9.86E-02
		1332.49	100.00	6.46E-02		8.94E-02
+	ZN-65	1115.52	50.75	-7.63E-04	1.77E-01	1.77E-01
+	GA-67	93.31	* 35.70	9.76E+01	1.93E+02	1.93E+02
		208.95	* 2.24	1.06E+03		1.53E+03
		300.22	* 16.00	1.04E+02		2.54E+02
+	SE-75	121.11	16.70	8.09E-02	9.96E-02	3.50E-01
		136.00	59.20	3.17E-02		1.03E-01
		264.65	59.80	2.00E-02		9.96E-02
		279.53	25.20	9.83E-02		2.66E-01
		400.65	11.40	2.13E-03		5.60E-01
+	RB-82	776.52	13.00	-7.81E-01	1.17E+00	1.17E+00
+	RB-83	520.41	46.00	1.94E-02	1.77E-01	1.77E-01
		529.64	30.30	9.20E-02		2.68E-01
		552.65	16.40	-5.07E-02		5.01E-01
+	KR-85	513.99	0.43	4.86E+01	2.38E+01	2.38E+01
+	SR-85	513.99	99.27	2.86E-01	1.40E-01	1.40E-01
+	Y-88	898.02	93.40	2.88E-03	6.38E-02	1.07E-01
		1836.01	99.38	-6.37E-03		6.38E-02
+	NB-93M	16.57	9.43	-6.37E+01	6.67E+01	6.67E+01
+	NB-94	702.63	100.00	3.05E-02	6.74E-02	7.86E-02
		871.10	100.00	-5.55E-02		6.74E-02
+	NB-95	765.79	99.81	3.69E-03	1.56E-01	1.56E-01
+	NB-95M	235.69	25.00	-5.59E+02	6.09E+01	6.09E+01
+	ZR-95	724.18	43.70	2.84E-02	1.85E-01	2.44E-01
		756.72	55.30	6.31E-02		1.85E-01
+	MO-99	181.06	6.20	7.06E+02	6.69E+02	1.03E+03
		739.58	12.80	1.67E+01		6.69E+02
		778.00	4.50	-6.90E+02		1.93E+03
+	RU-103	497.08	* 89.00	6.30E-02	1.32E-01	1.32E-01
+	RU-106	621.84	9.80	4.60E-01	7.21E-01	7.21E-01
+	AG-108M	433.93	89.90	-3.74E-02	6.54E-02	6.54E-02
		614.37	90.40	-1.48E-02		7.27E-02
		722.95	90.50	1.46E-02		8.10E-02
+	CD-109	88.03	* 3.72	4.08E+00	4.81E+00	4.81E+00
+	AG-110M	657.75	93.14	1.89E-02	7.85E-02	7.85E-02
		677.61	10.53	1.71E-01		7.28E-01
		706.67	16.46	-2.16E-01		4.79E-01
		763.93	21.98	-2.08E-02		3.63E-01
		884.67	71.63	-6.44E-03		1.10E-01
		1384.27	23.94	7.68E-02		3.07E-01
+	CD-113M	263.70	0.02	4.87E+01	2.22E+02	2.22E+02
+	SN-113	255.12	1.93	-2.66E+00	1.01E-01	2.94E+00
		391.69	64.90	5.70E-03		1.01E-01

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	TE123M	159.00	84.10	4.26E-04	7.30E-02	7.30E-02
+	SB-124	602.71	97.87	-3.85E-03	8.31E-02	1.05E-01
		645.85	7.26	-3.13E-01		1.30E+00
		722.78	11.10	1.65E-01		9.13E-01
		1691.02	49.00	-8.95E-03		8.31E-02
+	I-125	35.49	6.49	1.27E+00	3.10E+00	3.10E+00
+	SB-125	176.33	6.89	3.06E-01	2.24E-01	7.98E-01
		427.89	29.33	7.56E-02		2.24E-01
		463.38	10.35	3.57E-01		7.42E-01
		600.56	17.80	-3.07E-02		4.17E-01
		635.90	11.32	-3.45E-01		5.41E-01
+	SB-126	414.70	83.30	-1.53E-01	3.30E-01	3.69E-01
		666.33	99.60	-2.70E-02		3.30E-01
		695.00	99.60	-1.53E-03		3.30E-01
		720.50	53.80	2.82E-01		6.57E-01
+	SN-126	87.57	* 37.00	3.93E-01	4.64E-01	4.64E-01
+	SB-127	473.00	25.00	2.30E+00	3.16E+01	3.99E+01
		685.20	35.70	4.83E+00		3.16E+01
		783.80	14.70	3.37E+01		8.24E+01
+	I-129	29.78	57.00	1.00E-01	4.97E-01	4.97E-01
		33.60	13.20	-3.80E-01		1.32E+00
		39.58	7.52	-2.79E-01		1.49E+00
+	I-131	284.30	6.05	6.21E-01	7.51E-01	9.99E+00
		364.48	81.20	-1.39E-02		7.51E-01
		636.97	7.26	-5.78E+00		9.27E+00
		722.89	1.80	8.33E+00		4.62E+01
+	TE-132	49.72	13.10	7.03E+01	2.41E+01	2.26E+02
		228.16	88.00	-5.46E+00		2.41E+01
+	BA-133	81.00	33.00	-1.42E+00	8.71E-02	1.80E-01
		302.84	17.80	6.21E-02		3.20E-01
		356.01	60.00	-7.07E-01		8.71E-02
+	I-133	529.87	86.30	1.58E+08	4.61E+08	4.61E+08
+	XE-133	81.00	38.00	-5.08E+01	6.46E+00	6.46E+00
+	CS-134	563.23	8.38	-1.07E-01	8.26E-02	8.56E-01
		569.32	15.43	-1.64E-01		4.23E-01
		604.70	97.60	-1.06E-02		8.26E-02
		795.84	85.40	1.49E-01		1.07E-01
		801.93	8.73	-4.95E-01		7.56E-01
+	CS-135	268.24	16.00	1.78E-01	3.66E-01	3.66E-01
+	@ 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	-4.25E-01	3.29E-01	3.10E+00
		163.89	4.61	-3.03E+00		4.74E+00
		176.55	13.56	6.74E-01		1.76E+00
		273.65	12.66	-2.50E+00		1.90E+00
		340.57	48.50	9.70E-01		6.74E-01
		818.50	99.70	6.84E-02		3.29E-01
		1048.07	79.60	7.15E-03		4.50E-01

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	CS-136	1235.34	19.70	-1.52E+00	3.29E-01	2.48E+00
+	CS-137	661.65	85.12	-6.68E-02	7.24E-02	7.24E-02
+	LA-138	788.74	34.00	1.94E-02	9.90E-02	1.88E-01
		1435.80	66.00	6.46E-03		9.90E-02
+	CE-139	165.85	80.35	1.12E-02	7.07E-02	7.07E-02
+	BA-140	162.64	6.70	1.27E+00	1.17E+00	3.54E+00
		304.84	4.50	1.30E+00		5.40E+00
		423.70	3.20	-3.24E+00		8.95E+00
		437.55	2.00	-1.90E+00		1.39E+01
		537.32	25.00	-5.52E-01		1.17E+00
+	LA-140	328.77	20.50	8.36E-01	3.54E-01	1.38E+00
		487.03	45.50	6.50E-02		6.64E-01
		815.85	23.50	-9.79E-02		1.36E+00
		1596.49	95.49	1.70E-01		3.54E-01
+	CE-141	145.44	48.40	-2.29E-02	2.08E-01	2.08E-01
+	CE-143	57.36	11.80	-1.06E+04	3.09E+05	8.99E+05
		293.26	42.00	8.90E+05		3.09E+05
		664.55	5.20	-5.99E+05		1.88E+06
+	CE-144	133.54	10.80	-1.89E-01	5.02E-01	5.02E-01
+	PM-144	476.78	42.00	-5.06E-02	6.56E-02	1.56E-01
		618.01	98.60	-4.19E-02		6.56E-02
		696.49	99.49	-1.24E-03		7.32E-02
+	PM-145	36.85	21.70	-1.06E-01	3.21E-01	6.04E-01
		37.36	39.70	-2.07E-01		3.21E-01
		42.30	15.10	-5.55E-02		6.70E-01
		72.40	2.31	-2.87E+00		3.46E+00
+	PM-146	453.90	39.94	9.60E-02	1.64E-01	1.64E-01
		735.90	14.01	7.80E-02		4.82E-01
		747.13	13.10	1.89E-01		5.62E-01
+	ND-147	91.11	28.90	-3.67E+00	1.44E+00	1.44E+00
		531.02	13.10	6.02E-01		2.94E+00
+	PM-149	285.90	3.10	-2.30E+03	1.17E+04	1.17E+04
+	EU-152	121.78	20.50	-5.40E-03	2.43E-01	2.43E-01
		244.69	5.40	-3.41E-01		1.15E+00
		344.27	19.13	-5.61E-02		2.73E-01
		778.89	9.20	1.18E-01		7.86E-01
		964.01	10.40	-1.23E+00		9.80E-01
		1085.78	7.22	-1.56E-01		1.03E+00
		1112.02	9.60	-1.38E-02		9.93E-01
		1407.95	14.94	1.22E-01		5.39E-01
+	GD-153	97.43	31.30	-6.71E-02	1.73E-01	1.73E-01
		103.18	22.20	-1.34E-01		2.39E-01
+	EU-154	123.07	40.50	-2.77E-02	1.22E-01	1.22E-01
		723.30	19.70	6.75E-02		3.75E-01
		873.19	11.50	1.00E-01		6.40E-01
		996.32	10.30	-4.95E-01		7.12E-01
		1004.76	17.90	2.21E-01		4.75E-01
		1274.45	35.50	-7.53E-02		2.05E-01
+	EU-155	86.50	30.90	8.28E-02	2.27E-01	2.27E-01

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	EU-155	105.30	20.70	4.94E-02	2.27E-01	2.44E-01
+	EU-156	811.77	10.40	-2.50E-01	2.50E+00	2.50E+00
		1153.47	7.20	2.17E-01		4.70E+00
		1230.71	8.90	3.12E+00		4.40E+00
+	HO-166M	184.41	72.60	2.83E-01	1.00E-01	1.00E-01
		280.45	29.60	-2.47E-02		1.78E-01
		410.94	11.10	2.52E-01		6.30E-01
		711.69	54.10	5.64E-02		1.29E-01
+	TM-171	66.72	0.14	1.03E+01	5.13E+01	5.13E+01
+	HF-172	81.75	4.52	-1.42E+00	4.49E-01	1.38E+00
		125.81	11.30	-1.24E-02		4.49E-01
+	LU-172	181.53	20.60	1.33E+00	2.61E+00	4.69E+00
		810.06	16.63	2.20E-02		8.36E+00
		912.12	15.25	4.98E+01		1.84E+01
		1093.66	62.50	2.98E-01		2.61E+00
+	LU-173	100.72	5.24	2.61E-02	2.99E-01	9.66E-01
		272.11	21.20	2.26E-01		2.99E-01
+	HF-175	343.40	84.00	-1.33E-03	8.44E-02	8.44E-02
+	LU-176	88.34	13.30	1.03E+00	5.35E-02	5.37E-01
		201.83	86.00	2.22E-02		6.26E-02
		306.78	94.00	-1.75E-03		5.35E-02
+	TA-182	67.75	41.20	7.14E-02	2.00E-01	2.00E-01
		1121.30	34.90	7.33E-01		4.50E-01
		1189.05	16.23	-8.68E-02		6.31E-01
		1221.41	26.98	1.38E-01		4.23E-01
		1231.02	11.44	7.96E-01		1.12E+00
+	IR-192	308.46	29.68	-1.56E-01	1.78E-01	2.14E-01
		468.07	48.10	2.09E-02		1.78E-01
+	HG-203	279.19	77.30	4.91E-02	1.13E-01	1.13E-01
+	BI-207	569.67	97.72	-2.82E-02	6.56E-02	6.56E-02
		1063.62	74.90	-4.43E-02		9.72E-02
+	TL-208	583.14	* 30.22	1.54E+00	9.78E-02	3.52E-01
		860.37	4.48	1.25E+00		2.00E+00
		2614.66	* 35.85	1.20E+00		9.78E-02
+	BI-210M	262.00	45.00	-6.40E-02	1.09E-01	1.09E-01
		300.00	23.00	-6.81E-01		2.57E-01
+	PB-210	46.50	* 4.25	1.60E+00	2.41E+00	2.41E+00
+	PB-211	404.84	2.90	-1.71E-01	1.96E+00	1.96E+00
		831.96	2.90	-2.09E-01		2.67E+00
+	BI-212	727.17	* 11.80	8.33E-01	7.21E-01	7.21E-01
		1620.62	2.75	8.92E-01		2.52E+00
+	PB-212	238.63	* 44.60	1.61E+00	2.50E-01	2.50E-01
		300.09	* 3.41	1.22E+00		2.98E+00
+	BI-214	609.31	* 46.30	1.35E+00	2.43E-01	2.43E-01
		1120.29	* 15.10	1.44E+00		7.28E-01
		1764.49	15.80	1.34E+00		9.29E-01
		2204.22	* 4.98	2.15E+00		9.37E-01
+	PB-214	295.21	* 19.19	1.55E+00	2.29E-01	5.19E-01

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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	1.54E+00	2.29E-01	2.29E-01
+	RN-219	401.80		6.50	3.47E-02	8.55E-01	8.55E-01
+	RA-223	323.87		3.88	-3.99E-01	1.24E+00	1.24E+00
+	RA-224	240.98	*	3.95	4.10E+00	2.82E+00	2.82E+00
+	RA-225	40.00		31.00	-2.46E-01	1.31E+00	1.31E+00
+	RA-226	186.21	*	3.28	4.91E+00	2.64E+00	2.64E+00
+	TH-227	50.10		8.40	2.70E-01	5.91E-01	8.67E-01
		236.00		11.50	-5.43E+00		5.91E-01
		256.20		6.30	-3.16E-01		7.77E-01
+	AC-228	338.32	*	11.40	1.60E+00	4.59E-01	8.76E-01
		911.07	*	27.70	1.38E+00		4.59E-01
		969.11	*	16.60	1.50E+00		1.11E+00
+	TH-230	48.44		16.90	1.69E-01	5.08E-01	5.08E-01
		62.85		4.60	2.11E+00		1.73E+00
		67.67		0.37	6.71E+00		1.88E+01
+	PA-231	283.67		1.60	8.87E-01	2.46E+00	3.34E+00
		302.67		2.30	4.78E-01		2.46E+00
+	TH-231	25.64		14.70	9.52E-01	1.02E+00	4.06E+00
		84.21		6.40	-2.31E+00		1.02E+00
+	PA-233	311.98		38.60	4.31E-02	2.83E-01	2.83E-01
+	PA-234	131.20		20.40	-8.44E-02	2.57E-01	2.57E-01
		733.99		8.80	-3.13E-01		7.12E-01
		946.00		12.00	2.52E-01		6.28E-01
+	PA-234M	1001.03		0.92	3.94E-01	9.29E+00	9.29E+00
+	TH-234	63.29	*	3.80	2.01E+00	3.11E+00	3.11E+00
+	U-235	143.76		10.50	3.25E-01	5.25E-01	5.25E-01
		163.35		4.70	-6.72E-01		1.05E+00
		205.31		4.70	-1.39E+00		1.12E+00
+	NP-237	86.50		12.60	2.01E-01	5.52E-01	5.52E-01
+	NP-239	106.10	*	22.70	4.30E+02	8.84E+02	8.84E+02
		228.18		10.70	-4.48E+02		1.98E+03
		277.60	*	14.10	1.07E+03		2.03E+03
+	AM-241	59.54		35.90	-3.72E-01	1.94E-01	1.94E-01
+	AM-243	74.67		66.00	-2.00E-01	1.43E-01	1.43E-01
+	CM-243	209.75	*	3.29	1.82E+00	5.00E-01	2.62E+00
		228.14		10.60	-1.13E-01		5.00E-01
		277.60	*	14.00	2.69E-01		5.12E-01

+ = Nuclide identified during the nuclide identification

* = Energy line found in the spectrum

> = MDA value not calculated

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

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

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NUCLIDE MDA REPORT

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

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
BE-7	477.59	10.42	8.58E-01	8.58E-01	-1.93E-01	4.06E-01
NA-22	1274.54	99.94	7.38E-02	7.38E-02	-2.71E-02	3.33E-02
NA-24	1368.53	99.99	2.31E+12	2.00E+12	6.86E+10	1.02E+12
	2754.09	99.86	2.00E+12		6.62E+11	8.09E+11
AL-26	1808.65	99.76	5.51E-02	5.51E-02	1.12E-02	2.31E-02
+ K-40	1460.81	* 10.67	8.66E-01	8.66E-01	2.23E+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	7.37E-02	7.37E-02	2.63E-02	3.61E-02
	78.34	96.00	9.27E-02		2.86E-01	4.56E-02
SC-46	889.25	99.98	8.40E-02	8.40E-02	-6.90E-02	3.87E-02
	1120.51	99.99	1.68E-01		2.42E-01	8.02E-02
V-48	983.52	99.98	2.48E-01	2.48E-01	2.05E-02	1.14E-01
	1312.10	97.50	2.53E-01		-8.02E-02	1.14E-01
CR-51	320.08	9.83	1.07E+00	1.07E+00	3.35E-01	5.10E-01
MN-54	834.83	99.97	8.75E-02	8.75E-02	1.88E-02	4.11E-02
CO-56	846.75	99.96	1.03E-01	1.03E-01	-2.72E-03	4.81E-02
	1037.75	14.03	6.29E-01		2.15E-02	2.87E-01
	1238.25	67.00	2.29E-01		1.50E-01	1.08E-01
	1771.40	15.51	4.27E-01		0.00E+00	1.77E-01
	2598.48	16.90	3.43E-01		-2.38E-02	1.33E-01
CO-57	122.06	85.51	6.23E-02	6.23E-02	-1.39E-03	3.03E-02
	136.48	10.60	5.25E-01		2.56E-01	2.55E-01
CO-58	810.76	99.40	9.72E-02	9.72E-02	-1.23E-03	4.53E-02
FE-59	1099.22	56.50	2.16E-01	2.16E-01	2.63E-02	9.94E-02
	1291.56	43.20	2.85E-01		-4.73E-02	1.30E-01
CO-60	1173.22	100.00	9.86E-02	8.94E-02	3.70E-02	4.59E-02
	1332.49	100.00	8.94E-02		6.46E-02	4.10E-02
ZN-65	1115.52	50.75	1.77E-01	1.77E-01	-7.63E-04	8.17E-02
+ GA-67	93.31	* 35.70	1.93E+02	1.93E+02	9.76E+01	9.55E+01
	208.95	* 2.24	1.53E+03		1.06E+03	7.50E+02
	300.22	* 16.00	2.54E+02		1.04E+02	1.24E+02
SE-75	121.11	16.70	3.50E-01	9.96E-02	8.09E-02	1.70E-01
	136.00	59.20	1.03E-01		3.17E-02	4.98E-02
	264.65	59.80	9.96E-02		2.00E-02	4.77E-02
	279.53	25.20	2.66E-01		9.83E-02	1.28E-01
	400.65	11.40	5.60E-01		2.13E-03	2.65E-01
RB-82	776.52	13.00	1.17E+00	1.17E+00	-7.81E-01	5.46E-01
RB-83	520.41	46.00	1.77E-01	1.77E-01	1.94E-02	8.38E-02
	529.64	30.30	2.68E-01		9.20E-02	1.27E-01
	552.65	16.40	5.01E-01		-5.07E-02	2.37E-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)
KR-85	513.99	0.43	2.38E+01	2.38E+01	4.86E+01	1.15E+01
SR-85	513.99	99.27	1.40E-01	1.40E-01	2.86E-01	6.77E-02
Y-88	898.02	93.40	1.07E-01	6.38E-02	2.88E-03	4.99E-02
	1836.01	99.38	6.38E-02		-6.37E-03	2.65E-02
NB-93M	16.57	9.43	6.67E+01	6.67E+01	-6.37E+01	3.08E+01
NB-94	702.63	100.00	7.86E-02	6.74E-02	3.05E-02	3.71E-02
	871.10	100.00	6.74E-02		-5.55E-02	3.11E-02
NB-95	765.79	99.81	1.56E-01	1.56E-01	3.69E-03	7.36E-02
NB-95M	235.69	25.00	6.09E+01	6.09E+01	-5.59E+02	2.95E+01
ZR-95	724.18	43.70	2.44E-01	1.85E-01	2.84E-02	1.15E-01
	756.72	55.30	1.85E-01		6.31E-02	8.70E-02
MO-99	181.06	6.20	1.03E+03	6.69E+02	7.06E+02	4.98E+02
	739.58	12.80	6.69E+02		1.67E+01	3.13E+02
	778.00	4.50	1.93E+03		-6.90E+02	8.99E+02
+ RU-103	497.08	* 89.00	1.32E-01	1.32E-01	6.30E-02	6.28E-02
RU-106	621.84	9.80	7.21E-01	7.21E-01	4.60E-01	3.39E-01
AG-108M	433.93	89.90	6.54E-02	6.54E-02	-3.74E-02	3.10E-02
	614.37	90.40	7.27E-02		-1.48E-02	3.41E-02
	722.95	90.50	8.10E-02		1.46E-02	3.80E-02
+ CD-109	88.03	* 3.72	4.81E+00	4.81E+00	4.08E+00	2.39E+00
AG-110M	657.75	93.14	7.85E-02	7.85E-02	1.89E-02	3.68E-02
	677.61	10.53	7.28E-01		1.71E-01	3.42E-01
	706.67	16.46	4.79E-01		-2.16E-01	2.25E-01
	763.93	21.98	3.63E-01		-2.08E-02	1.70E-01
	884.67	71.63	1.10E-01		-6.44E-03	5.09E-02
	1384.27	23.94	3.07E-01		7.68E-02	1.36E-01
CD-113M	263.70	0.02	2.22E+02	2.22E+02	4.87E+01	1.06E+02
SN-113	255.12	1.93	2.94E+00	1.01E-01	-2.66E+00	1.40E+00
	391.69	64.90	1.01E-01		5.70E-03	4.80E-02
TE123M	159.00	84.10	7.30E-02	7.30E-02	4.26E-04	3.54E-02
SB-124	602.71	97.87	1.05E-01	8.31E-02	-3.85E-03	4.98E-02
	645.85	7.26	1.30E+00		-3.13E-01	6.11E-01
	722.78	11.10	9.13E-01		1.65E-01	4.29E-01
	1691.02	49.00	8.31E-02		-8.95E-03	2.95E-02
I-125	35.49	6.49	3.10E+00	3.10E+00	1.27E+00	1.50E+00
SB-125	176.33	6.89	7.98E-01	2.24E-01	3.06E-01	3.86E-01
	427.89	29.33	2.24E-01		7.56E-02	1.07E-01
	463.38	10.35	7.42E-01		3.57E-01	3.55E-01
	600.56	17.80	4.17E-01		-3.07E-02	1.97E-01
	635.90	11.32	5.41E-01		-3.45E-01	2.52E-01
SB-126	414.70	83.30	3.69E-01	3.30E-01	-1.53E-01	1.76E-01
	666.33	99.60	3.30E-01		-2.70E-02	1.55E-01
	695.00	99.60	3.30E-01		-1.53E-03	1.54E-01
	720.50	53.80	6.57E-01		2.82E-01	3.08E-01
+ SN-126	87.57	* 37.00	4.64E-01	4.64E-01	3.93E-01	2.30E-01
SB-127	473.00	25.00	3.99E+01	3.16E+01	2.30E+00	1.89E+01
	685.20	35.70	3.16E+01		4.83E+00	1.49E+01
	783.80	14.70	8.24E+01		3.37E+01	3.86E+01
I-129	29.78	57.00	4.97E-01	4.97E-01	1.00E-01	2.41E-01
	33.60	13.20	1.32E+00		-3.80E-01	6.41E-01
	39.58	7.52	1.49E+00		-2.79E-01	7.21E-01
I-131	284.30	6.05	9.99E+00	7.51E-01	6.21E-01	4.78E+00
	364.48	81.20	7.51E-01		-1.39E-02	3.57E-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)
I-131	636.97	7.26	9.27E+00	7.51E-01	-5.78E+00	4.32E+00
	722.89	1.80	4.62E+01		8.33E+00	2.17E+01
TE-132	49.72	13.10	2.26E+02	2.41E+01	7.03E+01	1.10E+02
	228.16	88.00	2.41E+01		-5.46E+00	1.16E+01
BA-133	81.00	33.00	1.80E-01	8.71E-02	-1.42E+00	8.79E-02
	302.84	17.80	3.20E-01		6.21E-02	1.53E-01
	356.01	60.00	8.71E-02		-7.07E-01	4.13E-02
I-133	529.87	86.30	4.61E+08	4.61E+08	1.58E+08	2.18E+08
XE-133	81.00	38.00	6.46E+00	6.46E+00	-5.08E+01	3.15E+00
CS-134	563.23	8.38	8.56E-01	8.26E-02	-1.07E-01	4.06E-01
	569.32	15.43	4.23E-01		-1.64E-01	1.99E-01
	604.70	97.60	8.26E-02		-1.06E-02	3.92E-02
	795.84	85.40	1.07E-01		1.49E-01	5.07E-02
	801.93	8.73	7.56E-01		-4.95E-01	3.49E-01
CS-135	268.24	16.00	3.66E-01	3.66E-01	1.78E-01	1.76E-01
@ I-135	1131.51	22.50	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	1260.41	28.60	1.00E+26		1.00E+26	1.00E+20
@	1678.03	9.54	1.00E+26		1.00E+26	1.00E+20
CS-136	153.22	7.46	3.10E+00	3.29E-01	-4.25E-01	1.51E+00
	163.89	4.61	4.74E+00		-3.03E+00	2.29E+00
	176.55	13.56	1.76E+00		6.74E-01	8.50E-01
	273.65	12.66	1.90E+00		-2.50E+00	9.10E-01
	340.57	48.50	6.74E-01		9.70E-01	3.25E-01
	818.50	99.70	3.29E-01		6.84E-02	1.54E-01
	1048.07	79.60	4.50E-01		7.15E-03	2.08E-01
	1235.34	19.70	2.48E+00		-1.52E+00	1.16E+00
CS-137	661.65	85.12	7.24E-02	7.24E-02	-6.68E-02	3.37E-02
LA-138	788.74	34.00	1.88E-01	9.90E-02	1.94E-02	8.71E-02
	1435.80	66.00	9.90E-02		6.46E-03	4.37E-02
CE-139	165.85	80.35	7.07E-02	7.07E-02	1.12E-02	3.42E-02
BA-140	162.64	6.70	3.54E+00	1.17E+00	1.27E+00	1.71E+00
	304.84	4.50	5.40E+00		1.30E+00	2.58E+00
	423.70	3.20	8.95E+00		-3.24E+00	4.26E+00
	437.55	2.00	1.39E+01		-1.90E+00	6.60E+00
	537.32	25.00	1.17E+00		-5.52E-01	5.52E-01
LA-140	328.77	20.50	1.38E+00	3.54E-01	8.36E-01	6.62E-01
	487.03	45.50	6.64E-01		6.50E-02	3.15E-01
	815.85	23.50	1.36E+00		-9.79E-02	6.30E-01
	1596.49	95.49	3.54E-01		1.70E-01	1.57E-01
CE-141	145.44	48.40	2.08E-01	2.08E-01	-2.29E-02	1.01E-01
CE-143	57.36	11.80	8.99E+05	3.09E+05	-1.06E+04	4.39E+05
	293.26	42.00	3.09E+05		8.90E+05	1.50E+05
	664.55	5.20	1.88E+06		-5.99E+05	8.80E+05
CE-144	133.54	10.80	5.02E-01	5.02E-01	-1.89E-01	2.44E-01
PM-144	476.78	42.00	1.56E-01	6.56E-02	-5.06E-02	7.37E-02
	618.01	98.60	6.56E-02		-4.19E-02	3.07E-02
	696.49	99.49	7.32E-02		-1.24E-03	3.43E-02
PM-145	36.85	21.70	6.04E-01	3.21E-01	-1.06E-01	2.93E-01
	37.36	39.70	3.21E-01		-2.07E-01	1.56E-01
	42.30	15.10	6.70E-01		-5.55E-02	3.26E-01
	72.40	2.31	3.46E+00		-2.87E+00	1.70E+00
PM-146	453.90	39.94	1.64E-01	1.64E-01	9.60E-02	7.78E-02
	735.90	14.01	4.82E-01		7.80E-02	2.25E-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)
PM-146	747.13	13.10	5.62E-01	1.64E-01	1.89E-01	2.63E-01
ND-147	91.11	28.90	1.44E+00	1.44E+00	-3.67E+00	7.08E-01
	531.02	13.10	2.94E+00		6.02E-01	1.39E+00
PM-149	285.90	3.10	1.17E+04	1.17E+04	-2.30E+03	5.62E+03
EU-152	121.78	20.50	2.43E-01	2.43E-01	-5.40E-03	1.18E-01
	244.69	5.40	1.15E+00		-3.41E-01	5.58E-01
	344.27	19.13	2.73E-01		-5.61E-02	1.30E-01
	778.89	9.20	7.86E-01		1.18E-01	3.67E-01
	964.01	10.40	9.80E-01		-1.23E+00	4.63E-01
	1085.78	7.22	1.03E+00		-1.56E-01	4.71E-01
	1112.02	9.60	9.93E-01		-1.38E-02	4.63E-01
	1407.95	14.94	5.39E-01		1.22E-01	2.44E-01
GD-153	97.43	31.30	1.73E-01	1.73E-01	-6.71E-02	8.42E-02
	103.18	22.20	2.39E-01		-1.34E-01	1.16E-01
EU-154	123.07	40.50	1.22E-01	1.22E-01	-2.77E-02	5.95E-02
	723.30	19.70	3.75E-01		6.75E-02	1.76E-01
	873.19	11.50	6.40E-01		1.00E-01	2.97E-01
	996.32	10.30	7.12E-01		-4.95E-01	3.28E-01
	1004.76	17.90	4.75E-01		2.21E-01	2.21E-01
	1274.45	35.50	2.05E-01		-7.53E-02	9.24E-02
EU-155	86.50	30.90	2.27E-01	2.27E-01	8.28E-02	1.11E-01
	105.30	20.70	2.44E-01		4.94E-02	1.19E-01
EU-156	811.77	10.40	2.50E+00	2.50E+00	-2.50E-01	1.16E+00
	1153.47	7.20	4.70E+00		2.17E-01	2.18E+00
	1230.71	8.90	4.40E+00		3.12E+00	2.06E+00
HO-166M	184.41	72.60	1.00E-01	1.00E-01	2.83E-01	4.90E-02
	280.45	29.60	1.78E-01		-2.47E-02	8.51E-02
	410.94	11.10	6.30E-01		2.52E-01	3.02E-01
	711.69	54.10	1.29E-01		5.64E-02	6.04E-02
TM-171	66.72	0.14	5.13E+01	5.13E+01	1.03E+01	2.51E+01
HF-172	81.75	4.52	1.38E+00	4.49E-01	-1.42E+00	6.74E-01
	125.81	11.30	4.49E-01		-1.24E-02	2.18E-01
LU-172	181.53	20.60	4.69E+00	2.61E+00	1.33E+00	2.27E+00
	810.06	16.63	8.36E+00		2.20E-02	3.91E+00
	912.12	15.25	1.84E+01		4.98E+01	8.86E+00
	1093.66	62.50	2.61E+00		2.98E-01	1.21E+00
LU-173	100.72	5.24	9.66E-01	2.99E-01	2.61E-02	4.70E-01
	272.11	21.20	2.99E-01		2.26E-01	1.44E-01
HF-175	343.40	84.00	8.44E-02	8.44E-02	-1.33E-03	4.02E-02
LU-176	88.34	13.30	5.37E-01	5.35E-02	1.03E+00	2.63E-01
	201.83	86.00	6.26E-02		2.22E-02	3.02E-02
	306.78	94.00	5.35E-02		-1.75E-03	2.55E-02
TA-182	67.75	41.20	2.00E-01	2.00E-01	7.14E-02	9.81E-02
	1121.30	34.90	4.50E-01		7.33E-01	2.14E-01
	1189.05	16.23	6.31E-01		-8.68E-02	2.91E-01
	1221.41	26.98	4.23E-01		1.38E-01	1.96E-01
	1231.02	11.44	1.12E+00		7.96E-01	5.26E-01
IR-192	308.46	29.68	2.14E-01	1.78E-01	-1.56E-01	1.02E-01
	468.07	48.10	1.78E-01		2.09E-02	8.49E-02
HG-203	279.19	77.30	1.13E-01	1.13E-01	4.91E-02	5.41E-02
BI-207	569.67	97.72	6.56E-02	6.56E-02	-2.82E-02	3.09E-02
	1063.62	74.90	9.72E-02		-4.43E-02	4.45E-02
+ TL-208	583.14	* 30.22	3.52E-01	9.78E-02	1.54E+00	1.70E-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)
TL-208	860.37		4.48	2.00E+00	9.78E-02	1.25E+00	9.41E-01
	2614.66	*	35.85	9.78E-02		1.20E+00	3.47E-02
BI-210M	262.00		45.00	1.09E-01	1.09E-01	-6.40E-02	5.22E-02
	300.00		23.00	2.57E-01		-6.81E-01	1.23E-01
+ PB-210	46.50	*	4.25	2.41E+00	2.41E+00	1.60E+00	1.18E+00
PB-211	404.84		2.90	1.96E+00	1.96E+00	-1.71E-01	9.29E-01
	831.96		2.90	2.67E+00		-2.09E-01	1.25E+00
+ BI-212	727.17	*	11.80	7.21E-01	7.21E-01	8.33E-01	3.41E-01
	1620.62		2.75	2.52E+00		8.92E-01	1.11E+00
+ PB-212	238.63	*	44.60	2.50E-01	2.50E-01	1.61E+00	1.23E-01
	300.09	*	3.41	2.98E+00		1.22E+00	1.45E+00
+ BI-214	609.31	*	46.30	2.43E-01	2.43E-01	1.35E+00	1.17E-01
	1120.29	*	15.10	7.28E-01		1.44E+00	3.43E-01
	1764.49		15.80	9.29E-01		1.34E+00	4.36E-01
	2204.22	*	4.98	9.37E-01		2.15E+00	3.70E-01
+ PB-214	295.21	*	19.19	5.19E-01	2.29E-01	1.55E+00	2.54E-01
	351.92	*	37.19	2.29E-01		1.54E+00	1.11E-01
RN-219	401.80		6.50	8.55E-01	8.55E-01	3.47E-02	4.05E-01
RA-223	323.87		3.88	1.24E+00	1.24E+00	-3.99E-01	5.87E-01
+ RA-224	240.98	*	3.95	2.82E+00	2.82E+00	4.10E+00	1.38E+00
RA-225	40.00		31.00	1.31E+00	1.31E+00	-2.46E-01	6.37E-01
+ RA-226	186.21	*	3.28	2.64E+00	2.64E+00	4.91E+00	1.29E+00
TH-227	50.10		8.40	8.67E-01	5.91E-01	2.70E-01	4.22E-01
	236.00		11.50	5.91E-01		-5.43E+00	2.87E-01
	256.20		6.30	7.77E-01		-3.16E-01	3.72E-01
+ AC-228	338.32	*	11.40	8.76E-01	4.59E-01	1.60E+00	4.27E-01
	911.07	*	27.70	4.59E-01		1.38E+00	2.20E-01
	969.11	*	16.60	1.11E+00		1.50E+00	5.38E-01
TH-230	48.44		16.90	5.08E-01	5.08E-01	1.69E-01	2.47E-01
	62.85		4.60	1.73E+00		2.11E+00	8.49E-01
	67.67		0.37	1.88E+01		6.71E+00	9.21E+00
PA-231	283.67		1.60	3.34E+00	2.46E+00	8.87E-01	1.60E+00
	302.67		2.30	2.46E+00		4.78E-01	1.18E+00
TH-231	25.64		14.70	4.06E+00	1.02E+00	9.52E-01	1.97E+00
	84.21		6.40	1.02E+00		-2.31E+00	4.97E-01
PA-233	311.98		38.60	2.83E-01	2.83E-01	4.31E-02	1.35E-01
PA-234	131.20		20.40	2.57E-01	2.57E-01	-8.44E-02	1.25E-01
	733.99		8.80	7.12E-01		-3.13E-01	3.30E-01
	946.00		12.00	6.28E-01		2.52E-01	2.91E-01
PA-234M	1001.03		0.92	9.29E+00	9.29E+00	3.94E-01	4.33E+00
+ TH-234	63.29	*	3.80	3.11E+00	3.11E+00	2.01E+00	1.53E+00
U-235	143.76		10.50	5.25E-01	5.25E-01	3.25E-01	2.55E-01
	163.35		4.70	1.05E+00		-6.72E-01	5.08E-01
	205.31		4.70	1.12E+00		-1.39E+00	5.40E-01
NP-237	86.50		12.60	5.52E-01	5.52E-01	2.01E-01	2.70E-01
+ NP-239	106.10	*	22.70	8.84E+02	8.84E+02	4.30E+02	4.30E+02
	228.18		10.70	1.98E+03		-4.48E+02	9.52E+02
	277.60	*	14.10	2.03E+03		1.07E+03	9.83E+02
AM-241	59.54		35.90	1.94E-01	1.94E-01	-3.72E-01	9.48E-02
AM-243	74.67		66.00	1.43E-01	1.43E-01	-2.00E-01	7.05E-02
CM-243	209.75	*	3.29	2.62E+00	5.00E-01	1.82E+00	1.28E+00
	228.14		10.60	5.00E-01		-1.13E-01	2.41E-01
	277.60	*	14.00	5.12E-01		2.69E-01	2.48E-01

Analysis Report for 1510064-05
CP5005S16-17 5

-
- + = 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>
----------------------	----------------	-------------

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: CP5005S16-17 5

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	50	84	87	59	70	62
25:	89	70	72	63	65	66	75	74
33:	60	54	72	72	69	66	59	81
41:	87	75	83	86	85	105	181	91
49:	59	96	87	78	85	108	92	113
57:	109	109	120	121	110	123	196	280
65:	138	148	118	158	146	146	143	144
73:	160	168	398	311	436	542	116	140
81:	112	114	114	149	174	116	182	274
89:	103	167	175	131	302	222	107	83
97:	88	85	89	89	86	65	80	79
105:	73	112	98	64	82	104	76	75
113:	82	78	78	108	74	72	77	86
121:	80	66	82	75	79	77	72	73
129:	112	107	81	85	69	72	87	67
137:	81	82	74	67	83	62	81	101
145:	107	73	65	74	89	68	77	61
153:	64	83	78	75	73	68	50	75
161:	77	64	63	54	68	49	66	55
169:	51	63	62	57	50	54	74	67
177:	67	50	70	62	61	43	66	66
185:	84	174	189	60	62	50	58	54
193:	53	50	58	53	46	59	53	64
201:	53	56	54	51	48	60	49	52
209:	83	82	54	46	41	51	50	69
217:	41	51	48	43	60	48	47	45
225:	55	43	44	49	48	45	49	48
233:	55	51	50	45	55	168	689	228
241:	98	169	112	45	43	40	51	32
249:	30	44	47	32	30	36	30	37
257:	27	37	54	33	28	33	37	32
265:	37	35	30	36	32	62	67	45
273:	36	32	42	35	38	62	41	37
281:	27	36	30	40	38	30	34	28
289:	42	35	28	29	28	35	138	233
297:	43	30	32	54	54	28	39	23
305:	35	27	29	26	20	29	23	33
313:	37	27	28	35	22	28	24	30
321:	31	25	15	27	29	19	34	43
329:	47	32	32	36	30	30	33	31
337:	31	83	127	42	34	28	33	19
345:	24	29	19	22	23	27	50	316
353:	246	30	27	27	18	16	28	18
361:	22	20	22	27	27	21	25	25

369: 29 27 17 21 17 15 32 25

Sample Title: CP5005S16-17 5

Channel								
377:	19	25	20	20	31	19	15	22
385:	21	25	29	25	20	28	24	17
393:	19	29	15	31	19	20	19	28
401:	15	20	26	24	22	26	19	23
409:	34	32	27	18	17	26	16	26
417:	22	18	20	19	20	17	15	25
425:	12	26	17	25	22	17	21	16
433:	14	19	17	14	12	23	19	16
441:	17	22	16	18	17	12	12	19
449:	9	12	21	22	21	15	15	13
457:	22	14	18	20	20	21	37	40
465:	17	18	19	14	28	20	12	15
473:	17	14	17	17	12	11	22	16
481:	14	25	12	16	14	16	19	24
489:	14	16	15	14	8	14	18	24
497:	18	17	14	7	17	19	14	14
505:	14	18	18	12	17	44	110	76
513:	26	13	21	17	17	13	12	18
521:	19	14	10	19	13	11	13	17
529:	12	15	10	12	22	14	10	18
537:	17	16	9	17	8	15	17	20
545:	7	15	14	9	15	12	12	17
553:	14	17	13	12	11	22	13	13
561:	17	18	15	16	17	12	16	15
569:	12	11	14	7	13	15	17	13
577:	8	18	10	18	9	32	126	171
585:	36	18	16	17	9	10	16	9
593:	13	12	13	16	13	16	13	24
601:	10	17	9	17	18	15	19	28
609:	150	245	62	14	15	12	11	11
617:	9	10	13	11	5	16	12	10
625:	17	8	5	12	13	8	16	13
633:	10	6	11	13	6	8	10	8
641:	15	11	4	12	9	17	15	12
649:	13	17	10	5	9	12	11	10
657:	11	15	11	8	12	10	8	7
665:	7	16	14	11	14	15	9	4
673:	12	9	11	12	13	11	11	17
681:	7	9	11	6	11	13	15	15
689:	9	9	13	14	8	11	8	16
697:	7	8	13	11	8	14	20	13
705:	17	13	13	10	7	8	15	11
713:	14	9	9	8	7	8	14	11
721:	12	12	12	10	8	14	23	43
729:	11	12	8	6	9	7	8	7
737:	10	14	8	10	8	10	10	11
745:	12	12	9	11	10	9	8	7
753:	9	7	8	13	8	15	11	16
761:	10	10	9	10	6	11	17	22
769:	33	16	18	10	18	8	15	8
777:	8	7	9	10	9	16	5	7
785:	17	12	8	6	8	7	3	7
793:	12	17	30	17	11	6	9	6

801: 3 8 9 8 7 18 12 12

Sample Title: CP5005S16-17 5

Channel	1	2	3	4	5	6	7	8
809:	16	10	11	4	4	8	9	4
817:	12	13	7	11	8	11	9	7
825:	6	8	8	6	9	8	13	13
833:	8	12	7	21	5	13	8	11
841:	12	8	9	11	15	9	9	9
849:	10	10	11	13	3	16	15	6
857:	7	9	7	20	24	17	6	5
865:	9	9	14	5	7	7	5	9
873:	6	9	11	10	11	6	11	6
881:	14	10	8	9	9	4	9	6
889:	5	9	6	6	12	11	16	12
897:	6	7	10	10	10	10	8	10
905:	6	7	9	6	17	10	71	102
913:	37	6	4	5	5	10	8	4
921:	7	3	10	5	7	10	3	6
929:	10	4	8	10	3	16	29	5
937:	9	1	4	7	2	2	10	5
945:	8	6	9	9	6	10	6	13
953:	2	7	12	5	10	8	7	4
961:	8	7	8	19	25	17	13	19
969:	61	42	13	5	9	11	5	7
977:	7	11	10	8	4	6	6	4
985:	7	11	8	5	9	2	10	8
993:	5	3	8	9	8	3	9	6
1001:	15	8	18	4	9	9	7	6
1009:	6	1	5	3	11	2	9	7
1017:	13	11	3	6	8	10	9	11
1025:	13	9	3	7	7	4	5	10
1033:	11	15	5	5	5	6	2	5
1041:	9	3	6	11	5	9	11	7
1049:	5	8	7	5	8	5	11	6
1057:	8	4	11	4	4	8	7	8
1065:	4	7	2	5	11	6	13	6
1073:	6	8	7	2	12	5	5	13
1081:	3	12	6	5	9	1	7	5
1089:	7	6	14	5	14	7	3	4
1097:	11	6	5	4	5	10	4	9
1105:	3	7	5	6	6	10	14	15
1113:	5	6	10	7	8	5	8	25
1121:	57	18	13	6	7	2	12	8
1129:	13	8	6	13	2	6	13	10
1137:	3	9	6	8	6	6	8	9
1145:	5	8	5	3	8	6	6	12
1153:	6	4	15	11	12	10	7	6
1161:	5	10	8	10	6	6	3	7
1169:	7	8	4	13	7	8	13	11
1177:	7	7	9	10	14	5	8	2
1185:	7	3	8	8	6	12	6	5
1193:	12	8	7	5	5	7	9	8
1201:	10	6	10	11	9	9	10	11
1209:	8	10	12	11	9	8	3	11
1217:	5	7	10	10	11	7	6	7
1225:	5	6	7	4	8	9	16	15

1233: 13 9 8 4 10 18 18 15

Sample Title: CP5005S16-17 5

Channel	1	2	3	4	5	6	7	8	9
1241:	18	6	6	9	4	7	6	4	
1249:	10	3	8	8	11	8	3	3	
1257:	3	6	8	5	4	8	7	3	
1265:	9	8	7	3	5	3	7	9	
1273:	2	0	1	4	6	3	10	6	
1281:	9	10	2	8	5	9	3	5	
1289:	4	6	4	7	4	5	4	7	
1297:	1	5	0	7	4	5	6	4	
1305:	3	0	6	6	0	4	8	3	
1313:	4	3	6	4	5	7	5	6	
1321:	5	9	3	3	3	1	2	8	
1329:	7	8	4	5	9	3	6	0	
1337:	2	6	6	2	3	4	3	3	
1345:	1	2	1	1	1	2	4	1	
1353:	2	7	3	0	5	1	4	1	
1361:	4	5	5	3	2	1	3	1	
1369:	5	4	2	1	1	3	4	3	
1377:	14	14	12	5	3	3	2	1	
1385:	4	5	4	1	2	1	2	1	
1393:	4	3	2	1	3	5	3	2	
1401:	7	9	5	2	3	1	4	6	
1409:	9	6	2	6	1	3	4	9	
1417:	2	2	3	1	0	1	0	1	
1425:	5	2	1	2	4	4	3	2	
1433:	2	5	2	2	2	0	6	1	
1441:	4	1	6	2	2	4	1	1	
1449:	5	3	8	2	1	1	2	1	
1457:	2	0	15	104	350	300	61	11	
1465:	6	1	2	1	2	4	2	1	
1473:	2	4	1	1	3	1	4	5	
1481:	2	4	3	1	1	2	3	1	
1489:	1	4	4	3	2	1	4	3	
1497:	3	3	2	0	3	4	4	5	
1505:	2	2	3	2	6	11	5	1	
1513:	0	1	2	0	2	3	2	2	
1521:	0	2	1	3	2	1	3	3	
1529:	2	5	0	5	1	1	1	2	
1537:	3	0	1	1	0	1	5	3	
1545:	1	2	0	2	2	1	0	1	
1553:	2	0	1	1	1	2	2	3	
1561:	2	0	3	1	1	3	1	1	
1569:	0	2	2	1	1	3	2	0	
1577:	4	3	1	1	3	2	1	1	
1585:	1	2	1	6	8	7	2	4	
1593:	2	7	3	2	4	3	0	1	
1601:	0	0	0	0	1	3	1	4	
1609:	0	0	2	2	2	0	0	2	
1617:	0	0	4	4	3	3	4	1	
1625:	3	2	5	3	1	2	8	3	
1633:	1	1	1	2	1	3	4	0	
1641:	0	0	2	2	1	1	1	1	
1649:	2	0	1	0	2	3	2	0	
1657:	3	3	0	2	6	5	1	2	

1665: 0 1 2 0 1 3 2 1

Sample Title: CP5005S16-17 5

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1673:	0	1	1	1	2	3	0	1
1681:	2	0	3	1	0	0	1	0
1689:	1	0	0	1	0	0	3	1
1697:	3	4	0	0	2	3	2	3
1705:	2	1	1	1	1	2	3	1
1713:	0	0	0	3	2	2	0	0
1721:	0	4	2	2	2	2	3	0
1729:	4	11	4	3	1	1	0	1
1737:	0	2	0	1	1	0	2	2
1745:	1	1	1	1	1	3	0	4
1753:	1	1	0	1	0	2	4	2
1761:	5	0	7	14	29	24	4	1
1769:	3	2	0	1	0	1	1	0
1777:	1	1	0	1	1	1	2	0
1785:	2	1	0	1	2	1	2	1
1793:	1	2	2	2	0	2	0	1
1801:	0	1	2	1	2	2	2	0
1809:	2	1	0	0	1	1	0	1
1817:	0	1	6	0	0	0	1	2
1825:	0	0	2	1	2	1	2	0
1833:	1	0	1	1	3	0	2	1
1841:	0	1	6	2	0	1	2	4
1849:	2	0	1	2	0	2	0	1
1857:	1	2	0	2	1	0	0	2
1865:	1	0	1	0	4	5	1	2
1873:	1	0	0	1	1	1	0	0
1881:	0	0	2	0	2	1	0	0
1889:	2	3	4	0	0	1	3	1
1897:	1	0	1	0	1	0	0	1
1905:	0	1	1	1	1	1	1	2
1913:	1	0	3	1	2	1	1	1
1921:	0	0	1	0	2	1	0	0
1929:	1	0	0	0	1	1	1	1
1937:	0	1	2	0	0	2	1	0
1945:	2	0	0	0	1	3	2	1
1953:	0	1	0	1	2	1	0	0
1961:	1	0	0	1	1	3	2	1
1969:	4	0	2	1	2	0	1	1
1977:	0	0	1	1	4	2	0	0
1985:	3	0	0	0	0	0	1	1
1993:	2	2	0	1	2	0	0	0
2001:	2	2	2	1	1	0	3	1
2009:	0	1	1	2	1	5	0	0
2017:	1	1	0	0	0	1	0	0
2025:	2	0	3	0	0	1	0	2
2033:	1	1	2	2	0	0	0	1
2041:	1	0	2	0	0	1	2	1
2049:	2	0	4	2	2	1	1	3
2057:	1	1	2	0	3	0	0	4
2065:	0	1	1	0	1	2	0	2
2073:	0	0	1	3	0	0	1	2
2081:	0	2	2	1	1	0	3	0
2089:	0	1	1	2	0	1	1	1

2097: 1 0 0 1 2 1 3 4

Sample Title: CP5005S16-17 5

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

2529: 1 0 0 1 0 1 0 0

Sample Title: CP5005S16-17 5

Channel	1	2	3	4	5	6	7	8	9
2537:	1	0	0	0	0	1	0	0	
2545:	0	0	0	0	0	1	0	0	
2553:	0	2	0	1	0	0	0	2	
2561:	0	0	1	0	0	0	0	0	
2569:	1	0	1	0	2	0	0	0	
2577:	3	0	0	0	1	0	0	0	
2585:	0	1	1	0	0	1	0	1	
2593:	0	0	0	2	0	1	0	1	
2601:	0	0	0	0	2	0	0	2	
2609:	0	0	0	0	11	26	47	28	
2617:	5	1	0	0	1	0	0	1	
2625:	0	0	1	0	1	0	1	0	
2633:	0	0	0	0	1	0	0	0	
2641:	0	0	0	1	0	0	0	2	
2649:	0	0	0	0	0	1	1	0	
2657:	0	1	0	0	0	0	0	0	
2665:	0	1	0	0	0	2	1	0	
2673:	0	1	1	1	0	0	1	0	
2681:	0	0	0	0	0	0	0	0	
2689:	0	0	0	0	0	0	0	0	
2697:	0	0	0	0	0	0	0	0	
2705:	0	1	0	1	0	0	0	0	
2713:	0	0	1	0	0	1	0	0	
2721:	0	1	0	0	0	0	0	0	
2729:	0	0	0	1	1	0	0	0	
2737:	0	1	1	0	0	0	1	1	
2745:	0	0	0	0	0	1	0	0	
2753:	1	2	0	1	1	0	0	1	
2761:	0	0	2	1	0	0	1	0	
2769:	1	0	0	0	1	1	0	0	
2777:	0	0	1	0	0	1	0	0	
2785:	0	0	1	0	0	0	2	1	
2793:	0	0	0	0	0	1	1	0	
2801:	0	0	1	0	0	0	1	0	
2809:	0	0	0	0	0	0	1	2	
2817:	1	0	1	1	0	0	0	1	
2825:	0	0	0	0	1	0	0	0	
2833:	0	0	0	0	0	0	1	0	
2841:	0	0	0	0	1	0	1	0	
2849:	0	0	0	1	0	2	0	0	
2857:	1	0	0	0	0	0	0	1	
2865:	1	0	0	1	0	0	0	0	
2873:	1	0	0	0	1	0	0	0	
2881:	2	0	1	0	1	0	0	0	
2889:	0	0	0	1	0	0	0	0	
2897:	0	0	0	0	1	0	0	0	
2905:	0	0	0	0	0	0	0	2	
2913:	0	0	1	0	0	0	0	1	
2921:	1	2	0	0	0	0	1	0	
2929:	0	1	1	0	0	1	2	0	
2937:	0	1	0	0	0	1	0	0	
2945:	2	0	0	0	1	0	0	0	
2953:	0	0	0	0	0	0	1	0	

2961: 0 1 0 0 0 0 0 0 0

Sample Title: CP5005S16-17 5

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

3393: 0 0 0 0 0 0 0 0

Sample Title: CP5005S16-17 5

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

3825: 0 1 1 0 1 0 0 0

Sample Title: CP5005S16-17 5

Channel	1	2	3	4	5	6	7	8	9
3833:	0	0	0	0	0	0	0	0	0
3841:	0	0	0	0	1	0	1	0	0
3849:	0	2	0	1	1	1	0	0	0
3857:	0	0	0	0	0	1	0	0	0
3865:	0	0	0	0	0	1	0	0	0
3873:	0	2	0	0	0	0	0	0	0
3881:	0	0	0	0	0	0	0	0	0
3889:	0	0	0	0	0	0	0	0	0
3897:	0	0	0	1	0	0	0	0	0
3905:	0	0	0	0	2	0	0	0	0
3913:	0	0	0	0	0	0	0	0	0
3921:	0	0	0	0	0	0	0	0	1
3929:	0	0	0	0	0	0	0	0	0
3937:	0	0	0	0	1	0	0	0	0
3945:	0	0	0	0	0	0	0	0	0
3953:	0	0	0	0	0	0	0	0	0
3961:	0	0	0	0	0	0	0	0	1
3969:	0	0	0	0	0	0	1	1	1
3977:	0	0	0	0	0	1	0	0	0
3985:	0	1	1	0	0	0	0	0	0
3993:	0	0	0	1	0	0	0	0	1
4001:	1	0	1	0	0	0	0	0	0
4009:	0	0	0	0	0	0	0	0	0
4017:	1	0	1	2	0	0	0	0	0
4025:	0	0	0	0	0	0	1	0	0
4033:	0	0	0	0	0	0	0	0	1
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:	0	0	0	1	0	0	0	0	0
4073:	0	0	0	0	0	0	0	0	0
4081:	0	0	0	0	1	0	0	0	0
4089:	1	1	0	0	0	0	0	0	0

AG
11/3/15Analysis Report for 1510064-06
CP2211S01-02

GAMMA SPECTRUM ANALYSIS

Sample Identification : 1510064-06
Sample Description : CP2211S01-02
Sample Type : SOIL

Sample Size : 6.128E+02 grams
Facility : Countroom

Sample Taken On : 10/6/2015 7:34:35AM
Acquisition Started : 11/3/2015 11:27:14AM

Procedure : GAS-1402 pCi
Operator : Administrator
Detector Name : GE2
Geometry : GAS-1402
Live Time : 3600.0 seconds
Real Time : 3601.3 seconds

Dead Time : 0.04 %

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

Energy Calibration Used Done On : 11/2/2014
Efficiency Calibration Used Done On : 10/25/2014
Efficiency Calibration Description :

Sample Number : 29024

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
11/3/15

Analysis Report for 1510064-06
CP2211S01-02

PEAK LOCATE REPORT

Peak Locate Performed on : 11/3/2015 12:27:31PM
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	52.43	52.54	0.0000	0.00
2	63.62	63.72	0.0000	0.00
3	76.41	76.50	0.0000	0.00
4	84.38	84.46	0.0000	0.00
5	87.39	87.47	0.0000	0.00
6	89.58	89.66	0.0000	0.00
7	92.82	92.90	0.0000	0.00
8	186.05	186.08	0.0000	0.00
9	209.11	209.13	0.0000	0.00
10	238.84	238.84	0.0000	0.00
11	241.99	241.99	0.0000	0.00
12	269.30	269.28	0.0000	0.00
13	288.11	288.08	0.0000	0.00
14	295.32	295.28	0.0000	0.00
15	338.36	338.31	0.0000	0.00
16	352.05	351.98	0.0000	0.00
17	420.32	420.23	0.0000	0.00
18	463.87	463.75	0.0000	0.00
19	510.91	510.76	0.0000	0.00
20	583.31	583.14	0.0000	0.00
21	609.38	609.19	0.0000	0.00
22	665.03	664.81	0.0000	0.00
23	706.20	705.96	0.0000	0.00
24	727.40	727.15	0.0000	0.00
25	733.43	733.18	0.0000	0.00
26	768.32	768.06	0.0000	0.00
27	786.53	786.25	0.0000	0.00
28	795.08	794.80	0.0000	0.00
29	807.65	807.37	0.0000	0.00
30	846.01	845.71	0.0000	0.00
31	860.61	860.31	0.0000	0.00
32	911.30	910.97	0.0000	0.00
33	931.53	931.20	0.0000	0.00
34	934.14	933.80	0.0000	0.00
35	967.53	967.18	0.0000	0.00
36	1052.60	1052.21	0.0000	0.00
37	1056.81	1056.43	0.0000	0.00
38	1088.74	1088.35	0.0000	0.00
39	1120.56	1120.16	0.0000	0.00
40	1220.81	1220.36	0.0000	0.00
41	1238.37	1237.92	0.0000	0.00
42	1281.83	1281.37	0.0000	0.00

Analysis Report for 1510064-06
CP2211S01-02

<i>Peak No.</i>	<i>Energy (keV)</i>	<i>Centroid Channel</i>	<i>Centroid Uncertainty</i>	<i>Peak Significance</i>
43	1313.22	1312.74	0.0000	0.00
44	1377.76	1377.26	0.0000	0.00
45	1401.52	1401.02	0.0000	0.00
46	1407.73	1407.23	0.0000	0.00
47	1441.20	1440.68	0.0000	0.00
48	1460.74	1460.21	0.0000	0.00
49	1509.23	1508.69	0.0000	0.00
50	1519.52	1518.98	0.0000	0.00
51	1582.69	1582.14	0.0000	0.00
52	1661.28	1660.70	0.0000	0.00
53	1685.11	1684.53	0.0000	0.00
54	1729.19	1728.60	0.0000	0.00
55	1764.43	1763.82	0.0000	0.00
56	1847.54	1846.91	0.0000	0.00
57	1923.70	1923.06	0.0000	0.00
58	1946.78	1946.13	0.0000	0.00
59	2118.07	2117.39	0.0000	0.00
60	2203.45	2202.75	0.0000	0.00
61	2262.83	2262.13	0.0000	0.00
62	2294.64	2293.94	0.0000	0.00
63	2614.38	2613.64	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1510064-06

CP2211S01-02

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/3/2015 12:27:31PM

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	52.43	50 -	55	52.54	1.27E+02	82.49	1.24E+03	3.02	
2	63.62	61 -	67	63.72	1.86E+02	103.95	1.83E+03	1.64	
3	76.41	73 -	83	76.50	1.13E+03	168.50	3.13E+03	3.56	
M	4	84.38	83 -	97	84.46	6.80E+01	38.25	4.62E+02	1.46
m	5	87.39	83 -	97	87.47	2.12E+02	67.44	8.69E+02	1.47
m	6	89.58	83 -	97	89.66	1.44E+02	65.88	8.07E+02	1.35
m	7	92.82	83 -	97	92.90	2.64E+02	67.32	7.49E+02	1.49
8	186.05	182 -	189	186.08	2.75E+02	91.78	1.22E+03	1.31	
9	209.11	206 -	212	209.13	5.76E+01	68.69	8.17E+02	2.82	
M	10	238.84	235 -	244	238.84	6.49E+02	72.75	4.92E+02	1.55
m	11	241.99	235 -	244	241.99	3.33E+02	60.77	4.51E+02	1.56
12	269.30	266 -	272	269.28	6.07E+01	56.05	5.31E+02	4.48	
13	288.11	285 -	291	288.08	4.31E+01	49.70	4.14E+02	2.14	
14	295.32	292 -	298	295.28	5.86E+02	69.25	4.49E+02	1.77	
15	338.36	334 -	342	338.31	1.22E+02	61.32	5.02E+02	1.89	
16	352.05	348 -	355	351.98	1.02E+03	81.09	4.13E+02	1.36	
17	420.32	416 -	424	420.23	6.31E+01	48.27	3.20E+02	5.36	
18	463.87	460 -	469	463.75	4.24E+01	52.55	3.71E+02	1.95	
19	510.91	506 -	516	510.76	1.36E+02	60.24	4.09E+02	1.99	
20	583.31	579 -	587	583.14	2.16E+02	48.51	2.27E+02	1.71	
21	609.38	605 -	613	609.19	7.75E+02	67.74	2.28E+02	1.67	
22	665.03	661 -	670	664.81	3.56E+01	37.96	1.87E+02	2.22	
23	706.20	702 -	708	705.96	2.50E+01	27.36	1.16E+02	1.52	
M	24	727.40	723 -	738	727.15	6.03E+01	25.81	8.34E+01	1.97
m	25	733.43	723 -	738	733.18	1.59E+01	21.12	6.90E+01	1.99
26	768.32	763 -	772	768.06	5.98E+01	40.85	2.02E+02	1.69	
27	786.53	782 -	789	786.25	3.65E+01	30.85	1.31E+02	1.97	
28	795.08	791 -	799	794.80	3.30E+01	33.17	1.50E+02	2.18	
29	807.65	803 -	812	807.37	3.76E+01	32.59	1.31E+02	6.15	
30	846.01	843 -	847	845.71	1.46E+01	18.78	6.28E+01	1.14	
31	860.61	857 -	863	860.31	2.61E+01	25.75	1.02E+02	2.12	
32	911.30	907 -	915	910.97	1.28E+02	39.15	1.56E+02	1.59	
M	33	931.53	930 -	937	931.20	1.27E+01	9.38	2.56E+01	2.00
m	34	934.14	930 -	937	933.80	3.55E+01	23.15	7.13E+01	2.16
35	967.53	960 -	973	967.18	1.14E+02	46.42	1.88E+02	2.37	
M	36	1052.60	1050 -	1060	1052.21	1.92E+01	15.16	3.38E+01	2.33
m	37	1056.81	1050 -	1060	1056.43	1.49E+01	19.38	5.61E+01	2.49
38	1088.74	1083 -	1092	1088.35	2.55E+01	25.04	7.50E+01	3.43	
39	1120.56	1116 -	1125	1120.16	1.66E+02	35.75	8.23E+01	1.99	
40	1220.81	1217 -	1224	1220.36	2.41E+01	23.24	6.98E+01	3.22	

Analysis Report for 1510064-06

CP2211S01-02

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
41	1238.37	1233 -	1243	1237.92	5.04E+01	40.48	1.89E+02	2.10
42	1281.83	1275 -	1287	1281.37	3.44E+01	31.94	1.03E+02	3.80
43	1313.22	1308 -	1318	1312.74	2.10E+01	22.33	5.60E+01	2.23
44	1377.76	1372 -	1381	1377.26	4.51E+01	21.45	3.98E+01	2.54
M 45	1401.52	1393 -	1414	1401.02	1.81E+01	16.61	4.00E+01	2.51
m 46	1407.73	1393 -	1414	1407.23	3.61E+01	18.11	3.18E+01	2.51
47	1441.20	1435 -	1445	1440.68	2.24E+01	20.45	4.32E+01	4.02
48	1460.74	1454 -	1465	1460.21	5.55E+02	52.84	6.99E+01	2.38
49	1509.23	1505 -	1511	1508.69	2.19E+01	14.20	2.03E+01	2.68
50	1519.52	1516 -	1521	1518.98	1.04E+01	8.37	5.23E+00	1.87
51	1582.69	1579 -	1584	1582.14	1.11E+01	13.30	2.59E+01	1.93
52	1661.28	1655 -	1663	1660.70	1.39E+01	12.03	1.41E+01	1.13
53	1685.11	1680 -	1688	1684.53	1.04E+01	11.35	1.33E+01	1.89
54	1729.19	1725 -	1732	1728.60	1.60E+01	13.56	2.00E+01	1.60
55	1764.43	1758 -	1767	1763.82	1.29E+02	24.12	8.32E+00	2.76
56	1847.54	1841 -	1850	1846.91	2.68E+01	14.53	1.43E+01	2.06
57	1923.70	1918 -	1927	1923.06	1.23E+01	10.86	9.41E+00	5.23
58	1946.78	1941 -	1949	1946.13	8.46E+00	9.62	9.08E+00	3.19
59	2118.07	2112 -	2123	2117.39	1.98E+01	11.31	6.39E+00	3.73
60	2203.45	2198 -	2207	2202.75	2.76E+01	16.88	2.48E+01	3.27
61	2262.83	2258 -	2264	2262.13	4.58E+00	6.02	2.83E+00	2.72
62	2294.64	2290 -	2299	2293.94	1.32E+01	13.42	1.36E+01	2.04
63	2614.38	2609 -	2620	2613.64	8.14E+01	20.40	9.12E+00	2.89

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 : 11/3/2015 12:27:31PM

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	52.43	50 -	55	1.27E+02	82.49	1.24E+03	6.52E+01
2	63.62	61 -	67	1.86E+02	103.95	1.83E+03	8.25E+01
3	76.41	73 -	83	1.13E+03	168.50	3.13E+03	1.27E+02
M 4	84.38	83 -	97	6.80E+01	38.25	4.62E+02	3.53E+01
m 5	87.39	83 -	97	2.12E+02	67.44	8.69E+02	4.85E+01

Analysis Report for 1510064-06

CP2211S01-02

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
m	6	89.58	83 -	97	1.44E+02	65.88	8.07E+02	4.67E+01
m	7	92.82	83 -	97	2.64E+02	67.32	7.49E+02	4.50E+01
	8	186.05	182 -	189	2.75E+02	91.78	1.22E+03	7.03E+01
	9	209.11	206 -	212	5.76E+01	68.69	8.17E+02	5.51E+01
M	10	238.84	235 -	244	6.49E+02	72.75	4.92E+02	3.65E+01
m	11	241.99	235 -	244	3.33E+02	60.77	4.51E+02	3.49E+01
	12	269.30	266 -	272	6.07E+01	56.05	5.31E+02	4.43E+01
	13	288.11	285 -	291	4.31E+01	49.70	4.14E+02	3.94E+01
	14	295.32	292 -	298	5.86E+02	69.25	4.49E+02	4.07E+01
	15	338.36	334 -	342	1.22E+02	61.32	5.02E+02	4.70E+01
	16	352.05	348 -	355	1.02E+03	81.09	4.13E+02	4.10E+01
	17	420.32	416 -	424	6.31E+01	48.27	3.20E+02	3.75E+01
	18	463.87	460 -	469	4.24E+01	52.55	3.71E+02	4.19E+01
	19	510.91	506 -	516	1.36E+02	60.24	4.09E+02	4.57E+01
	20	583.31	579 -	587	2.16E+02	48.51	2.27E+02	3.17E+01
	21	609.38	605 -	613	7.75E+02	67.74	2.28E+02	3.17E+01
	22	665.03	661 -	670	3.56E+01	37.96	1.87E+02	2.96E+01
	23	706.20	702 -	708	2.50E+01	27.36	1.16E+02	2.09E+01
M	24	727.40	723 -	738	6.03E+01	25.81	8.34E+01	1.50E+01
m	25	733.43	723 -	738	1.59E+01	21.12	6.90E+01	1.37E+01
	26	768.32	763 -	772	5.98E+01	40.85	2.02E+02	3.11E+01
	27	786.53	782 -	789	3.65E+01	30.85	1.31E+02	2.33E+01
	28	795.08	791 -	799	3.30E+01	33.17	1.50E+02	2.56E+01
	29	807.65	803 -	812	3.76E+01	32.59	1.31E+02	2.48E+01
	30	846.01	843 -	847	1.46E+01	18.78	6.28E+01	1.41E+01
	31	860.61	857 -	863	2.61E+01	25.75	1.02E+02	1.94E+01
	32	911.30	907 -	915	1.28E+02	39.15	1.56E+02	2.63E+01
M	33	931.53	930 -	937	1.27E+01	9.38	2.56E+01	8.32E+00
m	34	934.14	930 -	937	3.55E+01	23.15	7.13E+01	1.39E+01
	35	967.53	960 -	973	1.14E+02	46.42	1.88E+02	3.39E+01
M	36	1052.60	1050 -	1060	1.92E+01	15.16	3.38E+01	9.56E+00
m	37	1056.81	1050 -	1060	1.49E+01	19.38	5.61E+01	1.23E+01
	38	1088.74	1083 -	1092	2.55E+01	25.04	7.50E+01	1.88E+01
	39	1120.56	1116 -	1125	1.66E+02	35.75	8.23E+01	2.04E+01
	40	1220.81	1217 -	1224	2.41E+01	23.24	6.98E+01	1.73E+01
	41	1238.37	1233 -	1243	5.04E+01	40.48	1.89E+02	3.12E+01
	42	1281.83	1275 -	1287	3.44E+01	31.94	1.03E+02	2.44E+01
	43	1313.22	1308 -	1318	2.10E+01	22.33	5.60E+01	1.67E+01
	44	1377.76	1372 -	1381	4.51E+01	21.45	3.98E+01	1.37E+01
M	45	1401.52	1393 -	1414	1.81E+01	16.61	4.00E+01	1.04E+01
m	46	1407.73	1393 -	1414	3.61E+01	18.11	3.18E+01	9.27E+00
	47	1441.20	1435 -	1445	2.24E+01	20.45	4.32E+01	1.49E+01
	48	1460.74	1454 -	1465	5.55E+02	52.84	6.99E+01	1.97E+01
	49	1509.23	1505 -	1511	2.19E+01	14.20	2.03E+01	8.78E+00
	50	1519.52	1516 -	1521	1.04E+01	8.37	5.23E+00	4.39E+00
	51	1582.69	1579 -	1584	1.11E+01	13.30	2.59E+01	9.47E+00
	52	1661.28	1655 -	1663	1.39E+01	12.03	1.41E+01	7.76E+00
	53	1685.11	1680 -	1688	1.04E+01	11.35	1.33E+01	7.68E+00
	54	1729.19	1725 -	1732	1.60E+01	13.56	2.00E+01	9.00E+00
	55	1764.43	1758 -	1767	1.29E+02	24.12	8.32E+00	6.71E+00
	56	1847.54	1841 -	1850	2.68E+01	14.53	1.43E+01	8.37E+00

Analysis Report for 1510064-06

CP2211S01-02

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
57	1923.70	1918 -	1927	1.23E+01	10.86	9.41E+00	6.82E+00
58	1946.78	1941 -	1949	8.46E+00	9.62	9.08E+00	6.30E+00
59	2118.07	2112 -	2123	1.98E+01	11.31	6.39E+00	5.74E+00
60	2203.45	2198 -	2207	2.76E+01	16.88	2.48E+01	1.09E+01
61	2262.83	2258 -	2264	4.58E+00	6.02	2.83E+00	3.48E+00
62	2294.64	2290 -	2299	1.32E+01	13.42	1.36E+01	9.27E+00
63	2614.38	2609 -	2620	8.14E+01	20.40	9.12E+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

PEAK WITH NID REPORT

Peak Analysis Performed on : 11/3/2015 12:27:31PM

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	52.43	50 -	55	52.54	1.27E+02	82.49	1.24E+03	.....
2	63.62	61 -	67	63.72	1.86E+02	103.95	1.83E+03	TH-234 TH-230
3	76.41	73 -	83	76.50	1.13E+03	168.50	3.13E+03	.....
M 4	84.38	83 -	97	84.46	6.80E+01	38.25	4.62E+02	TH-231
m 5	87.39	83 -	97	87.47	2.12E+02	67.44	8.69E+02	SN-126 CD-109 NP-237 EU-155 LU-176
m 6	89.58	83 -	97	89.66	1.44E+02	65.88	8.07E+02	.....
m 7	92.82	83 -	97	92.90	2.64E+02	67.32	7.49E+02	GA-67
8	186.05	182 -	189	186.08	2.75E+02	91.78	1.22E+03	RA-226
9	209.11	206 -	212	209.13	5.76E+01	68.69	8.17E+02	GA-67 CM-243
M 10	238.84	235 -	244	238.84	6.49E+02	72.75	4.92E+02	PB-212
m 11	241.99	235 -	244	241.99	3.33E+02	60.77	4.51E+02	.....
12	269.30	266 -	272	269.28	6.07E+01	56.05	5.31E+02	.....
13	288.11	285 -	291	288.08	4.31E+01	49.70	4.14E+02	.....

Analysis Report for 1510064-06

CP2211S01-02

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
14	295.32	292 -	298	295.28	5.86E+02	69.25	4.49E+02	PB-214
15	338.36	334 -	342	338.31	1.22E+02	61.32	5.02E+02	AC-228
16	352.05	348 -	355	351.98	1.02E+03	81.09	4.13E+02	PB-214
17	420.32	416 -	424	420.23	6.31E+01	48.27	3.20E+02	.....
18	463.87	460 -	469	463.75	4.24E+01	52.55	3.71E+02	SB-125
19	510.91	506 -	516	510.76	1.36E+02	60.24	4.09E+02	.....
20	583.31	579 -	587	583.14	2.16E+02	48.51	2.27E+02	TL-208
21	609.38	605 -	613	609.19	7.75E+02	67.74	2.28E+02	BI-214
22	665.03	661 -	670	664.81	3.56E+01	37.96	1.87E+02	CE-143
23	706.20	702 -	708	705.96	2.50E+01	27.36	1.16E+02	AG-110M
M 24	727.40	723 -	738	727.15	6.03E+01	25.81	8.34E+01	BI-212
m 25	733.43	723 -	738	733.18	1.59E+01	21.12	6.90E+01	PA-234
26	768.32	763 -	772	768.06	5.98E+01	40.85	2.02E+02	.....
27	786.53	782 -	789	786.25	3.65E+01	30.85	1.31E+02	.....
28	795.08	791 -	799	794.80	3.30E+01	33.17	1.50E+02	CS-134
29	807.65	803 -	812	807.37	3.76E+01	32.59	1.31E+02	.....
30	846.01	843 -	847	845.71	1.46E+01	18.78	6.28E+01	CO-56
31	860.61	857 -	863	860.31	2.61E+01	25.75	1.02E+02	TL-208
32	911.30	907 -	915	910.97	1.28E+02	39.15	1.56E+02	AC-228 LU-172
M 33	931.53	930 -	937	931.20	1.27E+01	9.38	2.56E+01	.....
m 34	934.14	930 -	937	933.80	3.55E+01	23.15	7.13E+01	.....
35	967.53	960 -	973	967.18	1.14E+02	46.42	1.88E+02	.....
M 36	1052.60	1050 -	1060	1052.21	1.92E+01	15.16	3.38E+01	.....
m 37	1056.81	1050 -	1060	1056.43	1.49E+01	19.38	5.61E+01	.....
38	1088.74	1083 -	1092	1088.35	2.55E+01	25.04	7.50E+01	.....
39	1120.56	1116 -	1125	1120.16	1.66E+02	35.75	8.23E+01	SC-46 BI-214 TA-182
40	1220.81	1217 -	1224	1220.36	2.41E+01	23.24	6.98E+01	TA-182
41	1238.37	1233 -	1243	1237.92	5.04E+01	40.48	1.89E+02	CO-56
42	1281.83	1275 -	1287	1281.37	3.44E+01	31.94	1.03E+02	.....
43	1313.22	1308 -	1318	1312.74	2.10E+01	22.33	5.60E+01	.....
44	1377.76	1372 -	1381	1377.26	4.51E+01	21.45	3.98E+01	.....
M 45	1401.52	1393 -	1414	1401.02	1.81E+01	16.61	4.00E+01	.....
m 46	1407.73	1393 -	1414	1407.23	3.61E+01	18.11	3.18E+01	EU-152
47	1441.20	1435 -	1445	1440.68	2.24E+01	20.45	4.32E+01	.....
48	1460.74	1454 -	1465	1460.21	5.55E+02	52.84	6.99E+01	K-40
49	1509.23	1505 -	1511	1508.69	2.19E+01	14.20	2.03E+01	.....
50	1519.52	1516 -	1521	1518.98	1.04E+01	8.37	5.23E+00	.....
51	1582.69	1579 -	1584	1582.14	1.11E+01	13.30	2.59E+01	.....
52	1661.28	1655 -	1663	1660.70	1.39E+01	12.03	1.41E+01	.....
53	1685.11	1680 -	1688	1684.53	1.04E+01	11.35	1.33E+01	.....
54	1729.19	1725 -	1732	1728.60	1.60E+01	13.56	2.00E+01	.....
55	1764.43	1758 -	1767	1763.82	1.29E+02	24.12	8.32E+00	BI-214
56	1847.54	1841 -	1850	1846.91	2.68E+01	14.53	1.43E+01	.....
57	1923.70	1918 -	1927	1923.06	1.23E+01	10.86	9.41E+00	.....
58	1946.78	1941 -	1949	1946.13	8.46E+00	9.62	9.08E+00	.....
59	2118.07	2112 -	2123	2117.39	1.98E+01	11.31	6.39E+00	.....
60	2203.45	2198 -	2207	2202.75	2.76E+01	16.88	2.48E+01	BI-214
61	2262.83	2258 -	2264	2262.13	4.58E+00	6.02	2.83E+00	.....
62	2294.64	2290 -	2299	2293.94	1.32E+01	13.42	1.36E+01	.....
63	2614.38	2609 -	2620	2613.64	8.14E+01	20.40	9.12E+00	TL-208

Analysis Report for 1510064-06
CP2211S01-02

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 : 11/3/2015 12:27:31PM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	52.43	1.27E+02	82.49	1.78E-02	1.68E-03
	2	63.62	1.86E+02	103.95	2.39E-02	2.08E-03
	3	76.41	1.13E+03	168.50	2.74E-02	3.35E-03
M	4	84.38	6.80E+01	38.25	2.83E-02	4.14E-03
m	5	87.39	2.12E+02	67.44	2.84E-02	4.44E-03
m	6	89.58	1.44E+02	65.88	2.85E-02	4.44E-03
m	7	92.82	2.64E+02	67.32	2.85E-02	4.29E-03
	8	186.05	2.75E+02	91.78	2.11E-02	1.65E-03
	9	209.11	5.76E+01	68.69	1.95E-02	1.63E-03
M	10	238.84	6.49E+02	72.75	1.79E-02	1.60E-03
m	11	241.99	3.33E+02	60.77	1.77E-02	1.60E-03
	12	269.30	6.07E+01	56.05	1.65E-02	1.57E-03
	13	288.11	4.31E+01	49.70	1.57E-02	1.51E-03
	14	295.32	5.86E+02	69.25	1.55E-02	1.48E-03
	15	338.36	1.22E+02	61.32	1.41E-02	1.27E-03
	16	352.05	1.02E+03	81.09	1.37E-02	1.21E-03
	17	420.32	6.31E+01	48.27	1.21E-02	9.90E-04
	18	463.87	4.24E+01	52.55	1.13E-02	9.46E-04
	19	510.91	1.36E+02	60.24	1.06E-02	8.98E-04
	20	583.31	2.16E+02	48.51	9.58E-03	8.25E-04
	21	609.38	7.75E+02	67.74	9.27E-03	7.98E-04
	22	665.03	3.56E+01	37.96	8.67E-03	7.43E-04
	23	706.20	2.50E+01	27.36	8.28E-03	7.17E-04
M	24	727.40	6.03E+01	25.81	8.09E-03	7.03E-04
m	25	733.43	1.59E+01	21.12	8.03E-03	6.99E-04
	26	768.32	5.98E+01	40.85	7.74E-03	6.77E-04
	27	786.53	3.65E+01	30.85	7.60E-03	6.65E-04
	28	795.08	3.30E+01	33.17	7.53E-03	6.59E-04
	29	807.65	3.76E+01	32.59	7.44E-03	6.51E-04
	30	846.01	1.46E+01	18.78	7.16E-03	6.27E-04
	31	860.61	2.61E+01	25.75	7.07E-03	6.17E-04
	32	911.30	1.28E+02	39.15	6.74E-03	5.87E-04
M	33	931.53	1.27E+01	9.38	6.62E-03	5.76E-04
m	34	934.14	3.55E+01	23.15	6.61E-03	5.75E-04

Analysis Report for 1510064-06
 CP2211S01-02

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	35	967.53	1.14E+02	46.42	6.42E-03	5.58E-04
M	36	1052.60	1.92E+01	15.16	6.00E-03	5.14E-04
m	37	1056.81	1.49E+01	19.38	5.98E-03	5.12E-04
	38	1088.74	2.55E+01	25.04	5.84E-03	4.96E-04
	39	1120.56	1.66E+02	35.75	5.70E-03	4.80E-04
	40	1220.81	2.41E+01	23.24	5.33E-03	4.75E-04
	41	1238.37	5.04E+01	40.48	5.27E-03	4.83E-04
	42	1281.83	3.44E+01	31.94	5.13E-03	5.03E-04
	43	1313.22	2.10E+01	22.33	5.04E-03	5.18E-04
	44	1377.76	4.51E+01	21.45	4.87E-03	5.08E-04
M	45	1401.52	1.81E+01	16.61	4.81E-03	4.98E-04
m	46	1407.73	3.61E+01	18.11	4.79E-03	4.95E-04
	47	1441.20	2.24E+01	20.45	4.72E-03	4.81E-04
	48	1460.74	5.55E+02	52.84	4.67E-03	4.73E-04
	49	1509.23	2.19E+01	14.20	4.57E-03	4.53E-04
	50	1519.52	1.04E+01	8.37	4.55E-03	4.49E-04
	51	1582.69	1.11E+01	13.30	4.44E-03	4.23E-04
	52	1661.28	1.39E+01	12.03	4.32E-03	3.90E-04
	53	1685.11	1.04E+01	11.35	4.28E-03	3.80E-04
	54	1729.19	1.60E+01	13.56	4.23E-03	3.62E-04
	55	1764.43	1.29E+02	24.12	4.19E-03	3.48E-04
	56	1847.54	2.68E+01	14.53	4.10E-03	3.18E-04
	57	1923.70	1.23E+01	10.86	4.04E-03	3.18E-04
	58	1946.78	8.46E+00	9.62	4.03E-03	3.18E-04
	59	2118.07	1.98E+01	11.31	3.95E-03	3.18E-04
	60	2203.45	2.76E+01	16.88	3.93E-03	3.18E-04
	61	2262.83	4.58E+00	6.02	3.93E-03	3.18E-04
	62	2294.64	1.32E+01	13.42	3.93E-03	3.18E-04
	63	2614.38	8.14E+01	20.40	4.05E-03	3.18E-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 : 11/3/2015 12:27:31PM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000028942.CNF

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
1	52.43	1.27E+02	82.49			1.27E+02	8.25E+01

Analysis Report for 1510064-06

CP2211S01-02

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	2	63.62	1.86E+02	103.95	4.34E+01	1.15E+01	1.43E+02	1.05E+02
	3	76.41	1.13E+03	168.50			1.13E+03	1.69E+02
M	4	84.38	6.80E+01	38.25			6.80E+01	3.82E+01
m	5	87.39	2.12E+02	67.44	1.46E+00	7.88E+00	2.11E+02	6.79E+01
m	6	89.58	1.44E+02	65.88			1.44E+02	6.59E+01
m	7	92.82	2.64E+02	67.32	5.70E+01	9.03E+00	2.07E+02	6.79E+01
	8	186.05	2.75E+02	91.78	4.72E+01	7.97E+00	2.28E+02	9.21E+01
	9	209.11	5.76E+01	68.69			5.76E+01	6.87E+01
M	10	238.84	6.49E+02	72.75	2.36E+01	1.35E+01	6.25E+02	7.40E+01
m	11	241.99	3.33E+02	60.77	6.38E+00	3.91E+00	3.27E+02	6.09E+01
	12	269.30	6.07E+01	56.05			6.07E+01	5.60E+01
	13	288.11	4.31E+01	49.70			4.31E+01	4.97E+01
	14	295.32	5.86E+02	69.25	8.57E+00	6.10E+00	5.77E+02	6.95E+01
	15	338.36	1.22E+02	61.32			1.22E+02	6.13E+01
	16	352.05	1.02E+03	81.09	1.40E+01	5.55E+00	1.01E+03	8.13E+01
	17	420.32	6.31E+01	48.27			6.31E+01	4.83E+01
	18	463.87	4.24E+01	52.55			4.24E+01	5.26E+01
	19	510.91	1.36E+02	60.24	8.41E+01	5.50E+00	5.16E+01	6.05E+01
	20	583.31	2.16E+02	48.51	7.32E+00	4.08E+00	2.09E+02	4.87E+01
	21	609.38	7.75E+02	67.74	1.30E+01	3.89E+00	7.62E+02	6.79E+01
	22	665.03	3.56E+01	37.96			3.56E+01	3.80E+01
	23	706.20	2.50E+01	27.36			2.50E+01	2.74E+01
M	24	727.40	6.03E+01	25.81			6.03E+01	2.58E+01
m	25	733.43	1.59E+01	21.12			1.59E+01	2.11E+01
	26	768.32	5.98E+01	40.85			5.98E+01	4.09E+01
	27	786.53	3.65E+01	30.85			3.65E+01	3.09E+01
	28	795.08	3.30E+01	33.17			3.30E+01	3.32E+01
	29	807.65	3.76E+01	32.59			3.76E+01	3.26E+01
	30	846.01	1.46E+01	18.78			1.46E+01	1.88E+01
	31	860.61	2.61E+01	25.75			2.61E+01	2.58E+01
	32	911.30	1.28E+02	39.15	5.60E+00	3.32E+00	1.23E+02	3.93E+01
M	33	931.53	1.27E+01	9.38			1.27E+01	9.38E+00
m	34	934.14	3.55E+01	23.15			3.55E+01	2.32E+01
	35	967.53	1.14E+02	46.42			1.14E+02	4.64E+01
M	36	1052.60	1.92E+01	15.16			1.92E+01	1.52E+01
m	37	1056.81	1.49E+01	19.38			1.49E+01	1.94E+01
	38	1088.74	2.55E+01	25.04			2.55E+01	2.50E+01
	39	1120.56	1.66E+02	35.75	3.93E+00	2.96E+00	1.62E+02	3.59E+01
	40	1220.81	2.41E+01	23.24			2.41E+01	2.32E+01
	41	1238.37	5.04E+01	40.48			5.04E+01	4.05E+01
	42	1281.83	3.44E+01	31.94			3.44E+01	3.19E+01
	43	1313.22	2.10E+01	22.33			2.10E+01	2.23E+01
	44	1377.76	4.51E+01	21.45			4.51E+01	2.14E+01
M	45	1401.52	1.81E+01	16.61			1.81E+01	1.66E+01
m	46	1407.73	3.61E+01	18.11			3.61E+01	1.81E+01
	47	1441.20	2.24E+01	20.45			2.24E+01	2.04E+01
	48	1460.74	5.55E+02	52.84	1.12E+01	2.55E+00	5.44E+02	5.29E+01
	49	1509.23	2.19E+01	14.20			2.19E+01	1.42E+01
	50	1519.52	1.04E+01	8.37			1.04E+01	8.37E+00
	51	1582.69	1.11E+01	13.30			1.11E+01	1.33E+01
	52	1661.28	1.39E+01	12.03			1.39E+01	1.20E+01
	53	1685.11	1.04E+01	11.35			1.04E+01	1.13E+01
	54	1729.19	1.60E+01	13.56			1.60E+01	1.36E+01
	55	1764.43	1.29E+02	24.12	4.23E+00	2.21E+00	1.25E+02	2.42E+01

Analysis Report for 1510064-06

CP2211S01-02

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
56	1847.54	2.68E+01	14.53			2.68E+01	1.45E+01
57	1923.70	1.23E+01	10.86			1.23E+01	1.09E+01
58	1946.78	8.46E+00	9.62			8.46E+00	9.62E+00
59	2118.07	1.98E+01	11.31			1.98E+01	1.13E+01
60	2203.45	2.76E+01	16.88	5.94E-01	1.16E+00	2.70E+01	1.69E+01
61	2262.83	4.58E+00	6.02			4.58E+00	6.02E+00
62	2294.64	1.32E+01	13.42			1.32E+01	1.34E+01
63	2614.38	8.14E+01	20.40	7.38E+00	1.57E+00	7.41E+01	2.05E+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 : 11/3/2015 12:27:31PM
 Ref. Peak Energy : 0.00 Reference Date :
 Peak Ratio : 0.00 Uncertainty : 0.00
 Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000028942.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	52.43	1.27E+02	82.49		1.27E+02	8.25E+01
	2	63.62	1.86E+02	103.95	4.34E+01	1.43E+02	1.05E+02
	3	76.41	1.13E+03	168.50		1.13E+03	1.69E+02
M	4	84.38	6.80E+01	38.25		6.80E+01	3.82E+01
m	5	87.39	2.12E+02	67.44	1.46E+00	7.88E+00	2.11E+02
m	6	89.58	1.44E+02	65.88		1.44E+02	6.59E+01
m	7	92.82	2.64E+02	67.32	5.70E+01	9.03E+00	2.07E+02
	8	186.05	2.75E+02	91.78	4.72E+01	7.97E+00	2.28E+02
	9	209.11	5.76E+01	68.69		5.76E+01	6.87E+01
M	10	238.84	6.49E+02	72.75	2.36E+01	1.35E+01	6.25E+02
m	11	241.99	3.33E+02	60.77	6.38E+00	3.91E+00	3.27E+02
	12	269.30	6.07E+01	56.05		6.07E+01	5.60E+01
	13	288.11	4.31E+01	49.70		4.31E+01	4.97E+01
	14	295.32	5.86E+02	69.25	8.57E+00	6.10E+00	5.77E+02
	15	338.36	1.22E+02	61.32		1.22E+02	6.13E+01
	16	352.05	1.02E+03	81.09	1.40E+01	5.55E+00	1.01E+03
	17	420.32	6.31E+01	48.27		6.31E+01	4.83E+01
	18	463.87	4.24E+01	52.55		4.24E+01	5.26E+01
	19	510.91	1.36E+02	60.24	8.41E+01	5.50E+00	5.16E+01
	20	583.31	2.16E+02	48.51	7.32E+00	4.08E+00	2.09E+02

Analysis Report for 1510064-06

CP2211S01-02

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	21	609.38	7.75E+02	67.74	1.30E+01	3.89E+00	7.62E+02	6.79E+01
	22	665.03	3.56E+01	37.96			3.56E+01	3.80E+01
	23	706.20	2.50E+01	27.36			2.50E+01	2.74E+01
M	24	727.40	6.03E+01	25.81			6.03E+01	2.58E+01
m	25	733.43	1.59E+01	21.12			1.59E+01	2.11E+01
	26	768.32	5.98E+01	40.85			5.98E+01	4.09E+01
	27	786.53	3.65E+01	30.85			3.65E+01	3.09E+01
	28	795.08	3.30E+01	33.17			3.30E+01	3.32E+01
	29	807.65	3.76E+01	32.59			3.76E+01	3.26E+01
	30	846.01	1.46E+01	18.78			1.46E+01	1.88E+01
	31	860.61	2.61E+01	25.75			2.61E+01	2.58E+01
	32	911.30	1.28E+02	39.15	5.60E+00	3.32E+00	1.23E+02	3.93E+01
M	33	931.53	1.27E+01	9.38			1.27E+01	9.38E+00
m	34	934.14	3.55E+01	23.15			3.55E+01	2.32E+01
	35	967.53	1.14E+02	46.42			1.14E+02	4.64E+01
M	36	1052.60	1.92E+01	15.16			1.92E+01	1.52E+01
m	37	1056.81	1.49E+01	19.38			1.49E+01	1.94E+01
	38	1088.74	2.55E+01	25.04			2.55E+01	2.50E+01
	39	1120.56	1.66E+02	35.75	3.93E+00	2.96E+00	1.62E+02	3.59E+01
	40	1220.81	2.41E+01	23.24			2.41E+01	2.32E+01
	41	1238.37	5.04E+01	40.48			5.04E+01	4.05E+01
	42	1281.83	3.44E+01	31.94			3.44E+01	3.19E+01
	43	1313.22	2.10E+01	22.33			2.10E+01	2.23E+01
	44	1377.76	4.51E+01	21.45			4.51E+01	2.14E+01
M	45	1401.52	1.81E+01	16.61			1.81E+01	1.66E+01
m	46	1407.73	3.61E+01	18.11			3.61E+01	1.81E+01
	47	1441.20	2.24E+01	20.45			2.24E+01	2.04E+01
	48	1460.74	5.55E+02	52.84	1.12E+01	2.55E+00	5.44E+02	5.29E+01
	49	1509.23	2.19E+01	14.20			2.19E+01	1.42E+01
	50	1519.52	1.04E+01	8.37			1.04E+01	8.37E+00
	51	1582.69	1.11E+01	13.30			1.11E+01	1.33E+01
	52	1661.28	1.39E+01	12.03			1.39E+01	1.20E+01
	53	1685.11	1.04E+01	11.35			1.04E+01	1.13E+01
	54	1729.19	1.60E+01	13.56			1.60E+01	1.36E+01
	55	1764.43	1.29E+02	24.12	4.23E+00	2.21E+00	1.25E+02	2.42E+01
	56	1847.54	2.68E+01	14.53			2.68E+01	1.45E+01
	57	1923.70	1.23E+01	10.86			1.23E+01	1.09E+01
	58	1946.78	8.46E+00	9.62			8.46E+00	9.62E+00
	59	2118.07	1.98E+01	11.31			1.98E+01	1.13E+01
	60	2203.45	2.76E+01	16.88	5.94E-01	1.16E+00	2.70E+01	1.69E+01
	61	2262.83	4.58E+00	6.02			4.58E+00	6.02E+00
	62	2294.64	1.32E+01	13.42			1.32E+01	1.34E+01
	63	2614.38	8.14E+01	20.40	7.38E+00	1.57E+00	7.41E+01	2.05E+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 1510064-06

CP2211S01-02

NUCLIDE IDENTIFICATION REPORT

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

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.999	1460.81 *	10.67	1.34E+01	1.90E+00
CO-56	0.651	846.75 *	99.96	3.20E-02	4.13E-02
		1037.75	14.03		
		1238.25 *	67.00	2.24E-01	1.81E-01
		1771.40	15.51		
		2598.48	16.90		
GA-67	0.409	93.31 *	35.70	9.98E+01	3.85E+02
		208.95 *	2.24	6.44E+02	2.49E+03
		300.22	16.00		
CD-109	0.935	88.03 *	3.72	2.55E+00	9.25E-01
SN-126	0.995	87.57 *	37.00	2.46E-01	8.79E-02
TL-208	0.991	583.14 *	30.22	8.84E-01	2.20E-01
		860.37 *	4.48	1.01E+00	1.00E+00
		2614.66 *	35.85	6.25E-01	1.79E-01
BI-212	0.759	727.17 *	11.80	7.75E-01	3.38E-01
		1620.62	2.75		
PB-212	0.887	238.63 *	44.60	9.62E-01	1.43E-01
		300.09	3.41		
BI-214	0.991	609.31 *	46.30	2.18E+00	2.69E-01
		1120.29 *	15.10	2.30E+00	5.46E-01
		1764.49 *	15.80	2.31E+00	4.88E-01
		2204.22 *	4.98	1.69E+00	1.07E+00
PB-214	0.998	295.21 *	19.19	2.38E+00	3.66E-01
		351.92 *	37.19	2.42E+00	2.89E-01
RA-226	0.996	186.21 *	3.28	4.04E+00	7.58E+00
AC-228	0.567	338.32 *	11.40	9.32E-01	4.75E-01
		911.07 *	27.70	8.03E-01	2.67E-01
		969.11	16.60		
TH-231	0.610	25.64	14.70		
		84.21 *	6.40	4.60E-01	2.68E-01
TH-234	0.983	63.29 *	3.80	1.93E+00	1.42E+00
NP-237	0.883	86.50 *	12.60	7.21E-01	2.58E-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 1510064-06
 CP2211S01-02

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/3/2015 12:27:31PM
 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	52.43	3.53815E-02	32.38		
3	76.41	3.14613E-01	7.44		
m 6	89.58	3.99830E-02	22.88		
m 11	241.99	9.07560E-02	9.32		
12	269.30	1.68643E-02	46.16		
13	288.11	1.19611E-02	57.71		
17	420.32	1.75230E-02	38.26		
18	463.87	1.17788E-02	61.97		
19	510.91	1.43321E-02	58.62		
22	665.03	9.89987E-03	53.26	Tol.	CE-143
23	706.20	6.94946E-03	54.68	Tol.	AG-110M
m 25	733.43	4.40460E-03	66.59	Tol.	PA-234
26	768.32	1.66244E-02	34.13		
27	786.53	1.01253E-02	42.32		
28	795.08	9.17824E-03	50.19	Sum	
29	807.65	1.04504E-02	43.31		
M 33	931.53	3.52836E-03	36.93		
m 34	934.14	9.85163E-03	32.64	Sum	
35	967.53	3.17054E-02	20.34		
M 36	1052.60	5.32640E-03	39.52		
m 37	1056.81	4.12661E-03	65.24		
38	1088.74	7.08554E-03	49.08		
40	1220.81	6.69021E-03	48.24	Tol.	TA-182
42	1281.83	9.56718E-03	46.36		
43	1313.22	5.83900E-03	53.11		
44	1377.76	1.25256E-02	23.78		
M 45	1401.52	5.02666E-03	45.90		
m 46	1407.73	1.00391E-02	25.06	Tol.	EU-152
47	1441.20	6.22475E-03	45.62		
49	1509.23	6.07639E-03	32.45		
50	1519.52	2.88462E-03	40.28		
51	1582.69	3.07292E-03	60.13		
52	1661.28	3.86905E-03	43.19		
53	1685.11	2.87582E-03	54.80		
54	1729.19	4.44444E-03	42.39	Sum	
56	1847.54	7.45506E-03	27.06	Sum	
57	1923.70	3.41503E-03	44.18		
58	1946.78	2.35043E-03	56.83		
59	2118.07	5.50121E-03	28.56		
61	2262.83	1.27315E-03	65.68		
62	2294.64	3.66667E-03	50.82		

Analysis Report for 1510064-06

CP2211S01-02

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

NUCLIDE IDENTIFICATION REPORT

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

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.99	1460.81 *	10.67	1.34E+01	1.90E+00
CO-56	0.65	846.75 *	99.96	3.20E-02	4.13E-02
		1037.75	14.03		
		1238.25 *	67.00	2.24E-01	1.81E-01
		1771.40	15.51		
GA-67	0.40	2598.48	16.90		
		93.31 *	35.70	9.98E+01	3.85E+02
		208.95 *	2.24	6.44E+02	2.49E+03
		300.22	16.00		
CD-109	0.93	88.03 *	3.72	2.55E+00	9.25E-01
SN-126	0.99	87.57 *	37.00	2.46E-01	8.79E-02
TL-208	0.99	583.14 *	30.22	8.84E-01	2.20E-01
		860.37 *	4.48	1.01E+00	1.00E+00
		2614.66 *	35.85	6.25E-01	1.79E-01
BI-212	0.75	727.17 *	11.80	7.75E-01	3.38E-01
		1620.62	2.75		
PB-212	0.88	238.63 *	44.60	9.62E-01	1.43E-01
		300.09	3.41		
BI-214	0.99	609.31 *	46.30	2.18E+00	2.69E-01
		1120.29 *	15.10	2.30E+00	5.46E-01
		1764.49 *	15.80	2.31E+00	4.88E-01
		2204.22 *	4.98	1.69E+00	1.07E+00
PB-214	0.99	295.21 *	19.19	2.38E+00	3.66E-01
		351.92 *	37.19	2.42E+00	2.89E-01
RA-226	0.99	186.21 *	3.28	4.04E+00	7.58E+00
AC-228	0.56	338.32 *	11.40	9.32E-01	4.75E-01
		911.07 *	27.70	8.03E-01	2.67E-01
		969.11	16.60		
TH-231	0.61	25.64	14.70		
		84.21 *	6.40	4.60E-01	2.68E-01
TH-234	0.98	63.29 *	3.80	1.93E+00	1.42E+00
NP-237	0.88	86.50 *	12.60	7.21E-01	2.58E-01

Analysis Report for 1510064-06

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

INTERFERENCE CORRECTED REPORT

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
K-40	0.999	1.34E+01	1.90E+00	
CO-56	0.651	4.15E-02	4.02E-02	
GA-67	0.409	1.12E+02	4.28E+02	
? CD-109	0.935	2.55E+00	9.25E-01	
? SN-126	0.995	2.46E-01	8.79E-02	
TL-208	0.991	7.34E-01	1.38E-01	
BI-212	0.759	7.75E-01	3.38E-01	
PB-212	0.887	9.62E-01	1.43E-01	
BI-214	0.991	2.20E+00	2.12E-01	
PB-214	0.998	2.41E+00	2.27E-01	
RA-226	0.996	4.04E+00	7.58E+00	
AC-228	0.567	8.34E-01	2.33E-01	
TH-231	0.610	4.60E-01	2.68E-01	
TH-234	0.983	1.93E+00	1.42E+00	
? NP-237	0.883	7.21E-01	2.58E-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 1510064-06
CP2211S01-02

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/3/2015 12:27:31PM
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	52.43	3.53815E-02	32.38		
3	76.41	3.14613E-01	7.44		
m 6	89.58	3.99830E-02	22.88		
m 11	241.99	9.07560E-02	9.32		
12	269.30	1.68643E-02	46.16		
13	288.11	1.19611E-02	57.71		
17	420.32	1.75230E-02	38.26		
18	463.87	1.17788E-02	61.97		
19	510.91	1.43321E-02	58.62		
22	665.03	9.89987E-03	53.26	Tol.	CE-143
23	706.20	6.94946E-03	54.68	Tol.	AG-110M
m 25	733.43	4.40460E-03	66.59	Tol.	PA-234
26	768.32	1.66244E-02	34.13		
27	786.53	1.01253E-02	42.32		
28	795.08	9.17824E-03	50.19	Sum	
29	807.65	1.04504E-02	43.31		
M 33	931.53	3.52836E-03	36.93		
m 34	934.14	9.85163E-03	32.64	Sum	
35	967.53	3.17054E-02	20.34		
M 36	1052.60	5.32640E-03	39.52		
m 37	1056.81	4.12661E-03	65.24		
38	1088.74	7.08554E-03	49.08		
40	1220.81	6.69021E-03	48.24	Tol.	TA-182
42	1281.83	9.56718E-03	46.36		
43	1313.22	5.83900E-03	53.11		
44	1377.76	1.25256E-02	23.78		
M 45	1401.52	5.02666E-03	45.90		
m 46	1407.73	1.00391E-02	25.06	Tol.	EU-152
47	1441.20	6.22475E-03	45.62		
49	1509.23	6.07639E-03	32.45		
50	1519.52	2.88462E-03	40.28		
51	1582.69	3.07292E-03	60.13		
52	1661.28	3.86905E-03	43.19		
53	1685.11	2.87582E-03	54.80		
54	1729.19	4.44444E-03	42.39	Sum	

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Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
56	1847.54	7.45506E-03	27.06	Sum	
57	1923.70	3.41503E-03	44.18		
58	1946.78	2.35043E-03	56.83		
59	2118.07	5.50121E-03	28.56		
61	2262.83	1.27315E-03	65.68		
62	2294.64	3.66667E-03	50.82		

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

NUCLIDE MDA REPORT

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

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	BE-7	477.59	10.42	-5.86E-01	6.32E-01	6.32E-01
+	NA-22	1274.54	99.94	3.56E-03	6.63E-02	6.63E-02
+	NA-24	1368.53	99.99	8.54E+11	8.13E+11	2.26E+12
		2754.09	99.86	1.10E+11		8.13E+11
+	AL-26	1808.65	99.76	-2.05E-02	5.17E-02	5.17E-02
+	K-40	1460.81	*	1.34E+01	1.08E+00	1.08E+00
+	@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88	94.40	-7.20E-04	4.96E-02	4.96E-02
		78.34	96.00	2.99E-01		7.33E-02
+	SC-46	889.25	99.98	-2.95E-02	8.29E-02	8.29E-02
		1120.51	99.99	4.08E-01		1.81E-01
+	V-48	983.52	99.98	1.06E-01	2.59E-01	2.75E-01
		1312.10	97.50	1.05E-01		2.59E-01
+	CR-51	320.08	9.83	4.31E-01	1.03E+00	1.03E+00
+	MN-54	834.83	99.97	-3.52E-03	8.12E-02	8.12E-02
+	CO-56	846.75	*	3.20E-02	6.78E-02	6.78E-02
		1037.75	14.03	3.62E-01		7.09E-01
		1238.25	*	2.24E-01		2.89E-01
		1771.40	15.51	-4.63E-01		4.39E-01
		2598.48	16.90	3.45E-02		3.24E-01
+	CO-57	122.06	85.51	3.42E-03	5.84E-02	5.84E-02
		136.48	10.60	-1.18E-02		4.67E-01
+	CO-58	810.76	99.40	-3.07E-02	9.12E-02	9.12E-02

Analysis Report for 1510064-06

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	FE-59	1099.22	56.50	-4.97E-02	1.97E-01	1.97E-01
		1291.56	43.20	-5.29E-02		2.07E-01
+	CO-60	1173.22	100.00	-3.81E-02	6.09E-02	7.63E-02
		1332.49	100.00	-5.20E-02		6.09E-02
+	ZN-65	1115.52	50.75	3.09E-02	1.64E-01	1.64E-01
+	GA-67	93.31	* 35.70	9.98E+01	1.26E+02	1.26E+02
		208.95	* 2.24	6.44E+02		1.26E+03
		300.22	16.00	9.43E+01		1.38E+02
+	SE-75	121.11	16.70	9.16E-02	8.99E-02	3.27E-01
		136.00	59.20	-5.00E-02		8.99E-02
		264.65	59.80	4.11E-02		1.00E-01
		279.53	25.20	7.67E-02		2.46E-01
		400.65	11.40	-3.78E-02		5.37E-01
+	RB-82	776.52	13.00	-3.58E-01	9.48E-01	9.48E-01
+	RB-83	520.41	46.00	-5.05E-02	1.22E-01	1.22E-01
		529.64	30.30	-8.27E-02		1.95E-01
		552.65	16.40	-4.06E-02		3.78E-01
+	KR-85	513.99	0.43	-8.42E+00	1.41E+01	1.41E+01
+	SR-85	513.99	99.27	-4.95E-02	8.31E-02	8.31E-02
+	Y-88	898.02	93.40	3.66E-02	7.46E-02	9.41E-02
		1836.01	99.38	2.14E-02		7.46E-02
+	NB-93M	16.57	9.43	-5.98E+03	4.95E+03	4.95E+03
+	NB-94	702.63	100.00	1.55E-02	6.18E-02	6.72E-02
		871.10	100.00	-3.06E-02		6.18E-02
+	NB-95	765.79	99.81	1.55E-01	1.55E-01	1.55E-01
+	NB-95M	235.69	25.00	-3.76E+02	6.53E+01	6.53E+01
+	ZR-95	724.18	43.70	-3.48E-02	1.56E-01	2.29E-01
		756.72	55.30	1.92E-03		1.56E-01
+	MO-99	181.06	6.20	3.88E+02	5.73E+02	1.03E+03
		739.58	12.80	5.11E+00		5.73E+02
		778.00	4.50	-1.90E+02		1.64E+03
+	RU-103	497.08	89.00	-2.09E-02	9.14E-02	9.14E-02
+	RU-106	621.84	9.80	2.31E-01	6.62E-01	6.62E-01
+	AG-108M	433.93	89.90	1.25E-02	5.71E-02	5.71E-02
		614.37	90.40	-6.59E-03		7.11E-02
		722.95	90.50	-2.86E-03		7.34E-02
+	CD-109	88.03	* 3.72	2.55E+00	3.16E+00	3.16E+00
+	AG-110M	657.75	93.14	4.13E-04	7.12E-02	7.12E-02
		677.61	10.53	2.16E-01		6.86E-01
		706.67	16.46	7.30E-02		4.34E-01
		763.93	21.98	2.56E-02		3.63E-01
		884.67	71.63	-7.67E-02		9.62E-02
		1384.27	23.94	1.37E-01		3.07E-01
+	CD-113M	263.70	0.02	1.53E+01	2.09E+02	2.09E+02
+	SN-113	255.12	1.93	-1.54E+00	9.42E-02	3.16E+00
		391.69	64.90	-1.00E-02		9.42E-02
+	TE123M	159.00	84.10	5.29E-03	7.14E-02	7.14E-02

Analysis Report for 1510064-06

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	SB-124	602.71	97.87	3.53E-02	9.62E-02	9.62E-02
		645.85	7.26	1.13E-02		1.11E+00
		722.78	11.10	-3.22E-02		8.28E-01
		1691.02	49.00	-1.62E-02		1.77E-01
+	I-125	35.49	6.49	1.24E+00	5.35E+00	5.35E+00
+	SB-125	176.33	6.89	-2.35E-01	1.94E-01	7.42E-01
		427.89	29.33	7.11E-02		1.94E-01
		463.38	10.35	3.11E-01		5.96E-01
		600.56	17.80	1.46E-01		4.00E-01
		635.90	11.32	9.18E-03		5.48E-01
+	SB-126	414.70	83.30	6.38E-02	3.03E-01	3.03E-01
		666.33	99.60	1.49E-01		3.32E-01
		695.00	99.60	-5.49E-02		3.07E-01
		720.50	53.80	-2.19E-01		5.43E-01
+	SN-126	87.57	* 37.00	2.46E-01	3.04E-01	3.04E-01
+	SB-127	473.00	25.00	8.13E+00	2.83E+01	3.27E+01
		685.20	35.70	5.44E+00		2.83E+01
		783.80	14.70	6.82E+01		8.40E+01
+	I-129	29.78	57.00	4.24E-01	1.16E+00	1.16E+00
		33.60	13.20	-7.62E-01		2.40E+00
		39.58	7.52	-8.11E-01		1.93E+00
+	I-131	284.30	6.05	4.69E-01	6.36E-01	9.08E+00
		364.48	81.20	3.18E-01		6.36E-01
		636.97	7.26	-2.09E+00		9.13E+00
		722.89	1.80	-1.63E+00		4.19E+01
+	TE-132	49.72	13.10	-8.38E+01	2.44E+01	2.18E+02
		228.16	88.00	5.85E+00		2.44E+01
+	BA-133	81.00	33.00	8.32E-02	8.68E-02	1.27E-01
		302.84	17.80	-8.28E-02		2.94E-01
		356.01	60.00	8.36E-03		8.68E-02
+	I-133	529.87	86.30	-1.06E+08	3.51E+08	3.51E+08
+	XE-133	81.00	38.00	2.98E+00	4.54E+00	4.54E+00
+	CS-134	563.23	8.38	-1.26E-01	9.35E-02	6.35E-01
		569.32	15.43	-7.12E-02		3.57E-01
		604.70	97.60	8.29E-03		9.80E-02
		795.84	85.40	7.06E-02		9.35E-02
		801.93	8.73	1.60E-01		7.57E-01
+	CS-135	268.24	16.00	-6.32E-02	3.40E-01	3.40E-01
+	@ 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	6.11E-01	2.79E-01	2.97E+00
		163.89	4.61	-3.78E+00		4.67E+00
		176.55	13.56	-3.34E-01		1.63E+00
		273.65	12.66	-4.07E-01		1.80E+00
		340.57	48.50	-2.20E-01		5.41E-01
		818.50	99.70	-6.17E-02		2.79E-01
		1048.07	79.60	7.62E-02		3.37E-01
		1235.34	19.70	1.53E+00		2.65E+00

Analysis Report for 1510064-06

CP2211S01-02

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	CS-137	661.65	85.12	-1.03E-02	7.12E-02	7.12E-02
+	LA-138	788.74	34.00	1.18E-01	9.02E-02	2.20E-01
		1435.80	66.00	-4.21E-03		9.02E-02
+	CE-139	165.85	80.35	-1.59E-02	7.10E-02	7.10E-02
+	BA-140	162.64	6.70	3.69E-01	9.41E-01	3.43E+00
		304.84	4.50	6.10E-01		5.02E+00
		423.70	3.20	-1.62E+00		7.53E+00
		437.55	2.00	-5.13E+00		1.05E+01
		537.32	25.00	-1.71E-01		9.41E-01
+	LA-140	328.77	20.50	4.32E-01	3.88E-01	1.24E+00
		487.03	45.50	5.24E-02		5.29E-01
		815.85	23.50	-4.93E-01		1.19E+00
		1596.49	95.49	2.13E-01		3.88E-01
+	CE-141	145.44	48.40	2.04E-01	1.96E-01	1.96E-01
+	CE-143	57.36	11.80	-1.18E+05	3.01E+05	6.20E+05
		293.26	42.00	-5.55E+02		3.01E+05
		664.55	5.20	1.38E+06		1.96E+06
+	CE-144	133.54	10.80	2.06E-01	4.55E-01	4.55E-01
+	PM-144	476.78	42.00	-1.06E-01	6.19E-02	1.15E-01
		618.01	98.60	-6.43E-03		6.19E-02
		696.49	99.49	-2.66E-02		6.72E-02
+	PM-145	36.85	21.70	5.13E-01	4.98E-01	9.69E-01
		37.36	39.70	2.63E-01		4.98E-01
		42.30	15.10	-1.41E-01		7.95E-01
		72.40	2.31	6.62E-01		2.09E+00
+	PM-146	453.90	39.94	3.26E-02	1.33E-01	1.33E-01
		735.90	14.01	8.02E-02		4.34E-01
		747.13	13.10	1.47E-01		5.44E-01
+	ND-147	91.11	28.90	-7.71E-01	1.25E+00	1.25E+00
		531.02	13.10	4.52E-01		2.36E+00
+	PM-149	285.90	3.10	5.53E+03	1.14E+04	1.14E+04
+	EU-152	121.78	20.50	1.33E-02	2.27E-01	2.27E-01
		244.69	5.40	2.81E-01		1.07E+00
		344.27	19.13	-1.28E-01		2.58E-01
		778.89	9.20	-6.98E-02		6.92E-01
		964.01	10.40	-1.52E+00		8.09E-01
		1085.78	7.22	2.05E-01		9.67E-01
		1112.02	9.60	2.88E-01		8.10E-01
		1407.95	14.94	3.24E-01		5.70E-01
+	GD-153	97.43	31.30	3.26E-02	1.54E-01	1.54E-01
		103.18	22.20	-1.74E-01		2.16E-01
+	EU-154	123.07	40.50	3.44E-02	1.16E-01	1.16E-01
		723.30	19.70	-1.32E-02		3.39E-01
		873.19	11.50	2.69E-01		5.90E-01
		996.32	10.30	-8.39E-02		7.28E-01
		1004.76	17.90	-1.41E-01		3.90E-01
		1274.45	35.50	9.89E-03		1.84E-01
+	EU-155	86.50	30.90	-3.70E-02	1.97E-01	1.97E-01
		105.30	20.70	1.79E-01		2.20E-01

Analysis Report for 1510064-06

CP2211S01-02

	<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>
+	EU-156	811.77	10.40	4.40E-02	2.31E+00	2.31E+00
		1153.47	7.20	2.05E+00		4.87E+00
		1230.71	8.90	1.62E+00		3.59E+00
+	HO-166M	184.41	72.60	6.25E-02	9.32E-02	9.32E-02
		280.45	29.60	5.56E-02		1.79E-01
		410.94	11.10	-1.61E-01		4.92E-01
		711.69	54.10	-5.51E-02		1.12E-01
+	TM-171	66.72	0.14	-4.72E+00	3.48E+01	3.48E+01
+	HF-172	81.75	4.52	2.16E-01	4.13E-01	8.99E-01
		125.81	11.30	-4.48E-01		4.13E-01
+	LU-172	181.53	20.60	7.42E-01	2.22E+00	4.78E+00
		810.06	16.63	-2.57E+00		7.63E+00
		912.12	15.25	2.71E+01		1.46E+01
+	LU-173	1093.66	62.50	-1.02E-01		2.22E+00
		100.72	5.24	-2.59E-01	2.82E-01	8.92E-01
		272.11	21.20	2.70E-02		2.82E-01
+	HF-175	343.40	84.00	3.69E-02	8.09E-02	8.09E-02
+	LU-176	88.34	13.30	8.82E-01	5.16E-02	4.64E-01
		201.83	86.00	-9.78E-03		6.10E-02
		306.78	94.00	-1.03E-02		5.16E-02
+	TA-182	67.75	41.20	-1.96E-03	1.35E-01	1.35E-01
		1121.30	34.90	1.22E+00		4.91E-01
		1189.05	16.23	-3.12E-01		5.41E-01
		1221.41	26.98	2.36E-01		3.70E-01
		1231.02	11.44	3.68E-01		9.65E-01
+	IR-192	308.46	29.68	1.03E-02	1.47E-01	2.12E-01
		468.07	48.10	3.41E-03		1.47E-01
+	HG-203	279.19	77.30	4.80E-02	1.06E-01	1.06E-01
+	BI-207	569.67	97.72	-1.10E-02	5.50E-02	5.50E-02
		1063.62	74.90	-4.96E-03		8.22E-02
+	TL-208	583.14	* 30.22	8.84E-01	1.76E-01	2.84E-01
		860.37	* 4.48	1.01E+00		1.61E+00
		2614.66	* 35.85	6.25E-01		1.76E-01
+	BI-210M	262.00	45.00	-6.37E-03	1.13E-01	1.13E-01
		300.00	23.00	1.64E-01		2.40E-01
+	PB-210	46.50	4.25	4.46E+00	2.42E+00	2.42E+00
+	PB-211	404.84	2.90	-3.12E-01	1.93E+00	1.93E+00
		831.96	2.90	-1.09E+00		2.45E+00
+	BI-212	727.17	* 11.80	7.75E-01	9.39E-01	9.39E-01
		1620.62	2.75	3.17E-01		2.69E+00
+	PB-212	238.63	* 44.60	9.62E-01	2.03E-01	2.03E-01
		300.09	3.41	1.11E+00		1.62E+00
+	BI-214	609.31	* 46.30	2.18E+00	1.93E-01	1.93E-01
		1120.29	* 15.10	2.30E+00		6.30E-01
		1764.49	* 15.80	2.31E+00		3.37E-01
		2204.22	* 4.98	1.69E+00		1.54E+00
+	PB-214	295.21	* 19.19	2.38E+00	2.07E-01	3.52E-01
		351.92	* 37.19	2.42E+00		2.07E-01

Analysis Report for 1510064-06

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	RN-219	401.80	6.50	5.94E-02	8.01E-01	8.01E-01
+	RA-223	323.87	3.88	-5.25E-01	1.18E+00	1.18E+00
+	RA-224	240.98	3.95	8.80E+00	2.67E+00	2.67E+00
+	RA-225	40.00	31.00	-7.06E-01	1.68E+00	1.68E+00
+	RA-226	186.21	* 3.28	4.04E+00	2.58E+00	2.58E+00
+	TH-227	50.10	8.40	-3.20E-01	6.35E-01	8.31E-01
		236.00	11.50	-3.65E+00		6.35E-01
		256.20	6.30	-5.55E-02		8.35E-01
+	AC-228	338.32	* 11.40	9.32E-01	3.68E-01	7.38E-01
		911.07	* 27.70	8.03E-01		3.68E-01
		969.11	16.60	5.62E-01		6.41E-01
+	TH-230	48.44	16.90	-2.48E-01	4.54E-01	4.54E-01
		62.85	4.60	2.33E+00		1.30E+00
		67.67	0.37	-1.84E-01		1.27E+01
+	PA-231	283.67	1.60	1.56E-01	2.26E+00	3.02E+00
		302.67	2.30	-6.38E-01		2.26E+00
+	TH-231	25.64	14.70	7.94E+00	1.74E+00	1.38E+01
		84.21	* 6.40	4.60E-01		1.74E+00
+	PA-233	311.98	38.60	-1.05E-01	2.62E-01	2.62E-01
+	PA-234	131.20	20.40	2.14E-01	2.38E-01	2.38E-01
		733.99	8.80	3.89E-01		7.07E-01
		946.00	12.00	-1.73E-03		5.76E-01
+	PA-234M	1001.03	0.92	2.22E+00	8.45E+00	8.45E+00
+	TH-234	63.29	* 3.80	1.93E+00	2.30E+00	2.30E+00
+	U-235	143.76	10.50	2.89E-01	4.89E-01	4.89E-01
		163.35	4.70	1.14E-01		1.07E+00
		205.31	4.70	3.46E-01		1.10E+00
+	NP-237	86.50	* 12.60	7.21E-01	8.94E-01	8.94E-01
+	NP-239	106.10	22.70	2.40E+01	7.84E+02	7.84E+02
		228.18	10.70	4.79E+02		2.00E+03
		277.60	14.10	2.17E+02		1.50E+03
+	AM-241	59.54	35.90	5.38E-02	1.43E-01	1.43E-01
+	AM-243	74.67	66.00	-2.65E-01	9.86E-02	9.86E-02
+	CM-243	209.75	3.29	9.59E-01	3.78E-01	1.73E+00
		228.14	10.60	1.21E-01		5.06E-01
		277.60	14.00	5.48E-02		3.78E-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 1510064-06

CP2211S01-02

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	6.32E-01	6.32E-01	-5.86E-01	2.95E-01
NA-22	1274.54	99.94	6.63E-02	6.63E-02	3.56E-03	2.99E-02
NA-24	1368.53	99.99	2.26E+12	8.13E+11	8.54E+11	1.00E+12
	2754.09	99.86	8.13E+11		1.10E+11	2.57E+11
AL-26	1808.65	99.76	5.17E-02	5.17E-02	-2.05E-02	2.18E-02
+ K-40	1460.81	* 10.67	1.08E+00	1.08E+00	1.34E+01	5.05E-01
@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26	1.00E+20
TI-44	67.88	94.40	4.96E-02	4.96E-02	-7.20E-04	2.41E-02
	78.34	96.00	7.33E-02		2.99E-01	3.60E-02
SC-46	889.25	99.98	8.29E-02	8.29E-02	-2.95E-02	3.84E-02
	1120.51	99.99	1.81E-01		4.08E-01	8.70E-02
V-48	983.52	99.98	2.75E-01	2.59E-01	1.06E-01	1.29E-01
	1312.10	97.50	2.59E-01		1.05E-01	1.18E-01
CR-51	320.08	9.83	1.03E+00	1.03E+00	4.31E-01	4.91E-01
MN-54	834.83	99.97	8.12E-02	8.12E-02	-3.52E-03	3.82E-02
+ CO-56	846.75	* 99.96	6.78E-02	6.78E-02	3.20E-02	3.09E-02
	1037.75	14.03	7.09E-01		3.62E-01	3.30E-01
	1238.25	* 67.00	2.89E-01		2.24E-01	1.39E-01
	1771.40	15.51	4.39E-01		-4.63E-01	1.87E-01
	2598.48	16.90	3.24E-01		3.45E-02	1.31E-01
CO-57	122.06	85.51	5.84E-02	5.84E-02	3.42E-03	2.84E-02
	136.48	10.60	4.67E-01		-1.18E-02	2.27E-01
CO-58	810.76	99.40	9.12E-02	9.12E-02	-3.07E-02	4.26E-02
FE-59	1099.22	56.50	1.97E-01	1.97E-01	-4.97E-02	9.05E-02
	1291.56	43.20	2.07E-01		-5.29E-02	9.17E-02
CO-60	1173.22	100.00	7.63E-02	6.09E-02	-3.81E-02	3.51E-02
	1332.49	100.00	6.09E-02		-5.20E-02	2.71E-02
ZN-65	1115.52	50.75	1.64E-01	1.64E-01	3.09E-02	7.59E-02
+ GA-67	93.31	* 35.70	1.26E+02	1.26E+02	9.98E+01	6.22E+01
	208.95	* 2.24	1.26E+03		6.44E+02	6.17E+02
	300.22	16.00	1.38E+02		9.43E+01	6.61E+01
SE-75	121.11	16.70	3.27E-01	8.99E-02	9.16E-02	1.59E-01
	136.00	59.20	8.99E-02		-5.00E-02	4.37E-02
	264.65	59.80	1.00E-01		4.11E-02	4.81E-02
	279.53	25.20	2.46E-01		7.67E-02	1.18E-01
	400.65	11.40	5.37E-01		-3.78E-02	2.55E-01
RB-82	776.52	13.00	9.48E-01	9.48E-01	-3.58E-01	4.38E-01
RB-83	520.41	46.00	1.22E-01	1.22E-01	-5.05E-02	5.68E-02
	529.64	30.30	1.95E-01		-8.27E-02	9.10E-02
	552.65	16.40	3.78E-01		-4.06E-02	1.76E-01

Analysis Report for 1510064-06

CP2211S01-02

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	1.41E+01	1.41E+01	-8.42E+00	6.70E+00
SR-85	513.99	99.27	8.31E-02	8.31E-02	-4.95E-02	3.94E-02
Y-88	898.02	93.40	9.41E-02	7.46E-02	3.66E-02	4.39E-02
	1836.01	99.38	7.46E-02		2.14E-02	3.24E-02
NB-93M	16.57	9.43	4.95E+03	4.95E+03	-5.98E+03	2.41E+03
NB-94	702.63	100.00	6.72E-02	6.18E-02	1.55E-02	3.16E-02
	871.10	100.00	6.18E-02		-3.06E-02	2.85E-02
NB-95	765.79	99.81	1.55E-01	1.55E-01	1.55E-01	7.38E-02
NB-95M	235.69	25.00	6.53E+01	6.53E+01	-3.76E+02	3.18E+01
ZR-95	724.18	43.70	2.29E-01	1.56E-01	-3.48E-02	1.08E-01
	756.72	55.30	1.56E-01		1.92E-03	7.30E-02
MO-99	181.06	6.20	1.03E+03	5.73E+02	3.88E+02	5.02E+02
	739.58	12.80	5.73E+02		5.11E+00	2.67E+02
	778.00	4.50	1.64E+03		-1.90E+02	7.64E+02
RU-103	497.08	89.00	9.14E-02	9.14E-02	-2.09E-02	4.28E-02
RU-106	621.84	9.80	6.62E-01	6.62E-01	2.31E-01	3.11E-01
AG-108M	433.93	89.90	5.71E-02	5.71E-02	1.25E-02	2.70E-02
	614.37	90.40	7.11E-02		-6.59E-03	3.35E-02
	722.95	90.50	7.34E-02		-2.86E-03	3.45E-02
+ CD-109	88.03	*	3.72	3.16E+00	3.16E+00	2.55E+00
AG-110M	657.75	93.14	7.12E-02	7.12E-02	4.13E-04	3.34E-02
	677.61	10.53	6.86E-01		2.16E-01	3.23E-01
	706.67	16.46	4.34E-01		7.30E-02	2.04E-01
	763.93	21.98	3.63E-01		2.56E-02	1.71E-01
	884.67	71.63	9.62E-02		-7.67E-02	4.45E-02
	1384.27	23.94	3.07E-01		1.37E-01	1.38E-01
CD-113M	263.70	0.02	2.09E+02	2.09E+02	1.53E+01	1.00E+02
SN-113	255.12	1.93	3.16E+00	9.42E-02	-1.54E+00	1.52E+00
	391.69	64.90	9.42E-02		-1.00E-02	4.47E-02
TE123M	159.00	84.10	7.14E-02	7.14E-02	5.29E-03	3.47E-02
SB-124	602.71	97.87	9.62E-02	9.62E-02	3.53E-02	4.56E-02
	645.85	7.26	1.11E+00		1.13E-02	5.20E-01
	722.78	11.10	8.28E-01		-3.22E-02	3.88E-01
	1691.02	49.00	1.77E-01		-1.62E-02	7.76E-02
I-125	35.49	6.49	5.35E+00	5.35E+00	1.24E+00	2.60E+00
SB-125	176.33	6.89	7.42E-01	1.94E-01	-2.35E-01	3.60E-01
	427.89	29.33	1.94E-01		7.11E-02	9.24E-02
	463.38	10.35	5.96E-01		3.11E-01	2.84E-01
	600.56	17.80	4.00E-01		1.46E-01	1.90E-01
	635.90	11.32	5.48E-01		9.18E-03	2.57E-01
SB-126	414.70	83.30	3.03E-01	3.03E-01	6.38E-02	1.43E-01
	666.33	99.60	3.32E-01		1.49E-01	1.56E-01
	695.00	99.60	3.07E-01		-5.49E-02	1.44E-01
	720.50	53.80	5.43E-01		-2.19E-01	2.53E-01
+ SN-126	87.57	*	37.00	3.04E-01	3.04E-01	2.46E-01
SB-127	473.00	25.00	3.27E+01	2.83E+01	8.13E+00	1.54E+01
	685.20	35.70	2.83E+01		5.44E+00	1.33E+01
	783.80	14.70	8.40E+01		6.82E+01	3.96E+01
I-129	29.78	57.00	1.16E+00	1.16E+00	4.24E-01	5.63E-01
	33.60	13.20	2.40E+00		-7.62E-01	1.16E+00
	39.58	7.52	1.93E+00		-8.11E-01	9.36E-01
I-131	284.30	6.05	9.08E+00	6.36E-01	4.69E-01	4.34E+00
	364.48	81.20	6.36E-01		3.18E-01	3.00E-01

Analysis Report for 1510064-06

CP2211S01-02

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
I-131	636.97	7.26	9.13E+00	6.36E-01	-2.09E+00	4.28E+00
	722.89	1.80	4.19E+01		-1.63E+00	1.97E+01
TE-132	49.72	13.10	2.18E+02	2.44E+01	-8.38E+01	1.06E+02
	228.16	88.00	2.44E+01		5.85E+00	1.18E+01
BA-133	81.00	33.00	1.27E-01	8.68E-02	8.32E-02	6.15E-02
	302.84	17.80	2.94E-01		-8.28E-02	1.41E-01
	356.01	60.00	8.68E-02		8.36E-03	4.13E-02
I-133	529.87	86.30	3.51E+08	3.51E+08	-1.06E+08	1.64E+08
XE-133	81.00	38.00	4.54E+00	4.54E+00	2.98E+00	2.20E+00
CS-134	563.23	8.38	6.35E-01	9.35E-02	-1.26E-01	2.97E-01
	569.32	15.43	3.57E-01		-7.12E-02	1.67E-01
	604.70	97.60	9.80E-02		8.29E-03	4.71E-02
	795.84	85.40	9.35E-02		7.06E-02	4.41E-02
	801.93	8.73	7.57E-01		1.60E-01	3.53E-01
CS-135	268.24	16.00	3.40E-01	3.40E-01	-6.32E-02	1.64E-01
@ I-135	1131.51	22.50	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	1260.41	28.60	1.00E+26		1.00E+26	1.00E+20
@	1678.03	9.54	1.00E+26		1.00E+26	1.00E+20
CS-136	153.22	7.46	2.97E+00	2.79E-01	6.11E-01	1.44E+00
	163.89	4.61	4.67E+00		-3.78E+00	2.26E+00
	176.55	13.56	1.63E+00		-3.34E-01	7.92E-01
	273.65	12.66	1.80E+00		-4.07E-01	8.67E-01
	340.57	48.50	5.41E-01		-2.20E-01	2.60E-01
	818.50	99.70	2.79E-01		-6.17E-02	1.29E-01
	1048.07	79.60	3.37E-01		7.62E-02	1.53E-01
	1235.34	19.70	2.65E+00		1.53E+00	1.26E+00
CS-137	661.65	85.12	7.12E-02	7.12E-02	-1.03E-02	3.34E-02
LA-138	788.74	34.00	2.20E-01	9.02E-02	1.18E-01	1.04E-01
	1435.80	66.00	9.02E-02		-4.21E-03	3.98E-02
CE-139	165.85	80.35	7.10E-02	7.10E-02	-1.59E-02	3.45E-02
BA-140	162.64	6.70	3.43E+00	9.41E-01	3.69E-01	1.67E+00
	304.84	4.50	5.02E+00		6.10E-01	2.40E+00
	423.70	3.20	7.53E+00		-1.62E+00	3.57E+00
	437.55	2.00	1.05E+01		-5.13E+00	4.94E+00
	537.32	25.00	9.41E-01		-1.71E-01	4.41E-01
LA-140	328.77	20.50	1.24E+00	3.88E-01	4.32E-01	5.93E-01
	487.03	45.50	5.29E-01		5.24E-02	2.49E-01
	815.85	23.50	1.19E+00		-4.93E-01	5.51E-01
	1596.49	95.49	3.88E-01		2.13E-01	1.76E-01
CE-141	145.44	48.40	1.96E-01	1.96E-01	2.04E-01	9.54E-02
CE-143	57.36	11.80	6.20E+05	3.01E+05	-1.18E+05	3.00E+05
	293.26	42.00	3.01E+05		-5.55E+02	1.47E+05
	664.55	5.20	1.96E+06		1.38E+06	9.25E+05
CE-144	133.54	10.80	4.55E-01	4.55E-01	2.06E-01	2.21E-01
PM-144	476.78	42.00	1.15E-01	6.19E-02	-1.06E-01	5.36E-02
	618.01	98.60	6.19E-02		-6.43E-03	2.90E-02
	696.49	99.49	6.72E-02		-2.66E-02	3.15E-02
PM-145	36.85	21.70	9.69E-01	4.98E-01	5.13E-01	4.71E-01
	37.36	39.70	4.98E-01		2.63E-01	2.42E-01
	42.30	15.10	7.95E-01		-1.41E-01	3.86E-01
	72.40	2.31	2.09E+00		6.62E-01	1.02E+00
PM-146	453.90	39.94	1.33E-01	1.33E-01	3.26E-02	6.30E-02
	735.90	14.01	4.34E-01		8.02E-02	2.02E-01

Analysis Report for 1510064-06

CP2211S01-02

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
PM-146	747.13	13.10	5.44E-01	1.33E-01	1.47E-01	2.56E-01
ND-147	91.11	28.90	1.25E+00	1.25E+00	-7.71E-01	6.12E-01
	531.02	13.10	2.36E+00		4.52E-01	1.11E+00
PM-149	285.90	3.10	1.14E+04	1.14E+04	5.53E+03	5.48E+03
EU-152	121.78	20.50	2.27E-01	2.27E-01	1.33E-02	1.11E-01
	244.69	5.40	1.07E+00		2.81E-01	5.19E-01
	344.27	19.13	2.58E-01		-1.28E-01	1.23E-01
	778.89	9.20	6.92E-01		-6.98E-02	3.22E-01
	964.01	10.40	8.09E-01		-1.52E+00	3.80E-01
	1085.78	7.22	9.67E-01		2.05E-01	4.44E-01
	1112.02	9.60	8.10E-01		2.88E-01	3.75E-01
	1407.95	14.94	5.70E-01		3.24E-01	2.62E-01
GD-153	97.43	31.30	1.54E-01	1.54E-01	3.26E-02	7.52E-02
	103.18	22.20	2.16E-01		-1.74E-01	1.05E-01
EU-154	123.07	40.50	1.16E-01	1.16E-01	3.44E-02	5.66E-02
	723.30	19.70	3.39E-01		-1.32E-02	1.59E-01
	873.19	11.50	5.90E-01		2.69E-01	2.74E-01
	996.32	10.30	7.28E-01		-8.39E-02	3.38E-01
	1004.76	17.90	3.90E-01		-1.41E-01	1.80E-01
	1274.45	35.50	1.84E-01		9.89E-03	8.29E-02
EU-155	86.50	30.90	1.97E-01	1.97E-01	-3.70E-02	9.67E-02
	105.30	20.70	2.20E-01		1.79E-01	1.07E-01
EU-156	811.77	10.40	2.31E+00	2.31E+00	4.40E-02	1.08E+00
	1153.47	7.20	4.87E+00		2.05E+00	2.28E+00
	1230.71	8.90	3.59E+00		1.62E+00	1.67E+00
HO-166M	184.41	72.60	9.32E-02	9.32E-02	6.25E-02	4.55E-02
	280.45	29.60	1.79E-01		5.56E-02	8.58E-02
	410.94	11.10	4.92E-01		-1.61E-01	2.34E-01
	711.69	54.10	1.12E-01		-5.51E-02	5.20E-02
TM-171	66.72	0.14	3.48E+01	3.48E+01	-4.72E+00	1.69E+01
HF-172	81.75	4.52	8.99E-01	4.13E-01	4.13E-01	4.36E-01
	125.81	11.30	4.13E-01		-4.48E-01	2.01E-01
LU-172	181.53	20.60	4.78E+00	2.22E+00	7.42E-01	2.32E+00
	810.06	16.63	7.63E+00		-2.57E+00	3.57E+00
	912.12	15.25	1.46E+01		2.71E+01	6.98E+00
	1093.66	62.50	2.22E+00		-1.02E-01	1.02E+00
LU-173	100.72	5.24	8.92E-01	2.82E-01	-2.59E-01	4.34E-01
	272.11	21.20	2.82E-01		2.70E-02	1.36E-01
HF-175	343.40	84.00	8.09E-02	8.09E-02	3.69E-02	3.86E-02
LU-176	88.34	13.30	4.64E-01	5.16E-02	8.82E-01	2.28E-01
	201.83	86.00	6.10E-02		-9.78E-03	2.95E-02
	306.78	94.00	5.16E-02		-1.03E-02	2.46E-02
TA-182	67.75	41.20	1.35E-01	1.35E-01	-1.96E-03	6.56E-02
	1121.30	34.90	4.91E-01		1.22E+00	2.35E-01
	1189.05	16.23	5.41E-01		-3.12E-01	2.48E-01
	1221.41	26.98	3.70E-01		2.36E-01	1.71E-01
	1231.02	11.44	9.65E-01		3.68E-01	4.50E-01
IR-192	308.46	29.68	2.12E-01	1.47E-01	1.03E-02	1.01E-01
	468.07	48.10	1.47E-01		3.41E-03	6.96E-02
HG-203	279.19	77.30	1.06E-01	1.06E-01	4.80E-02	5.09E-02
BI-207	569.67	97.72	5.50E-02	5.50E-02	-1.10E-02	2.58E-02
	1063.62	74.90	8.22E-02		-4.96E-03	3.74E-02
+ TL-208	583.14	* 30.22	2.84E-01	1.76E-01	8.84E-01	1.36E-01

Analysis Report for 1510064-06

CP2211S01-02

Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
TL-208	860.37	*	4.48	1.61E+00	1.76E-01	1.01E+00	7.53E-01
	2614.66	*	35.85	1.76E-01		6.25E-01	7.67E-02
BI-210M	262.00		45.00	1.13E-01	1.13E-01	-6.37E-03	5.42E-02
	300.00		23.00	2.40E-01		1.64E-01	1.15E-01
PB-210	46.50		4.25	2.42E+00	2.42E+00	4.46E+00	1.18E+00
PB-211	404.84		2.90	1.93E+00	1.93E+00	-3.12E-01	9.20E-01
	831.96		2.90	2.45E+00		-1.09E+00	1.15E+00
+ BI-212	727.17	*	11.80	9.39E-01	9.39E-01	7.75E-01	4.52E-01
	1620.62		2.75	2.69E+00		3.17E-01	1.21E+00
+ PB-212	238.63	*	44.60	2.03E-01	2.03E-01	9.62E-01	9.93E-02
	300.09		3.41	1.62E+00		1.11E+00	7.76E-01
+ BI-214	609.31	*	46.30	1.93E-01	1.93E-01	2.18E+00	9.26E-02
	1120.29	*	15.10	6.30E-01		2.30E+00	2.96E-01
	1764.49	*	15.80	3.37E-01		2.31E+00	1.43E-01
	2204.22	*	4.98	1.54E+00		1.69E+00	6.87E-01
+ PB-214	295.21	*	19.19	3.52E-01	2.07E-01	2.38E+00	1.71E-01
	351.92	*	37.19	2.07E-01		2.42E+00	1.00E-01
RN-219	401.80		6.50	8.01E-01	8.01E-01	5.94E-02	3.80E-01
RA-223	323.87		3.88	1.18E+00	1.18E+00	-5.25E-01	5.61E-01
RA-224	240.98		3.95	2.67E+00	2.67E+00	8.80E+00	1.31E+00
RA-225	40.00		31.00	1.68E+00	1.68E+00	-7.06E-01	8.16E-01
+ RA-226	186.21	*	3.28	2.58E+00	2.58E+00	4.04E+00	1.27E+00
TH-227	50.10		8.40	8.31E-01	6.35E-01	-3.20E-01	4.03E-01
	236.00		11.50	6.35E-01		-3.65E+00	3.09E-01
	256.20		6.30	8.35E-01		-5.55E-02	4.02E-01
+ AC-228	338.32	*	11.40	7.38E-01	3.68E-01	9.32E-01	3.59E-01
	911.07	*	27.70	3.68E-01		8.03E-01	1.75E-01
	969.11		16.60	6.41E-01		5.62E-01	3.05E-01
TH-230	48.44		16.90	4.54E-01	4.54E-01	-2.48E-01	2.21E-01
	62.85		4.60	1.30E+00		2.33E+00	6.35E-01
	67.67		0.37	1.27E+01		-1.84E-01	6.16E+00
PA-231	283.67		1.60	3.02E+00	2.26E+00	1.56E-01	1.44E+00
	302.67		2.30	2.26E+00		-6.38E-01	1.08E+00
+ TH-231	25.64		14.70	1.38E+01	1.74E+00	7.94E+00	6.67E+00
	84.21	*	6.40	1.74E+00		4.60E-01	8.59E-01
PA-233	311.98		38.60	2.62E-01	2.62E-01	-1.05E-01	1.25E-01
PA-234	131.20		20.40	2.38E-01	2.38E-01	2.14E-01	1.16E-01
	733.99		8.80	7.07E-01		3.89E-01	3.30E-01
	946.00		12.00	5.76E-01		-1.73E-03	2.67E-01
PA-234M	1001.03		0.92	8.45E+00	8.45E+00	2.22E+00	3.94E+00
+ TH-234	63.29	*	3.80	2.30E+00	2.30E+00	1.93E+00	1.13E+00
U-235	143.76		10.50	4.89E-01	4.89E-01	2.89E-01	2.38E-01
	163.35		4.70	1.07E+00		1.14E-01	5.17E-01
	205.31		4.70	1.10E+00		3.46E-01	5.31E-01
+ NP-237	86.50	*	12.60	8.94E-01	8.94E-01	7.21E-01	4.42E-01
NP-239	106.10		22.70	7.84E+02	7.84E+02	2.40E+01	3.81E+02
	228.18		10.70	2.00E+03		4.79E+02	9.69E+02
	277.60		14.10	1.50E+03		2.17E+02	7.20E+02
AM-241	59.54		35.90	1.43E-01	1.43E-01	5.38E-02	6.95E-02
AM-243	74.67		66.00	9.86E-02	9.86E-02	-2.65E-01	4.84E-02
CM-243	209.75		3.29	1.73E+00	3.78E-01	9.59E-01	8.40E-01
	228.14		10.60	5.06E-01		1.21E-01	2.45E-01
	277.60		14.00	3.78E-01		5.48E-02	1.81E-01

Analysis Report for 1510064-06
CP2211S01-02

-
- + = 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: CP2211S01-02

Elapsed Live time: 3600
 Elapsed Real Time: 3601

Channel	1	2	3	4	5	6	7	8	9
1:	0	0	0	0	0	0	2	228	
9:	584	1217	1086	454	675	1635	263	139	
17:	151	125	137	132	122	112	114	116	
25:	116	118	125	95	145	115	127	128	
33:	116	131	140	145	145	138	118	116	
41:	141	138	138	159	122	172	242	140	
49:	113	126	128	131	141	130	91	94	
57:	96	117	117	143	111	132	200	250	
65:	135	140	135	133	143	140	160	168	
73:	150	201	489	232	587	419	121	142	
81:	120	131	105	159	146	117	235	232	
89:	137	193	116	164	281	165	106	97	
97:	72	99	93	107	103	78	90	101	
105:	81	107	86	75	89	102	95	104	
113:	103	90	90	86	80	89	83	89	
121:	83	100	95	81	92	81	88	73	
129:	110	95	83	81	88	73	78	81	
137:	64	86	86	84	75	78	93	128	
145:	87	80	85	70	92	80	79	83	
153:	84	101	67	78	85	79	76	71	
161:	98	82	66	65	70	76	79	75	
169:	85	78	60	80	81	70	67	80	
177:	77	52	71	75	80	70	77	77	
185:	109	271	135	68	79	76	60	65	
193:	72	68	66	71	68	70	71	67	
201:	63	60	68	59	63	52	58	77	
209:	81	82	61	55	63	51	58	59	
217:	52	61	62	52	47	59	68	58	
225:	55	48	47	65	56	64	50	56	
233:	51	59	50	63	54	279	460	93	
241:	131	236	122	35	52	43	44	41	
249:	39	50	46	51	42	44	53	38	
257:	43	51	50	41	50	33	49	33	
265:	37	29	56	31	49	66	59	36	
273:	48	45	45	28	50	43	45	40	
281:	35	41	28	33	32	32	46	46	
289:	34	36	24	31	31	72	357	242	
297:	45	32	40	51	47	32	30	36	
305:	32	32	25	28	33	30	27	33	
313:	31	29	36	23	25	32	39	33	
321:	26	20	25	22	30	26	32	42	
329:	37	36	30	34	30	29	37	21	
337:	41	72	87	29	29	28	25	35	
345:	27	16	35	28	29	32	230	682	
353:	169	40	18	23	31	27	29	25	
361:	22	20	23	18	18	23	11	22	

369: 25 34 24 20 14 24 19 31

Sample Title: CP2211S01-02

Channel	1	2	3	4	5	6	7	8
377:	19	18	23	26	20	19	35	22
385:	30	28	31	30	27	30	19	25
393:	24	22	24	21	22	29	21	25
401:	21	24	27	21	24	26	38	33
409:	23	41	21	19	22	28	22	13
417:	28	18	28	31	35	28	22	20
425:	16	24	23	32	21	25	20	26
433:	24	22	14	16	15	17	17	20
441:	16	20	21	14	23	15	24	22
449:	21	13	19	18	20	20	27	16
457:	21	17	21	15	21	26	34	26
465:	24	24	20	21	17	21	12	23
473:	19	17	18	13	13	12	13	24
481:	23	17	19	16	15	20	26	17
489:	11	15	18	17	14	16	12	19
497:	18	12	16	16	22	9	7	14
505:	23	17	22	24	30	50	83	51
513:	21	17	12	13	22	11	14	11
521:	11	11	16	10	10	14	14	9
529:	7	18	15	20	18	19	13	15
537:	15	15	15	15	14	18	17	16
545:	14	14	13	15	9	15	13	11
553:	16	10	10	20	11	14	11	18
561:	11	12	20	11	16	21	12	15
569:	14	16	17	12	18	13	15	13
577:	11	19	9	17	18	49	125	67
585:	15	17	13	10	9	15	17	7
593:	12	10	11	18	19	16	12	19
601:	17	14	22	14	14	12	19	120
609:	441	229	26	14	14	9	10	11
617:	12	8	12	13	10	11	12	13
625:	15	9	11	6	8	13	16	15
633:	14	11	19	11	7	9	10	7
641:	11	10	6	12	14	9	10	7
649:	14	10	10	7	13	8	13	7
657:	18	14	9	6	11	12	8	15
665:	22	17	13	11	10	10	10	6
673:	17	13	17	12	10	13	12	12
681:	12	8	10	9	7	20	8	16
689:	10	6	11	11	8	10	16	12
697:	13	6	11	18	12	9	12	9
705:	14	14	19	6	7	13	8	12
713:	5	15	15	13	11	7	9	14
721:	8	6	10	11	8	22	33	25
729:	9	7	7	8	14	6	11	10
737:	11	4	6	11	5	15	8	13
745:	12	13	7	12	14	14	7	12
753:	8	10	10	11	10	9	9	10
761:	9	14	10	10	10	14	23	42
769:	23	10	10	9	8	3	8	10
777:	7	8	7	9	9	13	10	6
785:	16	17	24	12	4	8	7	7
793:	12	20	23	12	6	12	9	9

801: 9 10 2 7 16 17 13 6

Sample Title: CP2211S01-02

Channel	1	2	3	4	5	6	7	8	9
809:	12	13	12	5	9	8	10	6	
817:	8	8	4	12	9	10	10	10	
825:	8	3	7	14	6	11	11	10	
833:	14	11	9	16	14	9	10	16	
841:	7	10	8	8	10	17	3	6	
849:	4	6	8	5	8	13	11	8	
857:	6	7	11	20	19	8	6	9	
865:	10	9	10	5	4	10	7	9	
873:	7	7	10	9	5	9	15	13	
881:	4	3	10	10	8	11	5	9	
889:	9	4	6	10	11	9	13	8	
897:	8	13	9	7	9	7	4	7	
905:	13	12	7	13	14	35	76	32	
913:	13	11	5	11	6	13	13	6	
921:	8	12	9	6	7	10	11	9	
929:	10	3	13	10	15	23	11	8	
937:	8	3	10	13	8	10	9	13	
945:	6	7	8	6	5	8	6	12	
953:	6	6	6	6	5	6	4	6	
961:	9	6	15	18	14	8	9	36	
969:	38	22	9	8	10	7	5	8	
977:	5	10	4	7	10	11	12	13	
985:	6	12	8	9	9	1	3	8	
993:	12	4	7	8	10	9	8	14	
1001:	9	8	7	8	5	8	4	11	
1009:	4	9	11	7	4	5	8	6	
1017:	5	9	10	10	9	6	3	6	
1025:	5	9	1	9	5	8	5	8	
1033:	6	5	12	6	9	8	11	8	
1041:	3	6	5	8	8	4	6	6	
1049:	4	2	4	13	10	5	4	11	
1057:	7	5	6	4	5	3	8	6	
1065:	5	3	3	8	8	9	3	5	
1073:	8	3	3	9	4	12	6	3	
1081:	5	5	2	6	5	4	7	14	
1089:	1	12	8	4	4	8	9	5	
1097:	8	7	7	4	6	8	5	9	
1105:	8	5	5	5	11	8	3	7	
1113:	6	11	6	7	5	9	48	78	
1121:	34	8	8	7	3	2	6	11	
1129:	9	6	8	5	6	7	3	12	
1137:	6	10	6	6	8	8	9	7	
1145:	6	10	12	9	12	9	8	8	
1153:	18	11	13	12	9	5	10	10	
1161:	9	11	11	10	5	13	9	9	
1169:	6	3	6	6	7	14	4	5	
1177:	10	10	7	7	9	9	7	10	
1185:	8	8	3	5	9	7	7	3	
1193:	10	7	5	6	8	6	6	9	
1201:	8	13	11	5	6	8	7	7	
1209:	8	8	6	3	8	8	14	7	
1217:	6	8	10	11	10	5	5	4	
1225:	2	4	4	7	10	12	5	14	

1233: 6 11 10 11 26 30 15 14

Sample Title: CP2211S01-02

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1241:	8	6	8	7	4	6	6	11
1249:	7	12	9	5	9	9	5	7
1257:	9	9	2	5	5	7	4	6
1265:	7	7	7	2	3	6	3	4
1273:	4	5	4	2	6	7	5	12
1281:	13	9	9	7	6	2	4	3
1289:	3	4	3	2	3	3	4	5
1297:	4	1	2	2	4	3	5	6
1305:	6	4	2	2	4	4	4	6
1313:	9	6	3	5	4	2	4	2
1321:	3	5	2	4	8	3	5	6
1329:	3	7	1	4	3	1	3	9
1337:	4	5	3	6	3	1	5	3
1345:	4	3	2	4	6	2	6	4
1353:	3	7	2	3	1	4	1	2
1361:	3	7	0	4	2	3	4	6
1369:	2	2	2	1	2	4	4	8
1377:	17	16	8	5	0	5	1	9
1385:	4	5	3	3	2	6	3	2
1393:	4	3	4	4	3	2	3	5
1401:	10	5	3	2	5	3	17	10
1409:	4	2	3	3	3	1	2	4
1417:	3	5	3	1	0	3	3	1
1425:	9	2	2	5	4	3	3	2
1433:	2	3	2	3	4	3	6	5
1441:	4	9	5	2	1	2	2	5
1449:	1	3	3	1	1	1	3	3
1457:	4	21	94	217	182	52	7	3
1465:	3	7	3	3	7	2	5	2
1473:	1	3	1	1	3	1	2	1
1481:	1	1	1	3	0	4	2	1
1489:	5	2	2	4	2	6	4	5
1497:	4	3	2	2	5	2	0	1
1505:	0	2	4	6	10	10	0	5
1513:	2	2	0	2	1	1	5	4
1521:	0	0	2	4	0	1	2	5
1529:	6	1	3	6	3	0	1	1
1537:	3	4	4	2	3	5	1	6
1545:	3	1	0	3	0	3	2	3
1553:	0	2	3	6	2	3	1	2
1561:	1	1	1	1	1	1	1	4
1569:	2	0	2	0	3	2	0	0
1577:	2	4	2	2	5	9	6	0
1585:	3	5	1	9	4	4	1	7
1593:	7	7	1	2	1	5	1	1
1601:	2	1	1	1	2	1	2	3
1609:	2	1	2	1	2	1	2	1
1617:	2	3	4	4	4	2	4	2
1625:	4	3	4	1	5	5	3	2
1633:	3	1	0	3	3	2	4	1
1641:	1	2	1	1	1	0	0	0
1649:	0	1	3	2	2	1	2	1
1657:	1	1	3	4	2	7	0	0

1665: 4 2 0 1 1 1 0 1

Sample Title: CP2211S01-02

Channel	1	2	3	4	5	6	7	8
1673:	1	0	0	3	1	1	1	0
1681:	1	1	2	3	5	2	2	1
1689:	1	2	2	4	1	2	3	3
1697:	1	1	0	0	1	0	0	1
1705:	0	1	0	1	1	1	0	2
1713:	2	1	2	1	1	2	1	0
1721:	3	0	2	0	0	2	2	3
1729:	10	6	2	1	4	2	1	1
1737:	0	2	2	0	0	4	2	0
1745:	1	3	0	1	3	1	0	1
1753:	0	2	1	3	0	0	2	1
1761:	2	7	37	45	28	11	0	2
1769:	1	1	1	2	2	1	1	2
1777:	3	0	3	1	2	1	1	0
1785:	0	0	0	1	1	1	0	0
1793:	2	1	2	1	0	1	1	3
1801:	3	1	1	2	2	0	3	0
1809:	0	0	2	1	2	1	3	2
1817:	2	0	0	0	2	3	0	2
1825:	1	2	0	2	2	0	0	3
1833:	0	2	2	2	2	2	2	0
1841:	1	1	2	1	1	3	12	10
1849:	3	0	2	2	0	1	1	2
1857:	0	1	0	1	1	1	4	1
1865:	0	0	2	1	1	2	0	2
1873:	1	2	0	0	1	0	2	3
1881:	2	1	2	1	2	1	1	4
1889:	1	1	1	1	0	0	2	0
1897:	1	1	1	2	1	0	0	1
1905:	2	1	0	1	0	0	0	1
1913:	1	2	2	2	0	2	0	0
1921:	3	2	4	1	3	2	0	0
1929:	0	0	0	1	0	1	0	0
1937:	2	0	2	1	1	0	2	0
1945:	3	1	4	2	0	0	2	0
1953:	0	0	2	1	2	2	1	0
1961:	0	1	1	2	1	1	1	1
1969:	2	0	2	2	0	1	1	0
1977:	0	4	1	0	1	3	0	3
1985:	2	0	0	0	1	0	1	0
1993:	2	2	1	1	2	1	1	3
2001:	2	1	1	2	1	1	0	3
2009:	2	0	0	2	1	2	1	2
2017:	0	2	2	0	1	2	0	2
2025:	0	2	0	1	1	0	4	1
2033:	0	0	1	1	2	1	2	1
2041:	1	0	1	0	0	0	0	0
2049:	1	1	3	1	0	1	1	3
2057:	2	0	0	2	2	1	0	1
2065:	2	1	0	1	0	1	0	2
2073:	0	1	0	1	0	1	0	1
2081:	1	2	2	3	0	2	0	0
2089:	1	0	0	1	2	0	0	3

2097: 2 1 0 2 1 2 3 2

Sample Title: CP2211S01-02

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

2529: 1 1 2 2 0 1 0 0

Sample Title: CP2211S01-02

Channel	1	2	3	4	5	6	7	8	9
2537:	0	0	0	1	0	0	0	1	
2545:	0	0	0	0	0	0	1	0	
2553:	0	0	0	0	0	1	0	0	
2561:	0	1	1	0	0	0	0	0	
2569:	0	0	0	0	0	1	0	0	
2577:	0	0	0	0	0	0	1	0	
2585:	0	0	0	0	0	0	0	1	
2593:	2	0	1	0	1	1	1	0	
2601:	2	0	0	0	0	0	0	2	
2609:	0	1	4	17	19	28	9	5	
2617:	1	1	1	0	0	1	0	0	
2625:	1	0	0	1	0	0	0	0	
2633:	0	1	0	0	1	0	1	1	
2641:	0	0	0	0	0	0	0	0	
2649:	0	0	0	0	0	1	0	0	
2657:	0	0	0	0	1	1	0	0	
2665:	0	1	0	0	1	0	1	0	
2673:	0	1	2	0	0	1	0	1	
2681:	1	0	0	1	0	0	2	1	
2689:	1	0	1	1	0	1	0	0	
2697:	1	0	0	0	1	1	0	0	
2705:	0	0	0	0	0	1	0	0	
2713:	0	1	0	0	1	0	1	0	
2721:	0	0	0	0	0	0	0	0	
2729:	2	0	0	0	1	1	0	0	
2737:	0	0	1	0	1	2	1	1	
2745:	0	0	0	0	0	0	1	0	
2753:	0	0	0	0	0	0	0	0	
2761:	0	0	1	0	1	0	0	1	
2769:	0	0	0	1	0	2	0	0	
2777:	0	0	0	0	1	0	0	0	
2785:	0	0	0	0	0	1	0	0	
2793:	1	0	0	0	0	0	0	0	
2801:	0	0	0	0	0	0	0	1	
2809:	0	0	0	0	0	0	0	0	
2817:	0	1	0	1	0	2	0	0	
2825:	0	0	0	1	0	0	0	1	
2833:	0	0	0	0	1	0	0	0	
2841:	0	0	0	0	0	0	0	0	
2849:	0	0	2	0	0	0	1	1	
2857:	1	0	0	0	0	0	0	0	
2865:	0	0	0	0	0	0	0	0	
2873:	0	0	1	0	0	0	0	0	
2881:	0	0	0	1	1	1	0	0	
2889:	0	0	1	1	0	0	0	0	
2897:	0	1	1	0	1	0	0	0	
2905:	0	1	0	0	0	0	0	0	
2913:	0	0	0	0	0	1	0	0	
2921:	0	0	0	0	1	1	0	0	
2929:	2	0	0	0	0	1	0	0	
2937:	0	1	0	0	0	0	0	2	
2945:	0	0	1	0	0	1	0	1	
2953:	0	0	0	0	0	1	0	0	

2961: 0 0 0 0 0 0 0 0 0

Sample Title: CP2211S01-02

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

3393: 1 0 0 0 0 0 0 0 0

Sample Title: CP2211S01-02

Channel	1	2	3	4	5	6	7	8	9
3401:	0	0	0	0	0	1	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	0	0	0	
3433:	0	1	0	1	0	0	0	0	
3441:	0	0	0	1	0	0	0	0	
3449:	0	0	0	0	0	0	0	0	
3457:	0	0	0	0	1	1	0	0	
3465:	0	0	0	1	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	1	0	0	0	0	
3497:	1	1	0	1	0	0	0	0	
3505:	1	0	0	1	0	0	0	1	
3513:	0	0	0	0	0	0	1	0	
3521:	1	0	0	0	1	0	0	0	
3529:	0	0	0	0	0	0	0	0	
3537:	0	0	0	0	0	0	0	1	
3545:	0	0	0	1	0	1	0	0	
3553:	0	0	0	0	0	0	1	0	
3561:	0	0	0	0	1	1	1	0	
3569:	1	0	0	0	1	0	0	0	
3577:	0	0	0	0	0	0	0	0	
3585:	0	0	0	1	1	0	1	0	
3593:	0	0	0	0	0	0	0	0	
3601:	0	0	1	0	0	0	1	0	
3609:	1	0	0	0	0	0	0	1	
3617:	0	0	0	1	0	0	0	0	
3625:	0	0	0	1	0	0	0	1	
3633:	0	0	0	0	0	0	0	0	
3641:	0	0	0	0	0	0	0	0	
3649:	0	0	1	0	0	0	0	0	
3657:	0	0	1	0	0	0	0	1	
3665:	0	0	0	0	0	0	0	0	
3673:	1	1	0	0	0	0	2	0	
3681:	0	0	0	0	0	0	0	0	
3689:	0	0	1	0	0	0	1	0	
3697:	0	1	0	0	0	0	0	1	
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	1	
3729:	0	0	0	0	0	0	0	0	
3737:	0	0	0	0	0	0	0	0	
3745:	0	0	0	0	0	0	0	0	
3753:	0	0	0	0	0	0	0	0	
3761:	0	0	0	0	0	0	0	0	
3769:	0	1	1	0	0	0	1	0	
3777:	0	0	0	0	1	1	0	0	
3785:	0	0	0	1	0	0	1	0	
3793:	0	0	0	0	0	0	0	0	
3801:	0	0	0	0	1	0	0	1	
3809:	0	0	0	0	1	0	0	0	
3817:	0	0	0	0	0	0	0	0	

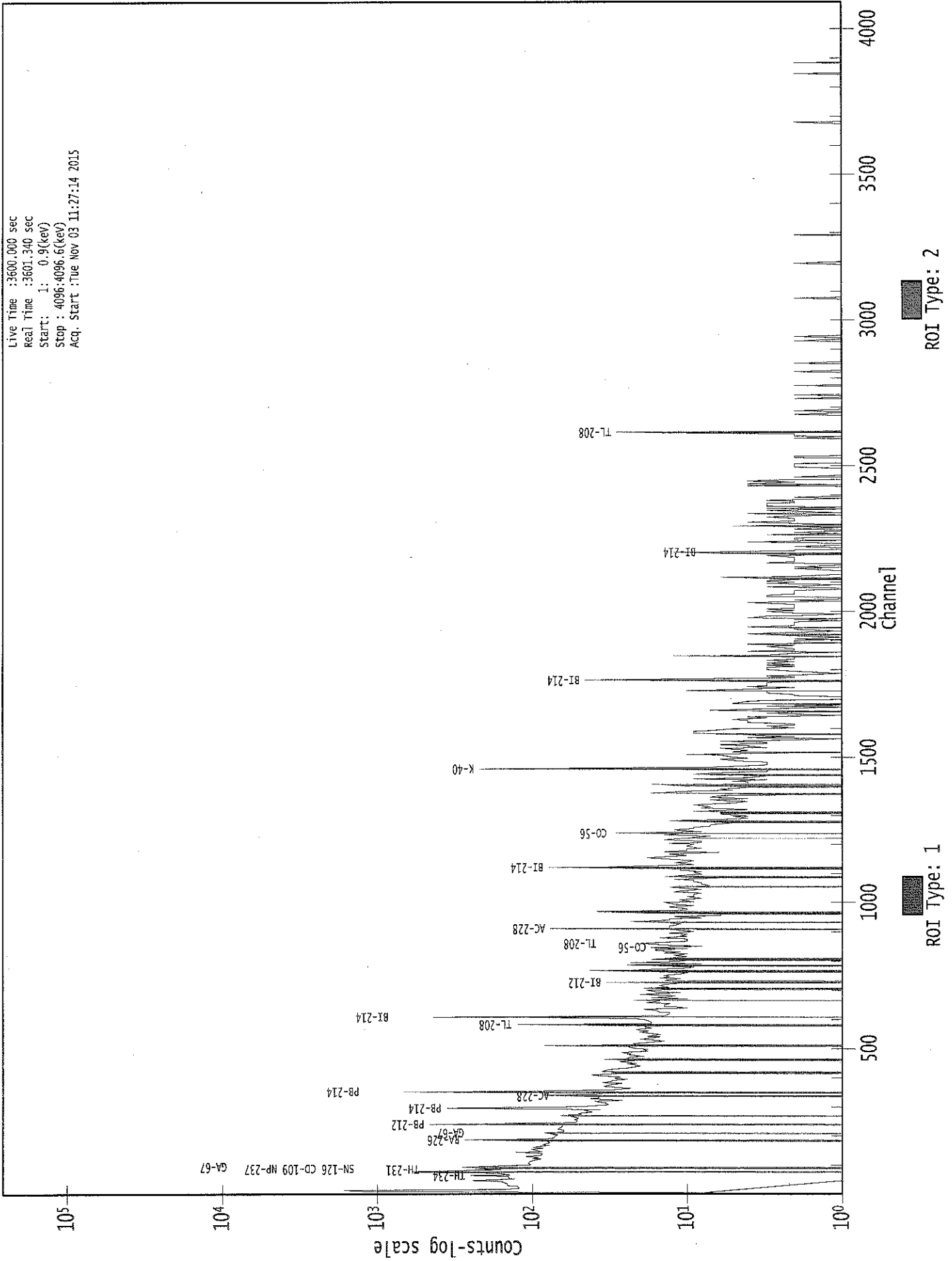
3825: 1 0 0 0 0 0 0 0 0

Sample Title: CP2211S01-02

Channel	-----	-----	-----	-----	-----	-----	-----	-----
3833:	0	0	0	0	1	0	0	0
3841:	1	0	1	0	0	2	0	0
3849:	0	0	0	0	0	0	0	0
3857:	0	0	0	0	0	0	0	0
3865:	0	0	1	0	0	1	0	0
3873:	0	0	0	0	0	0	0	0
3881:	0	0	0	2	0	0	0	0
3889:	0	0	0	0	0	0	0	1
3897:	0	0	0	1	1	0	1	0
3905:	0	0	0	0	0	1	0	0
3913:	0	0	0	0	0	0	0	1
3921:	0	1	1	0	0	0	0	0
3929:	0	0	0	0	0	1	0	0
3937:	0	1	0	0	0	0	0	0
3945:	0	0	0	0	0	0	1	0
3953:	0	0	0	0	0	0	0	0
3961:	0	0	0	0	0	0	0	0
3969:	1	0	0	0	0	0	0	0
3977:	0	0	0	0	0	0	0	0
3985:	0	1	0	0	0	0	0	0
3993:	1	1	0	0	0	0	0	1
4001:	0	0	0	1	0	0	1	0
4009:	0	0	0	1	0	0	0	0
4017:	0	0	0	0	0	0	0	0
4025:	0	0	0	0	0	0	0	0
4033:	1	0	0	0	0	0	0	0
4041:	0	0	0	1	0	0	0	1
4049:	0	1	1	0	0	0	0	0
4057:	0	1	0	0	0	0	0	0
4065:	0	1	0	0	0	0	0	0
4073:	0	0	1	0	0	0	1	0
4081:	0	0	0	0	0	0	0	0
4089:	1	0	0	0	0	0	0	0

0000029024.CNF

Live Time : 3600.000 sec
Real Time : 3601.340 sec
Start : 1: 0.9(keV)
Stop : 4096.4096.6(keV)
Acq. Start : Tue Nov 03 11:27:14 2015



KB
11/3/15Analysis Report for 1510064-07
CP2211S04-05

GAMMA SPECTRUM ANALYSIS

Sample Identification : 1510064-07
Sample Description : CP2211S04-05
Sample Type : SOIL

Sample Size : 5.896E+02 grams
Facility : Countroom

Sample Taken On : 10/6/2015 7:35:05AM
Acquisition Started : 11/3/2015 11:27:21AM

Procedure : GAS-1402 pCi
Operator : Administrator
Detector Name : GE3
Geometry : GAS-1402
Live Time : 3600.0 seconds
Real Time : 3616.7 seconds

Dead Time : 0.46 %

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 : 29025

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
11/3/15

Analysis Report for 1510064-07
CP2211S04-05

PEAK LOCATE REPORT

Peak Locate Performed on : 11/3/2015 12:27:48PM
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	63.34	63.56	0.0000	0.00
2	76.12	76.33	0.0000	0.00
3	87.90	88.11	0.0000	0.00
4	93.30	93.50	0.0000	0.00
5	129.11	129.30	0.0000	0.00
6	186.18	186.34	0.0000	0.00
7	238.77	238.90	0.0000	0.00
8	242.04	242.16	0.0000	0.00
9	277.83	277.94	0.0000	0.00
10	295.33	295.43	0.0000	0.00
11	317.09	317.18	0.0000	0.00
12	328.25	328.33	0.0000	0.00
13	338.60	338.67	0.0000	0.00
14	352.07	352.15	0.0000	0.00
15	429.88	429.91	0.0000	0.00
16	463.54	463.56	0.0000	0.00
17	511.13	511.12	0.0000	0.00
18	583.24	583.20	0.0000	0.00
19	609.79	609.73	0.0000	0.00
20	727.59	727.48	0.0000	0.00
21	795.21	795.07	0.0000	0.00
22	859.92	859.75	0.0000	0.00
23	911.20	911.00	0.0000	0.00
24	969.78	969.56	0.0000	0.00
25	1120.50	1120.21	0.0000	0.00
26	1131.13	1130.84	0.0000	0.00
27	1238.59	1238.25	0.0000	0.00
28	1288.31	1287.95	0.0000	0.00
29	1297.53	1297.17	0.0000	0.00
30	1402.34	1401.95	0.0000	0.00
31	1407.95	1407.55	0.0000	0.00
32	1456.91	1456.49	0.0000	0.00
33	1461.26	1460.84	0.0000	0.00
34	1510.17	1509.73	0.0000	0.00
35	1582.20	1581.74	0.0000	0.00
36	1588.28	1587.82	0.0000	0.00
37	1630.83	1630.35	0.0000	0.00
38	1724.20	1723.68	0.0000	0.00
39	1730.12	1729.61	0.0000	0.00
40	1765.03	1764.50	0.0000	0.00
41	2103.55	2102.91	0.0000	0.00
42	2118.42	2117.78	0.0000	0.00

Analysis Report for 1510064-07
CP2211S04-05

<i>Peak No.</i>	<i>Energy (keV)</i>	<i>Centroid Channel</i>	<i>Centroid Uncertainty</i>	<i>Peak Significance</i>
43	2182.38	2181.71	0.0000	0.00
44	2203.37	2202.70	0.0000	0.00
45	2615.06	2614.28	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1510064-07

CP2211S04-05

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/3/2015 12:27:48PM

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	63.34	61 -	66	63.56	1.62E+02	94.55	1.66E+03	1.87
2	76.12	71 -	83	76.33	1.12E+03	193.03	3.85E+03	4.01
3	87.90	85 -	91	88.11	1.79E+02	110.55	2.08E+03	1.51
4	93.30	91 -	97	93.50	2.19E+02	99.32	1.54E+03	1.74
5	129.11	125 -	134	129.30	1.15E+02	106.70	1.56E+03	3.82
6	186.18	182 -	190	186.34	2.30E+02	85.93	9.95E+02	2.14
M 7	238.77	234 -	247	238.90	8.84E+02	73.64	4.41E+02	1.82
m 8	242.04	234 -	247	242.16	2.17E+02	81.60	5.67E+02	2.24
9	277.83	276 -	280	277.94	3.95E+01	37.93	2.81E+02	1.53
10	295.33	289 -	299	295.43	2.64E+02	81.08	7.32E+02	1.93
11	317.09	315 -	320	317.18	3.35E+01	38.12	2.59E+02	2.20
12	328.25	325 -	331	328.33	6.70E+01	44.93	3.18E+02	2.81
13	338.60	334 -	343	338.67	1.42E+02	68.72	5.89E+02	1.70
14	352.07	347 -	356	352.15	5.30E+02	73.33	4.65E+02	1.77
15	429.88	427 -	432	429.91	2.43E+01	28.95	1.45E+02	1.26
16	463.54	459 -	466	463.56	4.34E+01	37.52	2.01E+02	2.22
17	511.13	507 -	515	511.12	1.53E+02	39.91	1.45E+02	2.83
18	583.24	577 -	587	583.20	2.43E+02	56.92	3.02E+02	1.96
19	609.79	604 -	615	609.73	3.47E+02	57.90	2.45E+02	2.08
20	727.59	721 -	732	727.48	3.80E+01	45.48	2.38E+02	1.86
21	795.21	792 -	798	795.07	2.93E+01	24.30	8.33E+01	1.63
22	859.92	854 -	864	859.75	3.32E+01	34.12	1.38E+02	1.99
23	911.20	905 -	916	911.00	1.66E+02	42.05	1.37E+02	1.92
24	969.78	966 -	976	969.56	5.93E+01	41.68	1.75E+02	2.25
25	1120.50	1116 -	1124	1120.21	6.78E+01	28.79	8.64E+01	2.69
26	1131.13	1126 -	1136	1130.84	2.45E+01	28.78	9.30E+01	2.82
27	1238.59	1235 -	1241	1238.25	3.49E+01	23.70	7.62E+01	2.08
28	1288.31	1281 -	1294	1287.95	4.13E+01	29.03	6.94E+01	7.03
29	1297.53	1295 -	1300	1297.17	1.61E+01	13.71	2.58E+01	3.53
30	1402.34	1398 -	1404	1401.95	9.20E+00	12.39	2.16E+01	2.12
31	1407.95	1405 -	1411	1407.55	1.33E+01	10.62	1.14E+01	2.76
M 32	1456.91	1454 -	1465	1456.49	1.27E+01	8.72	1.20E+01	2.73
m 33	1461.26	1454 -	1465	1460.84	5.10E+02	46.36	1.47E+01	2.11
34	1510.17	1505 -	1515	1509.73	2.55E+01	19.79	3.90E+01	2.03
M 35	1582.20	1578 -	1596	1581.74	1.37E+01	10.20	8.98E+00	3.28
m 36	1588.28	1578 -	1596	1587.82	1.84E+01	14.53	1.49E+01	3.28
37	1630.83	1627 -	1633	1630.35	6.63E+00	9.21	1.08E+01	1.97
38	1724.20	1720 -	1726	1723.68	6.71E+00	9.21	1.06E+01	3.02
39	1730.12	1727 -	1732	1729.61	1.60E+01	9.70	6.00E+00	2.25
40	1765.03	1760 -	1771	1764.50	6.00E+01	18.33	1.20E+01	2.44

Analysis Report for 1510064-07

CP2211S04-05

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
41	2103.55	2099 -	2109	2102.91	1.74E+01	14.10	1.91E+01	1.19
42	2118.42	2114 -	2120	2117.78	9.00E+00	6.00	0.00E+00	1.77
43	2182.38	2178 -	2184	2181.71	7.00E+00	5.29	0.00E+00	3.31
44	2203.37	2196 -	2206	2202.70	1.10E+01	14.46	2.21E+01	2.70
45	2615.06	2610 -	2618	2614.28	7.27E+01	17.90	4.69E+00	2.81

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 : 11/3/2015 12:27:48PM

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	63.34	61 -	66	1.62E+02	94.55	1.66E+03	7.49E+01
2	76.12	71 -	83	1.12E+03	193.03	3.85E+03	1.49E+02
3	87.90	85 -	91	1.79E+02	110.55	2.08E+03	8.82E+01
4	93.30	91 -	97	2.19E+02	99.32	1.54E+03	7.79E+01
5	129.11	125 -	134	1.15E+02	106.70	1.56E+03	8.59E+01
6	186.18	182 -	190	2.30E+02	85.93	9.95E+02	6.61E+01
M	238.77	234 -	247	8.84E+02	73.64	4.41E+02	3.45E+01
m	242.04	234 -	247	2.17E+02	81.60	5.67E+02	3.91E+01
9	277.83	276 -	280	3.95E+01	37.93	2.81E+02	2.94E+01
10	295.33	289 -	299	2.64E+02	81.08	7.32E+02	6.11E+01
11	317.09	315 -	320	3.35E+01	38.12	2.59E+02	2.99E+01
12	328.25	325 -	331	6.70E+01	44.93	3.18E+02	3.44E+01
13	338.60	334 -	343	1.42E+02	68.72	5.89E+02	5.30E+01
14	352.07	347 -	356	5.30E+02	73.33	4.65E+02	4.69E+01
15	429.88	427 -	432	2.43E+01	28.95	1.45E+02	2.24E+01
16	463.54	459 -	466	4.34E+01	37.52	2.01E+02	2.89E+01
17	511.13	507 -	515	1.53E+02	39.91	1.45E+02	2.57E+01
18	583.24	577 -	587	2.43E+02	56.92	3.02E+02	3.91E+01
19	609.79	604 -	615	3.47E+02	57.90	2.45E+02	3.64E+01
20	727.59	721 -	732	3.80E+01	45.48	2.38E+02	3.60E+01
21	795.21	792 -	798	2.93E+01	24.30	8.33E+01	1.79E+01
22	859.92	854 -	864	3.32E+01	34.12	1.38E+02	2.64E+01

: 00480

Analysis Report for 1510064-07

CP2211S04-05

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
23	911.20	905 -	916	1.66E+02	42.05	1.37E+02	2.73E+01
24	969.78	966 -	976	5.93E+01	41.68	1.75E+02	3.18E+01
25	1120.50	1116 -	1124	6.78E+01	28.79	8.64E+01	1.94E+01
26	1131.13	1126 -	1136	2.45E+01	28.78	9.30E+01	2.22E+01
27	1238.59	1235 -	1241	3.49E+01	23.70	7.62E+01	1.69E+01
28	1288.31	1281 -	1294	4.13E+01	29.03	6.94E+01	2.14E+01
29	1297.53	1295 -	1300	1.61E+01	13.71	2.58E+01	9.14E+00
30	1402.34	1398 -	1404	9.20E+00	12.39	2.16E+01	8.88E+00
31	1407.95	1405 -	1411	1.33E+01	10.62	1.14E+01	6.34E+00
M	32	1456.91	1454 - 1465	1.27E+01	8.72	1.20E+01	5.68E+00
m	33	1461.26	1454 - 1465	5.10E+02	46.36	1.47E+01	6.31E+00
	34	1510.17	1505 - 1515	2.55E+01	19.79	3.90E+01	1.40E+01
M	35	1582.20	1578 - 1596	1.37E+01	10.20	8.98E+00	4.93E+00
m	36	1588.28	1578 - 1596	1.84E+01	14.53	1.49E+01	6.34E+00
	37	1630.83	1627 - 1633	6.63E+00	9.21	1.08E+01	6.27E+00
	38	1724.20	1720 - 1726	6.71E+00	9.21	1.06E+01	6.26E+00
	39	1730.12	1727 - 1732	1.60E+01	9.70	6.00E+00	4.50E+00
	40	1765.03	1760 - 1771	6.00E+01	18.33	1.20E+01	8.05E+00
	41	2103.55	2099 - 2109	1.74E+01	14.10	1.91E+01	9.34E+00
	42	2118.42	2114 - 2120	9.00E+00	6.00	0.00E+00	0.00E+00
	43	2182.38	2178 - 2184	7.00E+00	5.29	0.00E+00	0.00E+00
	44	2203.37	2196 - 2206	1.10E+01	14.46	2.21E+01	1.06E+01
	45	2615.06	2610 - 2618	7.27E+01	17.90	4.69E+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

PEAK WITH NID REPORT

Peak Analysis Performed on : 11/3/2015 12:27:48PM

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	63.34	61 -	66	63.56	1.62E+02	94.55	1.66E+03	TH-234 TH-230

: 00481

Analysis Report for 1510064-07

CP2211S04-05

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
2	76.12	71 -	83	76.33	1.12E+03	193.03	3.85E+03	.....
3	87.90	85 -	91	88.11	1.79E+02	110.55	2.08E+03	CD-109 SN-126 LU-176
4	93.30	91 -	97	93.50	2.19E+02	99.32	1.54E+03	GA-67
5	129.11	125 -	134	129.30	1.15E+02	106.70	1.56E+03	.....
6	186.18	182 -	190	186.34	2.30E+02	85.93	9.95E+02	RA-226
M 7	238.77	234 -	247	238.90	8.84E+02	73.64	4.41E+02	PB-212
m 8	242.04	234 -	247	242.16	2.17E+02	81.60	5.67E+02	.....
9	277.83	276 -	280	277.94	3.95E+01	37.93	2.81E+02	CM-243 NP-239
10	295.33	289 -	299	295.43	2.64E+02	81.08	7.32E+02	PB-214
11	317.09	315 -	320	317.18	3.35E+01	38.12	2.59E+02	.....
12	328.25	325 -	331	328.33	6.70E+01	44.93	3.18E+02	LA-140
13	338.60	334 -	343	338.67	1.42E+02	68.72	5.89E+02	AC-228
14	352.07	347 -	356	352.15	5.30E+02	73.33	4.65E+02	PB-214
15	429.88	427 -	432	429.91	2.43E+01	28.95	1.45E+02	.....
16	463.54	459 -	466	463.56	4.34E+01	37.52	2.01E+02	SB-125
17	511.13	507 -	515	511.12	1.53E+02	39.91	1.45E+02	.....
18	583.24	577 -	587	583.20	2.43E+02	56.92	3.02E+02	TL-208
19	609.79	604 -	615	609.73	3.47E+02	57.90	2.45E+02	BI-214
20	727.59	721 -	732	727.48	3.80E+01	45.48	2.38E+02	BI-212
21	795.21	792 -	798	795.07	2.93E+01	24.30	8.33E+01	CS-134
22	859.92	854 -	864	859.75	3.32E+01	34.12	1.38E+02	TL-208
23	911.20	905 -	916	911.00	1.66E+02	42.05	1.37E+02	AC-228 LU-172
24	969.78	966 -	976	969.56	5.93E+01	41.68	1.75E+02	AC-228
25	1120.50	1116 -	1124	1120.21	6.78E+01	28.79	8.64E+01	SC-46 BI-214 TA-182
26	1131.13	1126 -	1136	1130.84	2.45E+01	28.78	9.30E+01	I-135
27	1238.59	1235 -	1241	1238.25	3.49E+01	23.70	7.62E+01	CO-56
28	1288.31	1281 -	1294	1287.95	4.13E+01	29.03	6.94E+01	.....
29	1297.53	1295 -	1300	1297.17	1.61E+01	13.71	2.58E+01	.....
30	1402.34	1398 -	1404	1401.95	9.20E+00	12.39	2.16E+01	.....
31	1407.95	1405 -	1411	1407.55	1.33E+01	10.62	1.14E+01	EU-152
M 32	1456.91	1454 -	1465	1456.49	1.27E+01	8.72	1.20E+01	.....
m 33	1461.26	1454 -	1465	1460.84	5.10E+02	46.36	1.47E+01	K-40
34	1510.17	1505 -	1515	1509.73	2.55E+01	19.79	3.90E+01	.....
M 35	1582.20	1578 -	1596	1581.74	1.37E+01	10.20	8.98E+00	.....
m 36	1588.28	1578 -	1596	1587.82	1.84E+01	14.53	1.49E+01	.....
37	1630.83	1627 -	1633	1630.35	6.63E+00	9.21	1.08E+01	.....
38	1724.20	1720 -	1726	1723.68	6.71E+00	9.21	1.06E+01	.....
39	1730.12	1727 -	1732	1729.61	1.60E+01	9.70	6.00E+00	.....
40	1765.03	1760 -	1771	1764.50	6.00E+01	18.33	1.20E+01	BI-214
41	2103.55	2099 -	2109	2102.91	1.74E+01	14.10	1.91E+01	.....
42	2118.42	2114 -	2120	2117.78	9.00E+00	6.00	0.00E+00	.....
43	2182.38	2178 -	2184	2181.71	7.00E+00	5.29	0.00E+00	.....
44	2203.37	2196 -	2206	2202.70	1.10E+01	14.46	2.21E+01	BI-214
45	2615.06	2610 -	2618	2614.28	7.27E+01	17.90	4.69E+00	TL-208

Analysis Report for 1510064-07
CP2211S04-05

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 : 11/3/2015 12:27:48PM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	63.34	1.62E+02	94.55	2.16E-02	1.71E-03
	2	76.12	1.12E+03	193.03	2.38E-02	2.13E-03
	3	87.90	1.79E+02	110.55	2.44E-02	2.52E-03
	4	93.30	2.19E+02	99.32	2.44E-02	2.40E-03
	5	129.11	1.15E+02	106.70	2.25E-02	1.70E-03
	6	186.18	2.30E+02	85.93	1.83E-02	1.42E-03
M	7	238.77	8.84E+02	73.64	1.52E-02	1.18E-03
m	8	242.04	2.17E+02	81.60	1.51E-02	1.17E-03
	9	277.83	3.95E+01	37.93	1.35E-02	1.00E-03
	10	295.33	2.64E+02	81.08	1.28E-02	9.74E-04
	11	317.09	3.35E+01	38.12	1.21E-02	9.43E-04
	12	328.25	6.70E+01	44.93	1.17E-02	9.27E-04
	13	338.60	1.42E+02	68.72	1.14E-02	9.13E-04
	14	352.07	5.30E+02	73.33	1.11E-02	8.93E-04
	15	429.88	2.43E+01	28.95	9.31E-03	7.99E-04
	16	463.54	4.34E+01	37.52	8.72E-03	7.66E-04
	17	511.13	1.53E+02	39.91	8.01E-03	7.18E-04
	18	583.24	2.43E+02	56.92	7.14E-03	6.46E-04
	19	609.79	3.47E+02	57.90	6.87E-03	6.20E-04
	20	727.59	3.80E+01	45.48	5.89E-03	5.14E-04
	21	795.21	2.93E+01	24.30	5.45E-03	4.59E-04
	22	859.92	3.32E+01	34.12	5.10E-03	4.06E-04
	23	911.20	1.66E+02	42.05	4.85E-03	3.72E-04
	24	969.78	5.93E+01	41.68	4.60E-03	3.61E-04
	25	1120.50	6.78E+01	28.79	4.08E-03	3.33E-04
	26	1131.13	2.45E+01	28.78	4.04E-03	3.31E-04
	27	1238.59	3.49E+01	23.70	3.75E-03	3.09E-04
	28	1288.31	4.13E+01	29.03	3.64E-03	2.98E-04
	29	1297.53	1.61E+01	13.71	3.62E-03	2.96E-04
	30	1402.34	9.20E+00	12.39	3.40E-03	2.78E-04
	31	1407.95	1.33E+01	10.62	3.39E-03	2.77E-04
M	32	1456.91	1.27E+01	8.72	3.30E-03	2.70E-04
m	33	1461.26	5.10E+02	46.36	3.29E-03	2.69E-04
	34	1510.17	2.55E+01	19.79	3.21E-03	2.62E-04

Analysis Report for 1510064-07
CP2211S04-05

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
M	35	1582.20	1.37E+01	10.20	3.10E-03	2.51E-04
m	36	1588.28	1.84E+01	14.53	3.09E-03	2.50E-04
	37	1630.83	6.63E+00	9.21	3.03E-03	2.44E-04
	38	1724.20	6.71E+00	9.21	2.91E-03	2.30E-04
	39	1730.12	1.60E+01	9.70	2.90E-03	2.29E-04
	40	1765.03	6.00E+01	18.33	2.86E-03	2.24E-04
	41	2103.55	1.74E+01	14.10	2.54E-03	2.13E-04
	42	2118.42	9.00E+00	6.00	2.52E-03	2.13E-04
	43	2182.38	7.00E+00	5.29	2.48E-03	2.13E-04
	44	2203.37	1.10E+01	14.46	2.46E-03	2.13E-04
	45	2615.06	7.27E+01	17.90	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 : 11/3/2015 12:27:48PM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000028943.CNF

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	1	63.34	1.62E+02	94.55	5.52E+01	2.05E+01	1.06E+02	9.68E+01
	2	76.12	1.12E+03	193.03			1.12E+03	1.93E+02
	3	87.90	1.79E+02	110.55	1.52E+01	5.37E+00	1.64E+02	1.11E+02
	4	93.30	2.19E+02	99.32	9.04E+01	2.62E+01	1.29E+02	1.03E+02
	5	129.11	1.15E+02	106.70			1.15E+02	1.07E+02
	6	186.18	2.30E+02	85.93	3.93E+01	6.56E+00	1.90E+02	8.62E+01
M	7	238.77	8.84E+02	73.64	1.34E+01	2.14E+00	8.70E+02	7.37E+01
m	8	242.04	2.17E+02	81.60	2.69E+00	1.46E+00	2.14E+02	8.16E+01
	9	277.83	3.95E+01	37.93			3.95E+01	3.79E+01
	10	295.33	2.64E+02	81.08			2.64E+02	8.11E+01
	11	317.09	3.35E+01	38.12			3.35E+01	3.81E+01
	12	328.25	6.70E+01	44.93			6.70E+01	4.49E+01
	13	338.60	1.42E+02	68.72			1.42E+02	6.87E+01
	14	352.07	5.30E+02	73.33	3.99E+00	4.73E+00	5.26E+02	7.35E+01
	15	429.88	2.43E+01	28.95			2.43E+01	2.89E+01
	16	463.54	4.34E+01	37.52			4.34E+01	3.75E+01
	17	511.13	1.53E+02	39.91	5.78E+01	4.60E+00	9.57E+01	4.02E+01
	18	583.24	2.43E+02	56.92	5.96E+00	3.46E+00	2.37E+02	5.70E+01
	19	609.79	3.47E+02	57.90	6.71E+00	3.44E+00	3.40E+02	5.80E+01

Analysis Report for 1510064-07

CP2211S04-05

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
20	727.59	3.80E+01	45.48			3.80E+01	4.55E+01
21	795.21	2.93E+01	24.30			2.93E+01	2.43E+01
22	859.92	3.32E+01	34.12			3.32E+01	3.41E+01
23	911.20	1.66E+02	42.05	2.32E+00	2.73E+00	1.64E+02	4.21E+01
24	969.78	5.93E+01	41.68			5.93E+01	4.17E+01
25	1120.50	6.78E+01	28.79	2.00E+00	2.20E+00	6.58E+01	2.89E+01
26	1131.13	2.45E+01	28.78			2.45E+01	2.88E+01
27	1238.59	3.49E+01	23.70			3.49E+01	2.37E+01
28	1288.31	4.13E+01	29.03			4.13E+01	2.90E+01
29	1297.53	1.61E+01	13.71			1.61E+01	1.37E+01
30	1402.34	9.20E+00	12.39			9.20E+00	1.24E+01
31	1407.95	1.33E+01	10.62			1.33E+01	1.06E+01
M 32	1456.91	1.27E+01	8.72			1.27E+01	8.72E+00
m 33	1461.26	5.10E+02	46.36			5.10E+02	4.64E+01
34	1510.17	2.55E+01	19.79			2.55E+01	1.98E+01
M 35	1582.20	1.37E+01	10.20			1.37E+01	1.02E+01
m 36	1588.28	1.84E+01	14.53			1.84E+01	1.45E+01
37	1630.83	6.63E+00	9.21			6.63E+00	9.21E+00
38	1724.20	6.71E+00	9.21			6.71E+00	9.21E+00
39	1730.12	1.60E+01	9.70			1.60E+01	9.70E+00
40	1765.03	6.00E+01	18.33	1.45E+00	1.16E+00	5.85E+01	1.84E+01
41	2103.55	1.74E+01	14.10			1.74E+01	1.41E+01
42	2118.42	9.00E+00	6.00			9.00E+00	6.00E+00
43	2182.38	7.00E+00	5.29			7.00E+00	5.29E+00
44	2203.37	1.10E+01	14.46			1.10E+01	1.45E+01
45	2615.06	7.27E+01	17.90			7.27E+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

AREA CORRECTION REPORT REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 11/3/2015 12:27:48PM
 Ref. Peak Energy : 0.00 Reference Date :
 Peak Ratio : 0.00 Uncertainty : 0.00
 Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000028943.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	63.34	1.62E+02	94.55	5.52E+01	2.05E+01	1.06E+02	9.68E+01
2	76.12	1.12E+03	193.03			1.12E+03	1.93E+02

Analysis Report for 1510064-07

CP2211S04-05

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.	
	3	87.90	1.79E+02	110.55	1.52E+01	5.37E+00	1.64E+02	1.11E+02
	4	93.30	2.19E+02	99.32	9.04E+01	2.62E+01	1.29E+02	1.03E+02
	5	129.11	1.15E+02	106.70			1.15E+02	1.07E+02
	6	186.18	2.30E+02	85.93	3.93E+01	6.56E+00	1.90E+02	8.62E+01
M	7	238.77	8.84E+02	73.64	1.34E+01	2.14E+00	8.70E+02	7.37E+01
m	8	242.04	2.17E+02	81.60	2.69E+00	1.46E+00	2.14E+02	8.16E+01
	9	277.83	3.95E+01	37.93			3.95E+01	3.79E+01
	10	295.33	2.64E+02	81.08			2.64E+02	8.11E+01
	11	317.09	3.35E+01	38.12			3.35E+01	3.81E+01
	12	328.25	6.70E+01	44.93			6.70E+01	4.49E+01
	13	338.60	1.42E+02	68.72			1.42E+02	6.87E+01
	14	352.07	5.30E+02	73.33	3.99E+00	4.73E+00	5.26E+02	7.35E+01
	15	429.88	2.43E+01	28.95			2.43E+01	2.89E+01
	16	463.54	4.34E+01	37.52			4.34E+01	3.75E+01
	17	511.13	1.53E+02	39.91	5.78E+01	4.60E+00	9.57E+01	4.02E+01
	18	583.24	2.43E+02	56.92	5.96E+00	3.46E+00	2.37E+02	5.70E+01
	19	609.79	3.47E+02	57.90	6.71E+00	3.44E+00	3.40E+02	5.80E+01
	20	727.59	3.80E+01	45.48			3.80E+01	4.55E+01
	21	795.21	2.93E+01	24.30			2.93E+01	2.43E+01
	22	859.92	3.32E+01	34.12			3.32E+01	3.41E+01
	23	911.20	1.66E+02	42.05	2.32E+00	2.73E+00	1.64E+02	4.21E+01
	24	969.78	5.93E+01	41.68			5.93E+01	4.17E+01
	25	1120.50	6.78E+01	28.79	2.00E+00	2.20E+00	6.58E+01	2.89E+01
	26	1131.13	2.45E+01	28.78			2.45E+01	2.88E+01
	27	1238.59	3.49E+01	23.70			3.49E+01	2.37E+01
	28	1288.31	4.13E+01	29.03			4.13E+01	2.90E+01
	29	1297.53	1.61E+01	13.71			1.61E+01	1.37E+01
	30	1402.34	9.20E+00	12.39			9.20E+00	1.24E+01
	31	1407.95	1.33E+01	10.62			1.33E+01	1.06E+01
M	32	1456.91	1.27E+01	8.72			1.27E+01	8.72E+00
m	33	1461.26	5.10E+02	46.36			5.10E+02	4.64E+01
	34	1510.17	2.55E+01	19.79			2.55E+01	1.98E+01
M	35	1582.20	1.37E+01	10.20			1.37E+01	1.02E+01
m	36	1588.28	1.84E+01	14.53			1.84E+01	1.45E+01
	37	1630.83	6.63E+00	9.21			6.63E+00	9.21E+00
	38	1724.20	6.71E+00	9.21			6.71E+00	9.21E+00
	39	1730.12	1.60E+01	9.70			1.60E+01	9.70E+00
	40	1765.03	6.00E+01	18.33	1.45E+00	1.16E+00	5.85E+01	1.84E+01
	41	2103.55	1.74E+01	14.10			1.74E+01	1.41E+01
	42	2118.42	9.00E+00	6.00			9.00E+00	6.00E+00
	43	2182.38	7.00E+00	5.29			7.00E+00	5.29E+00
	44	2203.37	1.10E+01	14.46			1.10E+01	1.45E+01
	45	2615.06	7.27E+01	17.90			7.27E+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

Analysis Report for 1510064-07
CP2211S04-05

NUCLIDE IDENTIFICATION REPORT

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

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.968	1460.81 *	10.67	1.85E+01	2.29E+00
GA-67	0.388	93.31 *	35.70	7.51E+01	2.94E+02
		208.95	2.24		
		300.22	16.00		
CD-109	0.997	88.03 *	3.72	2.39E+00	1.64E+00
SN-126	0.982	87.57 *	37.00	2.31E-01	1.58E-01
TL-208	0.984	583.14 *	30.22	1.40E+00	3.60E-01
		860.37 *	4.48	1.85E+00	1.91E+00
		2614.66 *	35.85	1.15E+00	3.04E-01
BI-212	0.748	727.17 *	11.80	6.97E-01	8.36E-01
		1620.62	2.75		
PB-212	0.893	238.63 *	44.60	1.63E+00	1.88E-01
		300.09	3.41		
BI-214	0.963	609.31 *	46.30	1.36E+00	2.63E-01
		1120.29 *	15.10	1.36E+00	6.08E-01
		1764.49 *	15.80	1.65E+00	5.34E-01
		2204.22 *	4.98	1.14E+00	1.50E+00
PB-214	0.997	295.21 *	19.19	1.37E+00	4.32E-01
		351.92 *	37.19	1.63E+00	2.63E-01
RA-226	1.000	186.21 *	3.28	4.04E+00	7.62E+00
AC-228	0.975	338.32 *	11.40	1.39E+00	6.81E-01
		911.07 *	27.70	1.55E+00	4.17E-01
		969.11 *	16.60	9.89E-01	6.99E-01
TH-234	1.000	63.29 *	3.80	1.65E+00	1.51E+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

Analysis Report for 1510064-07

CP2211S04-05

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/3/2015 12:27:48PM
 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	76.12	3.10499E-01		
	5	129.11	3.19426E-02		
m	8	242.04	5.94625E-02		
	9	277.83	1.09861E-02	Tol.	NP-239 CM-243
	11	317.09	9.30044E-03		
	12	328.25	1.86099E-02	Tol.	LA-140
	15	429.88	6.74112E-03		
	16	463.54	1.20428E-02	Tol.	SB-125
	17	511.13	2.65815E-02		
	21	795.21	8.15141E-03	Sum	
	26	1131.13	6.81142E-03	Tol.	I-135
	27	1238.59	9.69939E-03	Tol.	CO-56
	28	1288.31	1.14784E-02		
	29	1297.53	4.47318E-03		
	30	1402.34	2.55556E-03		
	31	1407.95	3.69883E-03	Tol.	EU-152
M	32	1456.91	3.52096E-03		
	34	1510.17	7.08642E-03		
M	35	1582.20	3.81085E-03		
m	36	1588.28	5.12426E-03	Sum	
	37	1630.83	1.84028E-03		
	38	1724.20	1.86343E-03		
	39	1730.12	4.44444E-03	Sum	
	41	2103.55	4.84568E-03	S-Esc	
	42	2118.42	2.50000E-03		
	43	2182.38	1.94444E-03		

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

Analysis Report for 1510064-07

CP2211S04-05

NUCLIDE IDENTIFICATION REPORT

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

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.96	1460.81 *	10.67	1.85E+01	2.29E+00
GA-67	0.38	93.31 *	35.70	7.51E+01	2.94E+02
		208.95	2.24		
		300.22	16.00		
		88.03 *	3.72	2.39E+00	1.64E+00
SN-126	0.98	87.57 *	37.00	2.31E-01	1.58E-01
TL-208	0.98	583.14 *	30.22	1.40E+00	3.60E-01
		860.37 *	4.48	1.85E+00	1.91E+00
		2614.66 *	35.85	1.15E+00	3.04E-01
		727.17 *	11.80	6.97E-01	8.36E-01
BI-212	0.74	1620.62	2.75		
		238.63 *	44.60	1.63E+00	1.88E-01
PB-212	0.89	300.09	3.41		
		609.31 *	46.30	1.36E+00	2.63E-01
BI-214	0.96	1120.29 *	15.10	1.36E+00	6.08E-01
		1764.49 *	15.80	1.65E+00	5.34E-01
		2204.22 *	4.98	1.14E+00	1.50E+00
		295.21 *	19.19	1.37E+00	4.32E-01
PB-214	0.99	351.92 *	37.19	1.63E+00	2.63E-01
		186.21 *	3.28	4.04E+00	7.62E+00
RA-226	1.00	338.32 *	11.40	1.39E+00	6.81E-01
AC-228	0.97	911.07 *	27.70	1.55E+00	4.17E-01
		969.11 *	16.60	9.89E-01	6.99E-01
		63.29 *	3.80	1.65E+00	1.51E+00
TH-234	1.00				

* = Energy line found in the spectrum.

- = Manually added nuclide.

? = Manually edited nuclide.

@ = Energy line not used for Weighted Mean Activity

Energy Tolerance : 1.000 keV

Nuclide confidence index threshold = 0.30

Errors quoted at 2.000sigma

INTERFERENCE CORRECTED REPORT

Analysis Report for 1510064-07
CP2211S04-05

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
K-40	0.968	1.85E+01	2.29E+00	
GA-67	0.388	7.51E+01	2.94E+02	
? CD-109	0.997	2.39E+00	1.64E+00	
? SN-126	0.982	2.31E-01	1.58E-01	
TL-208	0.984	1.26E+00	2.31E-01	
BI-212	0.748	6.97E-01	8.36E-01	
PB-212	0.893	1.63E+00	1.88E-01	
BI-214	0.963	1.40E+00	2.17E-01	
PB-214	0.997	1.56E+00	2.25E-01	
RA-226	1.000	4.04E+00	7.62E+00	
AC-228	0.975	1.40E+00	3.17E-01	
TH-234	1.000	1.65E+00	1.51E+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 1510064-07
CP2211S04-05

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/3/2015 12:27:48PM
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	76.12	3.10499E-01	8.63	
	5	129.11	3.19426E-02	46.39	
m	8	242.04	5.94625E-02	19.06	
	9	277.83	1.09861E-02	47.95	Tol. NP-239 CM-243
	11	317.09	9.30044E-03	56.92	
	12	328.25	1.86099E-02	33.53	Tol. LA-140
	15	429.88	6.74112E-03	59.64	
	16	463.54	1.20428E-02	43.28	Tol. SB-125
	17	511.13	2.65815E-02	20.99	
	21	795.21	8.15141E-03	41.40	Sum
	26	1131.13	6.81142E-03	58.69	Tol. I-135
	27	1238.59	9.69939E-03	33.93	Tol. CO-56
	28	1288.31	1.14784E-02	35.13	
	29	1297.53	4.47318E-03	42.57	
	30	1402.34	2.55556E-03	67.33	
	31	1407.95	3.69883E-03	39.87	Tol. EU-152
M	32	1456.91	3.52096E-03	34.39	
	34	1510.17	7.08642E-03	38.79	
M	35	1582.20	3.81085E-03	37.17	
m	36	1588.28	5.12426E-03	39.37	Sum
	37	1630.83	1.84028E-03	69.48	
	38	1724.20	1.86343E-03	68.62	
	39	1730.12	4.44444E-03	30.30	Sum
	41	2103.55	4.84568E-03	40.41	S-Esc
	42	2118.42	2.50000E-03	33.33	
	43	2182.38	1.94444E-03	37.80	

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 1510064-07
CP2211S04-05

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	6.09E-02	1.13E+00	1.13E+00
+ NA-22	1274.54	99.94	-3.05E-02	1.19E-01	1.19E-01
+ NA-24	1368.53	99.99	3.18E+11	5.92E+11	4.22E+12
	2754.09	99.86	0.00E+00		5.92E+11
+ AL-26	1808.65	99.76	3.64E-02	9.14E-02	9.14E-02
+ K-40	1460.81	* 10.67	1.85E+01	9.61E-01	9.61E-01
+ @ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26
+ TI-44	67.88	94.40	2.78E-03	7.74E-02	7.74E-02
	78.34	96.00	2.22E-01		9.57E-02
+ SC-46	889.25	99.98	-7.72E-03	1.10E-01	1.10E-01
	1120.51	99.99	2.70E-01		1.96E-01
+ V-48	983.52	99.98	1.49E-01	3.45E-01	3.45E-01
	1312.10	97.50	-1.74E-01		3.89E-01
+ CR-51	320.08	9.83	2.93E-01	1.44E+00	1.44E+00
+ MN-54	834.83	99.97	2.23E-02	9.97E-02	9.97E-02
+ CO-56	846.75	99.96	-2.53E-03	1.22E-01	1.22E-01
	1037.75	14.03	9.90E-02		9.53E-01
	1238.25	67.00	1.86E-01		2.75E-01
	1771.40	15.51	-6.77E-02		5.86E-01
	2598.48	16.90	-4.30E-02		3.16E-01
+ CO-57	122.06	85.51	1.00E-03	6.60E-02	6.60E-02
	136.48	10.60	-1.26E-01		5.44E-01
+ CO-58	810.76	99.40	-4.01E-02	1.15E-01	1.15E-01
+ FE-59	1099.22	56.50	-5.06E-02	3.08E-01	3.08E-01
	1291.56	43.20	-3.16E-01		4.04E-01
+ CO-60	1173.22	100.00	1.59E-02	1.13E-01	1.17E-01
	1332.49	100.00	8.20E-03		1.13E-01
+ ZN-65	1115.52	50.75	2.99E-03	1.98E-01	1.98E-01
+ GA-67	93.31	* 35.70	7.51E+01	9.77E+01	9.77E+01
	208.95	2.24	7.31E+02		1.39E+03
	300.22	16.00	1.06E+02		1.97E+02
+ SE-75	121.11	16.70	-7.83E-02	1.07E-01	3.65E-01
	136.00	59.20	-1.81E-02		1.07E-01
	264.65	59.80	-9.29E-02		1.31E-01
	279.53	25.20	2.74E-02		3.36E-01
	400.65	11.40	-9.89E-02		7.49E-01
+ RB-82	776.52	13.00	5.17E-01	1.53E+00	1.53E+00
+ RB-83	520.41	46.00	1.52E-01	2.21E-01	2.21E-01
	529.64	30.30	7.73E-02		3.47E-01
	552.65	16.40	-4.41E-02		6.10E-01

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	KR-85	513.99	0.43	-7.40E-01	2.28E+01	2.28E+01
+	SR-85	513.99	99.27	-4.35E-03	1.34E-01	1.34E-01
+	Y-88	898.02	93.40	4.41E-02	1.04E-01	1.21E-01
		1836.01	99.38	1.91E-02		1.04E-01
+	NB-93M	16.57	9.43	2.99E+01	8.63E+01	8.63E+01
+	NB-94	702.63	100.00	2.65E-02	8.21E-02	1.04E-01
		871.10	100.00	-5.96E-02		8.21E-02
+	NB-95	765.79	99.81	5.30E-02	1.80E-01	1.80E-01
+	NB-95M	235.69	25.00	3.63E+02	1.14E+02	1.14E+02
+	ZR-95	724.18	43.70	-3.95E-02	2.27E-01	3.21E-01
		756.72	55.30	4.01E-02		2.27E-01
+	MO-99	181.06	6.20	5.19E+01	7.99E+02	1.12E+03
		739.58	12.80	3.91E+01		7.99E+02
		778.00	4.50	-1.15E+03		2.32E+03
+	RU-103	497.08	89.00	-2.18E-02	1.44E-01	1.44E-01
+	RU-106	621.84	9.80	9.08E-02	8.84E-01	8.84E-01
+	AG-108M	433.93	89.90	7.67E-03	7.90E-02	7.90E-02
		614.37	90.40	-1.15E-02		1.09E-01
		722.95	90.50	-1.69E-01		1.01E-01
+	CD-109	88.03	* 3.72	2.39E+00	2.63E+00	2.63E+00
+	AG-110M	657.75	93.14	1.87E-02	1.00E-01	1.00E-01
		677.61	10.53	-1.36E-01		8.27E-01
		706.67	16.46	4.16E-01		6.88E-01
		763.93	21.98	-6.68E-01		4.33E-01
		884.67	71.63	-7.73E-03		1.31E-01
		1384.27	23.94	-1.16E-01		4.65E-01
+	CD-113M	263.70	0.02	-3.63E+00	2.92E+02	2.92E+02
+	SN-113	255.12	1.93	-9.97E-01	1.37E-01	4.23E+00
		391.69	64.90	7.14E-02		1.37E-01
+	TE123M	159.00	84.10	1.67E-02	7.91E-02	7.91E-02
+	SB-124	602.71	97.87	2.44E-02	1.18E-01	1.18E-01
		645.85	7.26	-1.34E-01		1.46E+00
		722.78	11.10	-1.91E+00		1.14E+00
		1691.02	49.00	1.17E-01		2.74E-01
+	I-125	35.49	6.49	-1.27E+00	3.31E+00	3.31E+00
+	SB-125	176.33	6.89	-3.40E-01	2.59E-01	8.36E-01
		427.89	29.33	4.73E-03		2.59E-01
		463.38	10.35	3.99E-01		7.99E-01
		600.56	17.80	-5.38E-02		4.51E-01
		635.90	11.32	-1.65E-01		7.26E-01
+	SB-126	414.70	83.30	-3.50E-01	4.38E-01	4.41E-01
		666.33	99.60	1.17E-01		4.38E-01
		695.00	99.60	-1.01E-02		4.70E-01
		720.50	53.80	-3.63E-02		7.40E-01
+	SN-126	87.57	* 37.00	2.31E-01	2.54E-01	2.54E-01
+	SB-127	473.00	25.00	1.50E+01	3.67E+01	5.16E+01
		685.20	35.70	-7.98E+00		3.67E+01
		783.80	14.70	4.06E+01		1.02E+02

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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	-5.82E-02	4.80E-01	4.80E-01
		33.60	13.20	-6.36E-01		1.34E+00
		39.58	7.52	2.85E-01		1.63E+00
+	I-131	284.30	6.05	5.56E+00	1.02E+00	1.33E+01
		364.48	81.20	-7.00E-02		1.02E+00
		636.97	7.26	-5.78E+00		1.25E+01
		722.89	1.80	-9.66E+01		5.76E+01
+	TE-132	49.72	13.10	-2.96E+02	3.29E+01	2.59E+02
		228.16	88.00	1.28E+01		3.29E+01
+	BA-133	81.00	33.00	-1.10E+00	1.72E-01	1.98E-01
		302.84	17.80	3.80E-01		4.33E-01
		356.01	60.00	1.33E-02		1.72E-01
+	I-133	529.87	86.30	1.33E+08	5.97E+08	5.97E+08
+	XE-133	81.00	38.00	-3.94E+01	7.10E+00	7.10E+00
+	CS-134	563.23	8.38	6.15E-01	9.16E-02	9.98E-01
		569.32	15.43	-2.22E-01		5.15E-01
		604.70	97.60	2.42E-03		9.16E-02
		795.84	85.40	5.55E-02		1.16E-01
		801.93	8.73	-4.57E-01		9.85E-01
+	CS-135	268.24	16.00	2.83E-01	4.69E-01	4.69E-01
+	@ 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	1.66E+00	3.98E-01	3.53E+00
		163.89	4.61	-2.52E+00		5.26E+00
		176.55	13.56	7.24E-02		1.86E+00
		273.65	12.66	4.84E-01		2.61E+00
		340.57	48.50	1.48E+00		8.99E-01
		818.50	99.70	9.15E-02		3.98E-01
		1048.07	79.60	-9.62E-02		5.72E-01
		1235.34	19.70	-1.68E-01		2.98E+00
+	CS-137	661.65	85.12	-1.17E-03	1.04E-01	1.04E-01
+	LA-138	788.74	34.00	1.05E-01	1.47E-01	2.68E-01
		1435.80	66.00	3.47E-02		1.47E-01
+	CE-139	165.85	80.35	1.47E-02	8.28E-02	8.28E-02
+	BA-140	162.64	6.70	-9.92E-01	1.40E+00	3.77E+00
		304.84	4.50	-5.51E+00		7.08E+00
		423.70	3.20	9.14E-01		1.09E+01
		437.55	2.00	-1.89E-01		1.65E+01
		537.32	25.00	-6.11E-01		1.40E+00
+	LA-140	328.77	20.50	7.37E-01	4.80E-01	1.80E+00
		487.03	45.50	-1.94E-01		7.74E-01
		815.85	23.50	-4.30E-01		1.70E+00
		1596.49	95.49	5.16E-02		4.80E-01
+	CE-141	145.44	48.40	9.54E-03	2.11E-01	2.11E-01
+	CE-143	57.36	11.80	3.47E+05	3.68E+05	9.79E+05
		293.26	42.00	8.62E+05		3.68E+05
		664.55	5.20	-2.57E+05		2.52E+06
+	CE-144	133.54	10.80	-4.40E-02	5.40E-01	5.40E-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	4.03E-02	8.90E-02	2.06E-01
		618.01	98.60	2.32E-02		8.90E-02
		696.49	99.49	-3.54E-03		1.03E-01
+	PM-145	36.85	21.70	-2.07E-02	3.53E-01	6.61E-01
		37.36	39.70	6.13E-02		3.53E-01
		42.30	15.10	-1.09E+00		6.93E-01
		72.40	2.31	-5.38E+00		3.79E+00
+	PM-146	453.90	39.94	-7.67E-02	1.82E-01	1.82E-01
		735.90	14.01	-2.94E-01		5.66E-01
		747.13	13.10	5.00E-01		7.05E-01
+	ND-147	91.11	28.90	-1.21E+00	1.47E+00	1.47E+00
		531.02	13.10	1.28E+00		3.81E+00
+	PM-149	285.90	3.10	5.13E+03	1.57E+04	1.57E+04
+	EU-152	121.78	20.50	3.90E-03	2.57E-01	2.57E-01
		244.69	5.40	-1.26E+00		1.57E+00
		344.27	19.13	5.93E-03		3.82E-01
		778.89	9.20	-1.65E-01		9.32E-01
		964.01	10.40	3.94E-01		1.11E+00
		1085.78	7.22	2.14E-01		1.46E+00
		1112.02	9.60	1.52E-01		1.03E+00
		1407.95	14.94	-4.58E-01		6.07E-01
+	GD-153	97.43	31.30	1.27E-01	1.83E-01	1.83E-01
		103.18	22.20	-1.40E-02		2.53E-01
+	EU-154	123.07	40.50	4.13E-03	1.29E-01	1.29E-01
		723.30	19.70	-7.83E-01		4.66E-01
		873.19	11.50	-5.09E-02		7.66E-01
		996.32	10.30	-2.29E-01		8.78E-01
		1004.76	17.90	2.14E-02		5.32E-01
		1274.45	35.50	-8.47E-02		3.30E-01
+	EU-155	86.50	30.90	2.19E-01	2.43E-01	2.43E-01
		105.30	20.70	9.38E-02		2.53E-01
+	EU-156	811.77	10.40	3.82E-01	3.08E+00	3.08E+00
		1153.47	7.20	2.62E-01		6.08E+00
		1230.71	8.90	3.23E-02		4.93E+00
+	HO-166M	184.41	72.60	1.84E-01	1.00E-01	1.00E-01
		280.45	29.60	-1.37E-02		2.40E-01
		410.94	11.10	2.92E-01		7.23E-01
		711.69	54.10	3.96E-02		1.69E-01
+	TM-171	66.72	0.14	3.07E+01	5.47E+01	5.47E+01
+	HF-172	81.75	4.52	-4.57E+00	5.00E-01	1.48E+00
		125.81	11.30	-3.23E-01		5.00E-01
+	LU-172	181.53	20.60	-2.04E-01	3.04E+00	5.06E+00
		810.06	16.63	-1.20E+00		9.88E+00
		912.12	15.25	4.76E+01		2.14E+01
		1093.66	62.50	-9.04E-01		3.04E+00
+	LU-173	100.72	5.24	3.97E-01	3.81E-01	1.06E+00
		272.11	21.20	3.50E-01		3.81E-01
+	HF-175	343.40	84.00	1.77E-03	1.20E-01	1.20E-01
+	LU-176	88.34	13.30	8.38E-01	7.31E-02	5.66E-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>
	LU-176	201.83	86.00	1.51E-03	7.31E-02	8.35E-02
		306.78	94.00	-3.83E-02		7.31E-02
+	TA-182	67.75	41.20	7.54E-03	2.10E-01	2.10E-01
		1121.30	34.90	6.78E-01		5.28E-01
		1189.05	16.23	-4.79E-02		8.30E-01
		1221.41	26.98	-1.48E-01		5.20E-01
		1231.02	11.44	-2.19E-01		1.19E+00
+	IR-192	308.46	29.68	1.02E-01	1.92E-01	3.14E-01
		468.07	48.10	-2.42E-02		1.92E-01
+	HG-203	279.19	77.30	-1.42E-02	1.39E-01	1.39E-01
+	BI-207	569.67	97.72	9.57E-03	8.43E-02	8.43E-02
		1063.62	74.90	2.43E-02		1.31E-01
+	TL-208	583.14	* 30.22	1.40E+00	1.85E-01	4.82E-01
		860.37	* 4.48	1.85E+00		3.10E+00
		2614.66	* 35.85	1.15E+00		1.85E-01
+	BI-210M	262.00	45.00	4.17E-02	1.53E-01	1.53E-01
		300.00	23.00	1.84E-01		3.43E-01
+	PB-210	46.50	4.25	2.12E+00	2.36E+00	2.36E+00
+	PB-211	404.84	2.90	-2.45E+00	2.47E+00	2.47E+00
		831.96	2.90	-8.57E-01		3.01E+00
+	BI-212	727.17	* 11.80	6.97E-01	1.37E+00	1.37E+00
		1620.62	2.75	5.71E-01		2.87E+00
+	PB-212	238.63	* 44.60	1.63E+00	3.04E-01	3.04E-01
		300.09	3.41	1.24E+00		2.32E+00
+	BI-214	609.31	* 46.30	1.36E+00	3.06E-01	3.06E-01
		1120.29	* 15.10	1.36E+00		8.69E-01
		1764.49	* 15.80	1.65E+00		5.48E-01
		2204.22	* 4.98	1.14E+00		2.48E+00
+	PB-214	295.21	* 19.19	1.37E+00	3.01E-01	6.47E-01
		351.92	* 37.19	1.63E+00		3.01E-01
+	RN-219	401.80	6.50	9.33E-03	1.12E+00	1.12E+00
+	RA-223	323.87	3.88	4.66E-01	1.82E+00	1.82E+00
+	RA-224	240.98	3.95	2.22E+01	3.69E+00	3.69E+00
+	RA-225	40.00	31.00	2.52E-01	1.44E+00	1.44E+00
+	RA-226	186.21	* 3.28	4.04E+00	2.91E+00	2.91E+00
+	TH-227	50.10	8.40	-1.14E+00	9.97E-01	9.97E-01
		236.00	11.50	3.53E+00		1.10E+00
		256.20	6.30	2.19E-01		1.11E+00
+	AC-228	338.32	* 11.40	1.39E+00	5.47E-01	1.06E+00
		911.07	* 27.70	1.55E+00		5.47E-01
		969.11	* 16.60	9.89E-01		1.11E+00
+	TH-230	48.44	16.90	-2.89E-01	5.43E-01	5.43E-01
		62.85	4.60	2.57E+00		1.80E+00
		67.67	0.37	7.09E-01		1.98E+01
+	PA-231	283.67	1.60	1.85E+00	3.34E+00	4.43E+00
		302.67	2.30	2.93E+00		3.34E+00
+	TH-231	25.64	14.70	-3.52E-01	1.03E+00	3.54E+00
		84.21	6.40	-2.14E+00		1.03E+00

Analysis Report for 1510064-07

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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	1.29E-01	3.80E-01	3.80E-01
+	PA-234	131.20	20.40	1.84E-01	2.93E-01	2.93E-01
		733.99	8.80	3.84E-02		9.21E-01
		946.00	12.00	-2.29E-01		7.58E-01
+	PA-234M	1001.03	0.92	-3.02E-01	1.05E+01	1.05E+01
+	TH-234	63.29	* 3.80	1.65E+00	2.46E+00	2.46E+00
+	U-235	143.76	10.50	2.98E-01	5.48E-01	5.48E-01
		163.35	4.70	-5.59E-01		1.17E+00
		205.31	4.70	-2.38E+00		1.53E+00
+	NP-237	86.50	12.60	5.30E-01	5.89E-01	5.89E-01
+	NP-239	106.10	22.70	-2.31E+02	8.90E+02	8.90E+02
		228.18	10.70	1.05E+03		2.69E+03
		277.60	14.10	-2.43E+02		2.00E+03
+	AM-241	59.54	35.90	8.68E-02	2.17E-01	2.17E-01
+	AM-243	74.67	66.00	3.34E-01	1.54E-01	1.54E-01
+	CM-243	209.75	3.29	1.03E+00	5.03E-01	2.35E+00
		228.14	10.60	2.66E-01		6.81E-01
		277.60	14.00	-6.11E-02		5.03E-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	1.13E+00	1.13E+00	6.09E-02	5.37E-01
NA-22	1274.54	99.94	1.19E-01	1.19E-01	-3.05E-02	5.47E-02
NA-24	1368.53	99.99	4.22E+12	5.92E+11	3.18E+11	1.92E+12
	2754.09	99.86	5.92E+11		0.00E+00	0.00E+00

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CP2211S04-05

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	9.14E-02	9.14E-02	3.64E-02	3.96E-02
+ K-40	1460.81	* 10.67	9.61E-01	9.61E-01	1.85E+01	4.32E-01
@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26	1.00E+20
TI-44	67.88	94.40	7.74E-02	7.74E-02	2.78E-03	3.79E-02
	78.34	96.00	9.57E-02		2.22E-01	4.71E-02
SC-46	889.25	99.98	1.10E-01	1.10E-01	-7.72E-03	5.06E-02
	1120.51	99.99	1.96E-01		2.70E-01	9.27E-02
V-48	983.52	99.98	3.45E-01	3.45E-01	1.49E-01	1.60E-01
	1312.10	97.50	3.89E-01		-1.74E-01	1.78E-01
CR-51	320.08	9.83	1.44E+00	1.44E+00	2.93E-01	6.92E-01
MN-54	834.83	99.97	9.97E-02	9.97E-02	2.23E-02	4.63E-02
CO-56	846.75	99.96	1.22E-01	1.22E-01	-2.53E-03	5.69E-02
	1037.75	14.03	9.53E-01		9.90E-02	4.40E-01
	1238.25	67.00	2.75E-01		1.86E-01	1.29E-01
	1771.40	15.51	5.86E-01		-6.77E-02	2.43E-01
	2598.48	16.90	3.16E-01		-4.30E-02	1.00E-01
CO-57	122.06	85.51	6.60E-02	6.60E-02	1.00E-03	3.21E-02
	136.48	10.60	5.44E-01		-1.26E-01	2.64E-01
CO-58	810.76	99.40	1.15E-01	1.15E-01	-4.01E-02	5.33E-02
FE-59	1099.22	56.50	3.08E-01	3.08E-01	-5.06E-02	1.43E-01
	1291.56	43.20	4.04E-01		-3.16E-01	1.85E-01
CO-60	1173.22	100.00	1.17E-01	1.13E-01	1.59E-02	5.39E-02
	1332.49	100.00	1.13E-01		8.20E-03	5.14E-02
ZN-65	1115.52	50.75	1.98E-01	1.98E-01	2.99E-03	9.01E-02
+ GA-67	93.31	* 35.70	9.77E+01	9.77E+01	7.51E+01	4.81E+01
	208.95	2.24	1.39E+03		7.31E+02	6.75E+02
	300.22	16.00	1.97E+02		1.06E+02	9.52E+01
SE-75	121.11	16.70	3.65E-01	1.07E-01	-7.83E-02	1.77E-01
	136.00	59.20	1.07E-01		-1.81E-02	5.19E-02
	264.65	59.80	1.31E-01		-9.29E-02	6.32E-02
	279.53	25.20	3.36E-01		2.74E-02	1.62E-01
	400.65	11.40	7.49E-01		-9.89E-02	3.56E-01
RB-82	776.52	13.00	1.53E+00	1.53E+00	5.17E-01	7.14E-01
RB-83	520.41	46.00	2.21E-01	2.21E-01	1.52E-01	1.04E-01
	529.64	30.30	3.47E-01		7.73E-02	1.64E-01
	552.65	16.40	6.10E-01		-4.41E-02	2.87E-01
KR-85	513.99	0.43	2.28E+01	2.28E+01	-7.40E-01	1.09E+01
SR-85	513.99	99.27	1.34E-01	1.34E-01	-4.35E-03	6.40E-02
Y-88	898.02	93.40	1.21E-01	1.04E-01	4.41E-02	5.59E-02
	1836.01	99.38	1.04E-01		1.91E-02	4.46E-02
NB-93M	16.57	9.43	8.63E+01	8.63E+01	2.99E+01	4.21E+01
NB-94	702.63	100.00	1.04E-01	8.21E-02	2.65E-02	4.93E-02
	871.10	100.00	8.21E-02		-5.96E-02	3.76E-02
NB-95	765.79	99.81	1.80E-01	1.80E-01	5.30E-02	8.48E-02
NB-95M	235.69	25.00	1.14E+02	1.14E+02	3.63E+02	5.58E+01
ZR-95	724.18	43.70	3.21E-01	2.27E-01	-3.95E-02	1.52E-01
	756.72	55.30	2.27E-01		4.01E-02	1.06E-01
MO-99	181.06	6.20	1.12E+03	7.99E+02	5.19E+01	5.40E+02
	739.58	12.80	7.99E+02		3.91E+01	3.72E+02
	778.00	4.50	2.32E+03		-1.15E+03	1.08E+03
RU-103	497.08	89.00	1.44E-01	1.44E-01	-2.18E-02	6.83E-02
RU-106	621.84	9.80	8.84E-01	8.84E-01	9.08E-02	4.14E-01
AG-108M	433.93	89.90	7.90E-02	7.90E-02	7.67E-03	3.74E-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	1.09E-01	7.90E-02	-1.15E-02	5.18E-02
	722.95	90.50	1.01E-01		-1.69E-01	4.72E-02
+ CD-109	88.03 *	3.72	2.63E+00	2.63E+00	2.39E+00	1.30E+00
AG-110M	657.75	93.14	1.00E-01	1.00E-01	1.87E-02	4.69E-02
	677.61	10.53	8.27E-01		-1.36E-01	3.85E-01
	706.67	16.46	6.88E-01		4.16E-01	3.25E-01
	763.93	21.98	4.33E-01		-6.68E-01	2.02E-01
	884.67	71.63	1.31E-01		-7.73E-03	6.03E-02
	1384.27	23.94	4.65E-01		-1.16E-01	2.10E-01
CD-113M	263.70	0.02	2.92E+02	2.92E+02	-3.63E+00	1.41E+02
SN-113	255.12	1.93	4.23E+00	1.37E-01	-9.97E-01	2.04E+00
	391.69	64.90	1.37E-01		7.14E-02	6.52E-02
TE123M	159.00	84.10	7.91E-02	7.91E-02	1.67E-02	3.84E-02
SB-124	602.71	97.87	1.18E-01	1.18E-01	2.44E-02	5.53E-02
	645.85	7.26	1.46E+00		-1.34E-01	6.80E-01
	722.78	11.10	1.14E+00		-1.91E+00	5.33E-01
	1691.02	49.00	2.74E-01		1.17E-01	1.20E-01
I-125	35.49	6.49	3.31E+00	3.31E+00	-1.27E+00	1.61E+00
SB-125	176.33	6.89	8.36E-01	2.59E-01	-3.40E-01	4.05E-01
	427.89	29.33	2.59E-01		4.73E-03	1.23E-01
	463.38	10.35	7.99E-01		3.99E-01	3.80E-01
	600.56	17.80	4.51E-01		-5.38E-02	2.11E-01
	635.90	11.32	7.26E-01		-1.65E-01	3.40E-01
SB-126	414.70	83.30	4.41E-01	4.38E-01	-3.50E-01	2.10E-01
	666.33	99.60	4.38E-01		1.17E-01	2.06E-01
	695.00	99.60	4.70E-01		-1.01E-02	2.21E-01
	720.50	53.80	7.40E-01		-3.63E-02	3.44E-01
+ SN-126	87.57 *	37.00	2.54E-01	2.54E-01	2.31E-01	1.25E-01
SB-127	473.00	25.00	5.16E+01	3.67E+01	1.50E+01	2.45E+01
	685.20	35.70	3.67E+01		-7.98E+00	1.71E+01
	783.80	14.70	1.02E+02		4.06E+01	4.77E+01
I-129	29.78	57.00	4.80E-01	4.80E-01	-5.82E-02	2.34E-01
	33.60	13.20	1.34E+00		-6.36E-01	6.52E-01
	39.58	7.52	1.63E+00		2.85E-01	7.93E-01
I-131	284.30	6.05	1.33E+01	1.02E+00	5.56E+00	6.42E+00
	364.48	81.20	1.02E+00		-7.00E-02	4.88E-01
	636.97	7.26	1.25E+01		-5.78E+00	5.82E+00
	722.89	1.80	5.76E+01		-9.66E+01	2.70E+01
TE-132	49.72	13.10	2.59E+02	3.29E+01	-2.96E+02	1.27E+02
	228.16	88.00	3.29E+01		1.28E+01	1.59E+01
BA-133	81.00	33.00	1.98E-01	1.72E-01	-1.10E+00	9.68E-02
	302.84	17.80	4.33E-01		3.80E-01	2.09E-01
	356.01	60.00	1.72E-01		1.33E-02	8.32E-02
I-133	529.87	86.30	5.97E+08	5.97E+08	1.33E+08	2.83E+08
XE-133	81.00	38.00	7.10E+00	7.10E+00	-3.94E+01	3.47E+00
CS-134	563.23	8.38	9.98E-01	9.16E-02	6.15E-01	4.70E-01
	569.32	15.43	5.15E-01		-2.22E-01	2.42E-01
	604.70	97.60	9.16E-02		2.42E-03	4.32E-02
	795.84	85.40	1.16E-01		5.55E-02	5.43E-02
	801.93	8.73	9.85E-01		-4.57E-01	4.55E-01
CS-135	268.24	16.00	4.69E-01	4.69E-01	2.83E-01	2.27E-01
@ I-135	1131.51	22.50	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	1260.41	28.60	1.00E+26		1.00E+26	1.00E+20

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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	1.00E+26	1.00E+26	1.00E+26	1.00E+20
CS-136	153.22	7.46	3.53E+00	3.98E-01	1.66E+00	1.71E+00
	163.89	4.61	5.26E+00		-2.52E+00	2.55E+00
	176.55	13.56	1.86E+00		7.24E-02	8.99E-01
	273.65	12.66	2.61E+00		4.84E-01	1.26E+00
	340.57	48.50	8.99E-01		1.48E+00	4.36E-01
	818.50	99.70	3.98E-01		9.15E-02	1.84E-01
	1048.07	79.60	5.72E-01		-9.62E-02	2.64E-01
	1235.34	19.70	2.98E+00		-1.68E-01	1.39E+00
CS-137	661.65	85.12	1.04E-01	1.04E-01	-1.17E-03	4.88E-02
LA-138	788.74	34.00	2.68E-01	1.47E-01	1.05E-01	1.25E-01
	1435.80	66.00	1.47E-01		3.47E-02	6.59E-02
CE-139	165.85	80.35	8.28E-02	8.28E-02	1.47E-02	4.02E-02
BA-140	162.64	6.70	3.77E+00	1.40E+00	-9.92E-01	1.83E+00
	304.84	4.50	7.08E+00		-5.51E+00	3.40E+00
	423.70	3.20	1.09E+01		9.14E-01	5.20E+00
	437.55	2.00	1.65E+01		-1.89E-01	7.84E+00
	537.32	25.00	1.40E+00		-6.11E-01	6.60E-01
LA-140	328.77	20.50	1.80E+00	4.80E-01	7.37E-01	8.67E-01
	487.03	45.50	7.74E-01		-1.94E-01	3.66E-01
	815.85	23.50	1.70E+00		-4.30E-01	7.85E-01
	1596.49	95.49	4.80E-01		5.16E-02	2.13E-01
CE-141	145.44	48.40	2.11E-01	2.11E-01	9.54E-03	1.03E-01
CE-143	57.36	11.80	9.79E+05	3.68E+05	3.47E+05	4.78E+05
	293.26	42.00	3.68E+05		8.62E+05	1.79E+05
	664.55	5.20	2.52E+06		-2.57E+05	1.18E+06
CE-144	133.54	10.80	5.40E-01	5.40E-01	-4.40E-02	2.63E-01
PM-144	476.78	42.00	2.06E-01	8.90E-02	4.03E-02	9.78E-02
	618.01	98.60	8.90E-02		2.32E-02	4.18E-02
	696.49	99.49	1.03E-01		-3.54E-03	4.85E-02
PM-145	36.85	21.70	6.61E-01	3.53E-01	-2.07E-02	3.22E-01
	37.36	39.70	3.53E-01		6.13E-02	1.72E-01
	42.30	15.10	6.93E-01		-1.09E+00	3.38E-01
	72.40	2.31	3.79E+00		-5.38E+00	1.86E+00
PM-146	453.90	39.94	1.82E-01	1.82E-01	-7.67E-02	8.60E-02
	735.90	14.01	5.66E-01		-2.94E-01	2.61E-01
	747.13	13.10	7.05E-01		5.00E-01	3.30E-01
ND-147	91.11	28.90	1.47E+00	1.47E+00	-1.21E+00	7.18E-01
	531.02	13.10	3.81E+00		1.28E+00	1.81E+00
PM-149	285.90	3.10	1.57E+04	1.57E+04	5.13E+03	7.54E+03
EU-152	121.78	20.50	2.57E-01	2.57E-01	3.90E-03	1.25E-01
	244.69	5.40	1.57E+00		-1.26E+00	7.62E-01
	344.27	19.13	3.82E-01		5.93E-03	1.83E-01
	778.89	9.20	9.32E-01		-1.65E-01	4.32E-01
	964.01	10.40	1.11E+00		3.94E-01	5.21E-01
	1085.78	7.22	1.46E+00		2.14E-01	6.75E-01
	1112.02	9.60	1.03E+00		1.52E-01	4.72E-01
	1407.95	14.94	6.07E-01		-4.58E-01	2.69E-01
GD-153	97.43	31.30	1.83E-01	1.83E-01	1.27E-01	8.92E-02
	103.18	22.20	2.53E-01		-1.40E-02	1.23E-01
EU-154	123.07	40.50	1.29E-01	1.29E-01	4.13E-03	6.28E-02
	723.30	19.70	4.66E-01		-7.83E-01	2.18E-01
	873.19	11.50	7.66E-01		-5.09E-02	3.53E-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	8.78E-01	1.29E-01	-2.29E-01	4.02E-01
	1004.76	17.90	5.32E-01		2.14E-02	2.44E-01
	1274.45	35.50	3.30E-01		-8.47E-02	1.52E-01
EU-155	86.50	30.90	2.43E-01	2.43E-01	2.19E-01	1.19E-01
	105.30	20.70	2.53E-01		9.38E-02	1.23E-01
EU-156	811.77	10.40	3.08E+00	3.08E+00	3.82E-01	1.43E+00
	1153.47	7.20	6.08E+00		2.62E-01	2.82E+00
	1230.71	8.90	4.93E+00		3.23E-02	2.28E+00
HO-166M	184.41	72.60	1.00E-01	1.00E-01	1.84E-01	4.89E-02
	280.45	29.60	2.40E-01		-1.37E-02	1.16E-01
	410.94	11.10	7.23E-01		2.92E-01	3.45E-01
	711.69	54.10	1.69E-01		3.96E-02	7.90E-02
TM-171	66.72	0.14	5.47E+01	5.47E+01	3.07E+01	2.68E+01
HF-172	81.75	4.52	1.48E+00	5.00E-01	-4.57E+00	7.25E-01
	125.81	11.30	5.00E-01		-3.23E-01	2.43E-01
LU-172	181.53	20.60	5.06E+00	3.04E+00	-2.04E-01	2.45E+00
	810.06	16.63	9.88E+00		-1.20E+00	4.58E+00
	912.12	15.25	2.14E+01		4.76E+01	1.02E+01
	1093.66	62.50	3.04E+00		-9.04E-01	1.40E+00
LU-173	100.72	5.24	1.06E+00	3.81E-01	3.97E-01	5.18E-01
	272.11	21.20	3.81E-01		3.50E-01	1.84E-01
HF-175	343.40	84.00	1.20E-01	1.20E-01	1.77E-03	5.76E-02
LU-176	88.34	13.30	5.66E-01	7.31E-02	8.38E-01	2.78E-01
	201.83	86.00	8.35E-02		1.51E-03	4.06E-02
	306.78	94.00	7.31E-02		-3.83E-02	3.51E-02
TA-182	67.75	41.20	2.10E-01	2.10E-01	7.54E-03	1.03E-01
	1121.30	34.90	5.28E-01		6.78E-01	2.50E-01
	1189.05	16.23	8.30E-01		-4.79E-02	3.82E-01
	1221.41	26.98	5.20E-01		-1.48E-01	2.40E-01
	1231.02	11.44	1.19E+00		-2.19E-01	5.46E-01
	308.46	29.68	3.14E-01		1.92E-01	1.02E-01	1.51E-01
IR-192	468.07	48.10	1.92E-01	1.92E-01	-2.42E-02	9.09E-02
HG-203	279.19	77.30	1.39E-01	1.39E-01	-1.42E-02	6.71E-02
BI-207	569.67	97.72	8.43E-02	8.43E-02	9.57E-03	3.98E-02
	1063.62	74.90	1.31E-01		2.43E-02	6.03E-02
+ TL-208	583.14	* 30.22	4.82E-01	1.85E-01	1.40E+00	2.33E-01
	860.37	* 4.48	3.10E+00		1.85E+00	1.47E+00
	2614.66	* 35.85	1.85E-01		1.15E+00	7.10E-02
BI-210M	262.00	45.00	1.53E-01	1.53E-01	4.17E-02	7.39E-02
	300.00	23.00	3.43E-01		1.84E-01	1.66E-01
PB-210	46.50	4.25	2.36E+00	2.36E+00	2.12E+00	1.15E+00
PB-211	404.84	2.90	2.47E+00	2.47E+00	-2.45E+00	1.17E+00
	831.96	2.90	3.01E+00		-8.57E-01	1.39E+00
+ BI-212	727.17	* 11.80	1.37E+00	1.37E+00	6.97E-01	6.60E-01
	1620.62	2.75	2.87E+00		5.71E-01	1.23E+00
+ PB-212	238.63	* 44.60	3.04E-01	3.04E-01	1.63E+00	1.49E-01
	300.09	3.41	2.32E+00		1.24E+00	1.12E+00
+ BI-214	609.31	* 46.30	3.06E-01	3.06E-01	1.36E+00	1.48E-01
	1120.29	* 15.10	8.69E-01		1.36E+00	4.06E-01
	1764.49	* 15.80	5.48E-01		1.65E+00	2.36E-01
	2204.22	* 4.98	2.48E+00		1.14E+00	1.10E+00
+ PB-214	295.21	* 19.19	6.47E-01	3.01E-01	1.37E+00	3.16E-01
	351.92	* 37.19	3.01E-01		1.63E+00	1.46E-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	1.12E+00	1.12E+00	9.33E-03	5.34E-01
RA-223	323.87	3.88	1.82E+00	1.82E+00	4.66E-01	8.73E-01
RA-224	240.98	3.95	3.69E+00	3.69E+00	2.22E+01	1.82E+00
RA-225	40.00	31.00	1.44E+00	1.44E+00	2.52E-01	7.03E-01
+ RA-226	186.21 *	3.28	2.91E+00	2.91E+00	4.04E+00	1.43E+00
TH-227	50.10	8.40	9.97E-01	9.97E-01	-1.14E+00	4.86E-01
	236.00	11.50	1.10E+00		3.53E+00	5.42E-01
	256.20	6.30	1.11E+00		2.19E-01	5.37E-01
+ AC-228	338.32 *	11.40	1.06E+00	5.47E-01	1.39E+00	5.18E-01
	911.07 *	27.70	5.47E-01		1.55E+00	2.61E-01
	969.11 *	16.60	1.11E+00		9.89E-01	5.31E-01
TH-230	48.44	16.90	5.43E-01	5.43E-01	-2.89E-01	2.65E-01
	62.85	4.60	1.80E+00		2.57E+00	8.82E-01
	67.67	0.37	1.98E+01		7.09E-01	9.68E+00
PA-231	283.67	1.60	4.43E+00	3.34E+00	1.85E+00	2.13E+00
	302.67	2.30	3.34E+00		2.93E+00	1.61E+00
TH-231	25.64	14.70	3.54E+00	1.03E+00	-3.52E-01	1.72E+00
	84.21	6.40	1.03E+00		-2.14E+00	5.05E-01
PA-233	311.98	38.60	3.80E-01	3.80E-01	1.29E-01	1.83E-01
PA-234	131.20	20.40	2.93E-01	2.93E-01	1.84E-01	1.43E-01
	733.99	8.80	9.21E-01		3.84E-02	4.27E-01
	946.00	12.00	7.58E-01		-2.29E-01	3.48E-01
PA-234M	1001.03	0.92	1.05E+01	1.05E+01	-3.02E-01	4.82E+00
+ TH-234	63.29 *	3.80	2.46E+00	2.46E+00	1.65E+00	1.21E+00
U-235	143.76	10.50	5.48E-01	5.48E-01	2.98E-01	2.66E-01
	163.35	4.70	1.17E+00		-5.59E-01	5.65E-01
	205.31	4.70	1.53E+00		-2.38E+00	7.41E-01
NP-237	86.50	12.60	5.89E-01	5.89E-01	5.30E-01	2.89E-01
NP-239	106.10	22.70	8.90E+02	8.90E+02	-2.31E+02	4.32E+02
	228.18	10.70	2.69E+03		1.05E+03	1.31E+03
	277.60	14.10	2.00E+03		-2.43E+02	9.62E+02
AM-241	59.54	35.90	2.17E-01	2.17E-01	8.68E-02	1.06E-01
AM-243	74.67	66.00	1.54E-01	1.54E-01	3.34E-01	7.58E-02
CM-243	209.75	3.29	2.35E+00	5.03E-01	1.03E+00	1.15E+00
	228.14	10.60	6.81E-01		2.66E-01	3.30E-01
	277.60	14.00	5.03E-01		-6.11E-02	2.42E-01

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

No Action Level results available for reporting purposes.

Analysis Report for 1510064-07
CP2211S04-05

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: CP2211S04-05

Elapsed Live time: 3600
 Elapsed Real Time: 3617

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1:	0	0	0	0	0	0	0	0
9:	28	224	161	143	146	122	117	104
17:	121	69	106	80	86	83	103	87
25:	87	105	108	82	91	94	101	79
33:	81	90	84	86	88	98	108	96
41:	97	84	96	106	85	146	170	104
49:	107	98	109	121	107	122	112	118
57:	113	133	148	140	129	150	202	232
65:	152	128	155	149	173	138	167	164
73:	163	215	430	318	465	448	161	137
81:	125	125	123	166	155	135	216	258
89:	133	172	149	130	251	195	108	79
97:	75	87	111	96	73	74	103	76
105:	95	73	71	80	76	86	85	72
113:	91	83	70	69	88	86	74	81
121:	72	81	77	83	71	84	99	84
129:	115	104	94	83	88	74	84	64
137:	77	77	71	86	69	86	74	91
145:	89	68	64	70	75	71	83	85
153:	67	94	80	69	76	74	67	64
161:	69	62	60	64	65	67	74	77
169:	58	82	53	73	72	62	54	63
177:	68	59	68	62	54	56	61	61
185:	86	144	134	55	69	61	50	62
193:	52	72	58	64	67	57	62	60
201:	56	53	58	53	72	56	57	53
209:	94	95	61	46	49	61	49	54
217:	54	42	38	47	42	57	35	42
225:	51	48	64	42	43	44	53	46
233:	51	43	53	58	69	235	536	189
241:	98	126	106	48	35	34	39	39
249:	46	40	41	45	35	42	41	28
257:	39	33	52	28	34	36	35	31
265:	36	36	26	31	27	67	66	42
273:	29	41	30	33	36	51	36	24
281:	28	31	40	29	34	36	35	27
289:	29	30	33	28	30	42	169	158
297:	48	43	20	58	36	33	27	18
305:	35	39	22	22	28	27	42	26
313:	27	25	25	30	36	36	19	17
321:	22	27	28	23	23	22	39	50
329:	45	32	15	30	41	25	24	38
337:	37	78	112	39	26	30	28	25
345:	22	25	20	22	30	31	98	301
353:	178	26	35	22	26	27	23	15
361:	26	28	22	19	26	22	27	16

369: 20 31 20 21 17 27 20 26

Sample Title: CP2211S04-05

Channel	1	2	3	4	5	6	7	8
377:	27	21	19	23	20	29	19	20
385:	26	26	16	18	30	23	13	14
393:	19	19	30	17	16	21	12	26
401:	27	18	13	16	22	23	16	19
409:	25	26	27	22	19	19	15	22
417:	26	15	31	21	24	20	23	19
425:	17	17	12	18	19	18	24	6
433:	15	14	15	14	22	12	18	17
441:	13	19	15	16	13	20	19	18
449:	19	21	14	19	17	15	14	17
457:	8	18	15	16	14	16	32	26
465:	18	7	12	14	15	16	14	19
473:	16	18	22	18	16	16	18	17
481:	17	14	21	15	17	10	17	13
489:	17	15	13	19	16	8	17	21
497:	16	15	15	13	11	19	18	16
505:	11	12	11	11	20	45	61	48
513:	17	9	4	7	14	14	14	20
521:	9	12	21	15	12	13	11	12
529:	16	16	13	22	18	12	18	10
537:	13	13	13	7	11	13	13	10
545:	14	18	8	14	15	9	18	16
553:	10	12	13	12	11	14	9	11
561:	14	14	19	9	17	7	6	8
569:	12	13	14	20	18	13	12	15
577:	11	17	14	20	18	26	125	118
585:	20	11	14	15	15	12	10	11
593:	11	8	7	11	14	7	9	13
601:	12	12	12	10	12	13	5	28
609:	141	162	48	9	16	14	11	8
617:	10	13	10	12	16	6	8	12
625:	13	10	9	10	11	11	12	11
633:	17	9	11	11	9	8	6	15
641:	8	15	13	10	7	6	10	8
649:	8	7	9	14	8	9	8	11
657:	6	17	10	13	12	10	12	8
665:	15	17	6	14	11	10	9	9
673:	14	7	8	11	11	5	9	7
681:	12	8	11	9	9	13	8	6
689:	7	15	13	14	11	7	20	14
697:	12	11	14	10	15	15	11	17
705:	17	17	11	15	12	13	8	9
713:	10	10	13	7	6	3	12	13
721:	11	5	9	6	14	15	35	28
729:	6	11	11	6	10	4	8	9
737:	7	4	9	10	12	8	8	12
745:	7	11	12	7	12	8	3	5
753:	10	7	8	9	12	12	7	14
761:	8	12	5	11	13	5	7	18
769:	26	12	9	14	13	7	14	10
777:	7	7	8	6	4	13	9	6
785:	11	12	12	8	7	7	9	7
793:	4	14	24	12	6	4	5	10

801: 3 10 10 5 7 15 11 4

Sample Title: CP2211S04-05

Channel	-----	-----	-----	-----	-----	-----	-----	-----
809:	8	10	8	10	5	8	6	7
817:	7	8	11	8	9	6	8	11
825:	9	1	8	8	6	6	5	6
833:	5	13	10	13	6	6	8	9
841:	10	5	9	8	6	12	9	8
849:	7	10	6	14	4	8	8	8
857:	0	7	11	16	21	8	9	6
865:	7	9	14	3	5	3	7	10
873:	8	5	8	6	9	10	5	13
881:	6	10	4	5	8	2	10	3
889:	7	11	7	5	8	6	7	7
897:	7	12	9	2	8	2	7	1
905:	12	8	7	9	10	24	80	56
913:	9	7	6	7	3	8	4	4
921:	10	8	4	7	7	9	11	6
929:	3	12	6	3	13	12	13	4
937:	10	7	8	9	7	8	2	4
945:	6	6	10	6	10	10	6	7
953:	4	9	3	11	3	2	6	5
961:	5	7	10	13	17	12	7	24
969:	37	30	6	6	6	8	7	4
977:	5	5	6	4	14	9	12	3
985:	1	9	5	5	8	6	6	11
993:	2	4	7	9	3	4	10	6
1001:	4	11	2	8	6	8	6	2
1009:	6	7	2	1	7	6	5	5
1017:	3	7	8	9	3	11	9	4
1025:	8	6	6	2	7	7	6	11
1033:	5	7	9	7	10	8	3	6
1041:	7	9	5	8	7	10	7	3
1049:	7	10	4	6	11	10	6	3
1057:	6	1	8	8	9	3	8	3
1065:	9	2	7	4	5	4	4	7
1073:	12	8	8	7	9	6	4	6
1081:	6	4	5	6	5	2	13	4
1089:	12	5	9	7	2	9	5	7
1097:	9	6	7	9	9	6	12	7
1105:	7	3	6	5	8	3	8	1
1113:	10	6	3	5	4	5	21	30
1121:	23	11	8	4	7	5	9	8
1129:	4	6	13	7	9	4	4	2
1137:	4	3	8	4	8	7	6	3
1145:	5	8	6	5	5	15	7	10
1153:	4	8	8	5	7	12	10	6
1161:	10	13	10	6	7	4	6	7
1169:	7	5	10	6	5	9	6	9
1177:	6	6	8	3	6	8	5	6
1185:	8	3	2	10	7	9	8	8
1193:	10	4	11	5	5	4	7	10
1201:	4	6	8	7	5	3	10	9
1209:	9	9	14	5	7	9	6	6
1217:	9	10	9	3	9	7	6	5
1225:	11	7	11	4	6	6	11	7

1233: 6 5 7 5 11 21 15 9

Sample Title: CP2211S04-05

Channel	1	2	3	4	5	6	7	8	9
1241:	5	5	9	7	7	7	5	9	
1249:	8	7	6	4	7	4	9	10	
1257:	10	5	7	2	4	5	8	7	
1265:	2	5	6	8	5	7	7	8	
1273:	5	6	1	2	6	2	7	4	
1281:	5	5	3	6	14	5	6	5	
1289:	5	5	8	5	4	0	2	6	
1297:	6	7	5	3	3	6	4	5	
1305:	7	7	4	6	2	3	7	2	
1313:	7	5	3	3	4	8	1	6	
1321:	1	3	3	3	3	3	3	0	
1329:	2	6	12	7	1	6	1	2	
1337:	1	8	6	5	4	5	4	6	
1345:	2	3	7	2	6	3	2	1	
1353:	1	4	3	1	3	3	3	3	
1361:	4	3	4	0	4	6	4	2	
1369:	4	6	6	4	5	3	2	4	
1377:	6	4	7	4	2	1	2	2	
1385:	5	6	5	2	4	1	3	3	
1393:	1	4	1	4	5	0	1	1	
1401:	6	8	4	0	1	2	6	5	
1409:	4	1	0	2	2	4	1	2	
1417:	2	1	5	3	1	2	4	1	
1425:	3	5	1	3	2	2	3	1	
1433:	3	9	2	2	0	3	1	2	
1441:	2	3	2	1	4	0	3	3	
1449:	0	5	2	4	1	2	2	3	
1457:	7	4	37	149	224	103	9	2	
1465:	0	2	2	2	3	1	1	4	
1473:	2	0	1	2	6	5	0	1	
1481:	1	2	2	0	2	2	2	4	
1489:	3	3	1	0	2	1	1	3	
1497:	2	3	3	1	4	3	2	1	
1505:	2	1	2	10	9	4	2	5	
1513:	5	2	3	1	1	2	2	1	
1521:	3	1	2	2	3	2	0	2	
1529:	0	3	2	0	1	1	1	2	
1537:	2	5	2	2	2	2	4	2	
1545:	0	4	2	1	3	0	2	2	
1553:	1	0	1	1	2	4	2	1	
1561:	1	1	2	1	1	1	1	1	
1569:	1	0	3	3	3	1	3	3	
1577:	1	0	0	2	1	6	3	1	
1585:	1	2	8	6	4	3	2	4	
1593:	6	4	1	0	2	1	3	0	
1601:	1	1	1	4	0	1	2	1	
1609:	0	0	3	1	1	1	2	1	
1617:	2	1	0	5	0	1	1	1	
1625:	1	0	1	1	0	4	4	2	
1633:	0	2	0	0	0	0	2	2	
1641:	2	2	1	3	1	1	3	0	
1649:	0	1	3	1	1	2	0	3	
1657:	0	0	1	1	4	1	0	1	

1665: 3 1 1 3 1 0 3 1

Sample Title: CP2211S04-05

Channel	1	2	3	4	5	6	7	8
1673:	3	1	1	0	2	2	2	2
1681:	0	1	2	1	2	1	3	1
1689:	4	0	2	3	3	0	2	2
1697:	0	0	0	2	0	3	0	2
1705:	1	1	3	1	2	0	0	0
1713:	2	3	0	3	0	1	2	0
1721:	0	2	4	3	3	0	1	1
1729:	7	7	3	0	1	1	0	0
1737:	0	0	1	1	2	0	1	0
1745:	1	1	1	0	0	1	0	1
1753:	0	0	1	0	0	0	1	0
1761:	1	2	12	17	24	4	2	2
1769:	1	1	0	1	1	0	0	1
1777:	1	1	1	1	1	2	2	2
1785:	2	2	0	1	1	0	1	0
1793:	1	0	1	1	1	1	0	2
1801:	1	0	1	1	2	2	0	3
1809:	1	1	2	2	0	1	1	1
1817:	2	0	2	2	0	3	3	0
1825:	0	1	2	1	2	1	3	2
1833:	0	0	0	3	1	1	2	1
1841:	1	0	1	1	0	4	2	3
1849:	3	2	1	0	3	0	2	1
1857:	2	2	2	1	1	0	2	1
1865:	0	2	1	1	2	1	1	2
1873:	2	1	0	0	2	1	0	2
1881:	2	1	0	2	0	2	2	0
1889:	1	0	1	0	1	3	3	1
1897:	2	0	2	1	0	1	4	1
1905:	1	2	3	1	2	0	2	0
1913:	1	1	0	0	1	1	2	1
1921:	1	2	2	3	1	1	0	0
1929:	1	1	0	0	0	2	1	1
1937:	1	2	0	0	1	1	0	0
1945:	1	1	2	1	1	3	1	0
1953:	1	1	1	1	0	1	3	0
1961:	0	1	1	0	2	0	1	1
1969:	1	0	1	1	1	1	2	2
1977:	1	2	1	2	2	1	1	0
1985:	2	0	0	1	0	2	0	1
1993:	0	0	1	0	1	1	0	0
2001:	3	3	2	0	1	0	2	0
2009:	2	1	0	2	1	1	0	1
2017:	0	0	1	1	1	0	1	1
2025:	1	1	0	3	1	1	1	2
2033:	0	0	3	0	0	1	2	1
2041:	1	1	0	0	1	0	0	0
2049:	0	1	0	0	3	0	2	1
2057:	0	1	0	0	0	0	0	0
2065:	0	1	1	1	0	0	0	0
2073:	1	0	1	1	1	3	0	0
2081:	1	1	1	1	0	2	1	1
2089:	2	0	2	0	1	0	0	1

2097: 3 0 0 3 2 2 9 2

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

2529: 1 0 1 0 0 1 0 0

Sample Title: CP2211S04-05

Channel	1	2	3	4	5	6	7	8	9
2537:	0	0	0	1	0	0	2	0	
2545:	0	0	0	0	2	0	0	1	
2553:	0	0	0	0	0	0	1	0	
2561:	1	0	0	0	0	0	0	0	
2569:	1	0	0	0	1	0	0	1	
2577:	0	0	1	0	1	0	0	2	
2585:	0	0	0	1	1	1	0	0	
2593:	0	0	0	0	1	0	0	0	
2601:	0	0	0	1	0	0	0	0	
2609:	0	0	0	8	11	23	19	11	
2617:	3	0	1	0	0	0	1	0	
2625:	0	0	0	0	0	0	0	0	
2633:	0	0	0	0	0	0	0	0	
2641:	0	2	0	0	0	1	0	0	
2649:	0	0	0	0	1	0	0	0	
2657:	0	0	1	0	0	0	0	0	
2665:	0	0	0	0	0	0	0	1	
2673:	0	0	0	0	1	0	0	0	
2681:	0	0	0	0	0	0	0	0	
2689:	0	0	0	0	0	0	1	0	
2697:	0	0	0	1	0	1	0	1	
2705:	0	0	0	0	0	0	0	1	
2713:	0	1	0	0	0	0	0	0	
2721:	0	0	0	0	0	0	0	0	
2729:	0	0	0	0	0	1	1	1	
2737:	0	0	0	0	0	0	0	0	
2745:	0	0	0	0	0	0	0	0	
2753:	0	0	0	0	0	2	0	1	
2761:	0	0	1	0	0	0	0	0	
2769:	0	0	0	0	0	0	1	0	
2777:	0	0	0	0	1	1	0	0	
2785:	0	1	0	0	0	0	0	0	
2793:	0	0	0	0	0	0	0	0	
2801:	0	0	0	0	0	0	1	0	
2809:	0	0	0	1	0	0	0	0	
2817:	1	0	0	0	1	0	0	1	
2825:	0	0	0	0	0	0	1	1	
2833:	0	1	0	1	0	0	0	0	
2841:	0	0	0	0	0	0	0	0	
2849:	0	0	0	1	0	1	0	0	
2857:	0	0	0	1	0	0	0	0	
2865:	0	0	1	0	0	0	0	0	
2873:	3	0	1	0	0	0	0	0	
2881:	0	0	0	0	0	0	0	1	
2889:	0	0	0	0	0	0	0	0	
2897:	0	0	0	0	1	1	0	1	
2905:	0	1	0	0	0	0	0	0	
2913:	1	0	0	0	0	0	0	0	
2921:	0	0	0	0	0	0	0	0	
2929:	0	0	0	0	0	1	0	0	
2937:	1	0	0	0	0	1	1	2	
2945:	1	0	0	1	0	1	0	0	
2953:	0	0	0	1	0	0	0	0	

2961: 0 0 0 0 0 0 0 0 1

Sample Title: CP2211S04-05

Channel	1	2	3	4	5	6	7	8
2969:	0	0	0	0	0	1	0	1
2977:	1	0	0	1	0	0	1	0
2985:	0	0	0	0	0	0	0	0
2993:	0	0	0	0	0	0	0	0
3001:	0	0	0	0	0	1	0	0
3009:	0	1	1	0	0	0	1	0
3017:	0	0	0	1	0	1	0	0
3025:	0	0	0	0	0	0	0	0
3033:	0	0	0	0	0	0	0	0
3041:	0	0	0	1	0	0	0	0
3049:	0	1	0	1	0	0	0	0
3057:	0	0	0	1	0	0	0	0
3065:	0	0	1	1	0	1	0	0
3073:	0	0	0	0	0	0	0	0
3081:	0	0	0	0	1	0	0	2
3089:	0	0	1	1	0	1	1	0
3097:	0	0	0	0	1	1	0	1
3105:	0	0	0	0	0	0	1	0
3113:	0	0	0	0	0	1	0	0
3121:	0	0	0	0	0	0	1	1
3129:	0	1	0	0	0	0	0	0
3137:	0	1	0	0	0	0	1	0
3145:	1	0	0	0	1	0	0	0
3153:	0	0	0	0	0	0	0	0
3161:	1	0	0	0	0	0	0	0
3169:	0	0	0	0	0	0	0	0
3177:	0	0	0	0	1	0	1	0
3185:	0	0	0	0	0	1	0	0
3193:	0	1	0	0	2	0	0	0
3201:	0	0	0	0	1	0	0	0
3209:	0	0	0	0	0	1	0	0
3217:	0	0	0	0	0	1	1	0
3225:	0	0	0	0	0	0	0	0
3233:	0	0	0	0	0	0	0	0
3241:	2	0	1	0	1	0	0	0
3249:	0	0	0	0	1	0	0	0
3257:	0	0	0	0	0	0	0	0
3265:	1	1	0	0	0	0	1	0
3273:	0	0	0	1	0	0	0	1
3281:	0	0	0	0	0	0	0	0
3289:	0	0	0	1	1	0	0	0
3297:	0	0	0	0	2	0	0	0
3305:	0	0	0	0	0	0	0	0
3313:	0	0	0	0	0	1	0	0
3321:	1	0	0	0	0	0	0	0
3329:	0	0	1	0	0	0	1	0
3337:	0	0	0	0	1	0	0	0
3345:	0	0	0	0	0	0	1	0
3353:	1	0	0	0	1	1	0	1
3361:	0	1	0	1	0	0	0	0
3369:	0	0	2	0	1	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 1 0 0 0

Sample Title: CP2211S04-05

Channel								
3401:	0	0	0	0	0	0	0	0
3409:	0	0	0	0	1	1	0	0
3417:	0	0	0	0	0	0	0	0
3425:	0	0	0	0	0	0	0	0
3433:	0	0	0	0	0	0	0	0
3441:	1	1	0	0	0	0	0	0
3449:	0	1	0	0	0	0	0	0
3457:	0	0	1	0	0	0	0	1
3465:	0	0	0	0	0	0	0	0
3473:	0	0	0	0	0	0	0	0
3481:	0	0	1	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	0	0
3513:	0	1	1	0	0	0	0	1
3521:	0	0	0	0	0	0	0	0
3529:	0	0	0	0	0	0	0	0
3537:	0	0	0	0	0	0	0	1
3545:	0	1	0	0	0	0	0	0
3553:	0	0	0	0	0	0	0	0
3561:	0	0	0	0	0	0	0	0
3569:	0	0	0	0	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	0	0
3609:	0	1	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	1	0	0	0	1
3641:	0	0	0	0	0	0	0	0
3649:	0	0	0	0	0	0	0	0
3657:	0	0	0	0	1	0	0	0
3665:	0	0	0	0	0	0	1	0
3673:	0	0	0	0	1	0	1	0
3681:	0	0	0	0	0	0	0	0
3689:	0	1	0	0	0	0	0	0
3697:	0	0	0	0	0	0	0	0
3705:	0	0	1	0	0	0	0	0
3713:	0	0	0	0	0	0	0	0
3721:	0	0	0	0	0	0	0	0
3729:	0	0	0	0	0	0	0	0
3737:	0	0	0	0	0	0	0	0
3745:	0	0	0	0	0	0	0	0
3753:	0	0	1	0	0	0	0	0
3761:	0	0	1	0	0	0	0	0
3769:	0	0	0	1	0	1	0	0
3777:	0	0	0	0	0	0	0	0
3785:	0	0	0	0	0	0	0	0
3793:	3	0	0	0	0	0	0	0
3801:	0	0	0	0	0	0	0	0
3809:	0	0	0	0	0	0	0	0
3817:	0	0	0	0	0	0	0	0

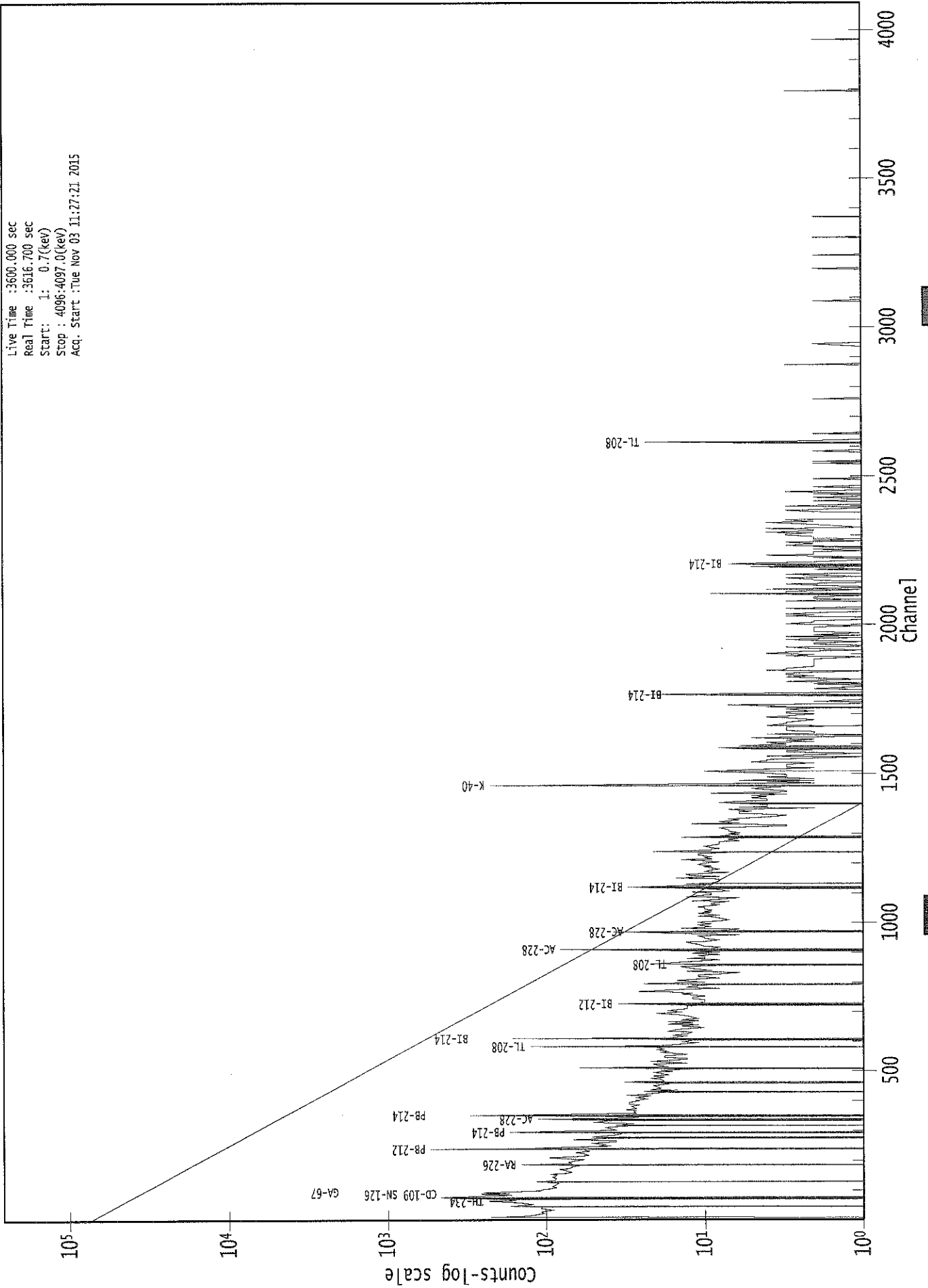
3825: 0 0 1 0 0 0 0 0

Sample Title: CP2211S04-05

Channel	1	2	3	4	5	6	7	8
3833:	0	0	1	0	0	0	0	0
3841:	0	0	0	1	0	0	0	0
3849:	0	1	0	0	0	0	1	0
3857:	0	0	0	0	0	1	0	0
3865:	0	0	0	0	0	0	0	0
3873:	0	0	0	0	0	0	1	0
3881:	1	0	0	0	0	0	0	0
3889:	0	0	0	0	0	0	1	0
3897:	0	0	0	1	0	0	1	0
3905:	0	1	0	0	1	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	1	0
3945:	0	0	0	0	0	0	0	0
3953:	0	0	1	0	0	0	0	0
3961:	0	0	0	0	0	0	0	2
3969:	0	0	0	0	0	1	0	0
3977:	1	0	0	0	0	0	1	0
3985:	0	0	0	0	0	0	0	0
3993:	0	0	0	0	0	0	0	0
4001:	0	0	0	0	0	0	0	0
4009:	0	0	0	0	0	0	0	0
4017:	0	0	0	0	0	0	0	0
4025:	0	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	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

0000029025.CNF

Live Time :3600.000 sec
Real Time :3616.700 sec
Start : 1: 0.7(keV)
Stop : 4096.4097.0(keV)
Acq. Start :Tue Nov 03 11:27:21 2015



ROI Type: 2

ROI Type: 1

RF
11/3/15

Analysis Report for 1510064-08
CP2211S06-07

GAMMA SPECTRUM ANALYSIS

Sample Identification : 1510064-08
Sample Description : CP2211S06-07
Sample Type : SOIL

Sample Size : 6.098E+02 grams
Facility : Countroom

Sample Taken On : 10/6/2015 7:35:36AM
Acquisition Started : 11/3/2015 12:29:45PM

Procedure : GAS-1402 pCi
Operator : Administrator
Detector Name : GE1
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) : 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 : 29029

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
11/3/15RF
11/3/15 00515

Analysis Report for 1510064-08
CP2211S06-07

PEAK LOCATE REPORT

Peak Locate Performed on : 11/3/2015 1:29:53PM
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	63.21	63.55	0.0000	0.00
2	73.46	73.81	0.0000	0.00
3	77.20	77.54	0.0000	0.00
4	87.80	88.13	0.0000	0.00
5	92.53	92.86	0.0000	0.00
6	106.41	106.75	0.0000	0.00
7	154.56	154.88	0.0000	0.00
8	185.86	186.17	0.0000	0.00
9	209.82	210.12	0.0000	0.00
10	238.65	238.93	0.0000	0.00
11	241.87	242.15	0.0000	0.00
12	270.89	271.17	0.0000	0.00
13	295.36	295.63	0.0000	0.00
14	300.07	300.33	0.0000	0.00
15	324.62	324.88	0.0000	0.00
16	328.08	328.34	0.0000	0.00
17	338.54	338.79	0.0000	0.00
18	352.13	352.38	0.0000	0.00
19	409.86	410.09	0.0000	0.00
20	463.12	463.33	0.0000	0.00
21	486.18	486.38	0.0000	0.00
22	511.07	511.26	0.0000	0.00
23	546.67	546.85	0.0000	0.00
24	583.41	583.58	0.0000	0.00
25	600.40	600.56	0.0000	0.00
26	609.59	609.75	0.0000	0.00
27	639.20	639.35	0.0000	0.00
28	645.38	645.53	0.0000	0.00
29	665.74	665.88	0.0000	0.00
30	727.77	727.89	0.0000	0.00
31	768.50	768.61	0.0000	0.00
32	794.23	794.32	0.0000	0.00
33	805.62	805.71	0.0000	0.00
34	861.14	861.21	0.0000	0.00
35	911.71	911.76	0.0000	0.00
36	969.55	969.59	0.0000	0.00
37	977.47	977.50	0.0000	0.00
38	1120.71	1120.69	0.0000	0.00
39	1155.53	1155.50	0.0000	0.00
40	1408.85	1408.73	0.0000	0.00
41	1461.48	1461.34	0.0000	0.00
42	1510.14	1509.98	0.0000	0.00

Analysis Report for 1510064-08

CP2211S06-07

<i>Peak No.</i>	<i>Energy (keV)</i>	<i>Centroid Channel</i>	<i>Centroid Uncertainty</i>	<i>Peak Significance</i>
43	1526.06	1525.89	0.0000	0.00
44	1590.19	1590.00	0.0000	0.00
45	1621.30	1621.10	0.0000	0.00
46	1683.58	1683.36	0.0000	0.00
47	1691.69	1691.46	0.0000	0.00
48	1729.28	1729.04	0.0000	0.00
49	1765.41	1765.16	0.0000	0.00
50	1848.12	1847.83	0.0000	0.00
51	1963.89	1963.56	0.0000	0.00
52	2103.62	2103.24	0.0000	0.00
53	2163.91	2163.50	0.0000	0.00
54	2205.11	2204.69	0.0000	0.00
55	2298.52	2298.06	0.0000	0.00
56	2306.11	2305.64	0.0000	0.00
57	2448.85	2448.33	0.0000	0.00
58	2582.77	2582.20	0.0000	0.00
59	2615.30	2614.72	0.0000	0.00

? = Adjacent peak noted

Errors quoted at 2.000sigma

Analysis Report for 1510064-08

CP2211S06-07

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/3/2015 1:29:53PM

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	63.21	60 -	66	63.55	2.43E+02	106.96	1.91E+03	1.64
M	2	73.46	72 -	83	73.81	2.06E+02	78.89	1.14E+03	2.13
m	3	77.20	72 -	83	77.54	1.02E+03	117.48	1.67E+03	2.14
m	4	87.80	83 -	96	88.13	2.08E+02	68.06	8.91E+02	1.48
m	5	92.53	83 -	96	92.86	3.39E+02	73.16	8.52E+02	1.49
	6	106.41	103 -	110	106.75	8.16E+01	92.99	1.39E+03	4.25
	7	154.56	152 -	157	154.88	5.54E+01	68.56	8.89E+02	2.44
	8	185.86	182 -	190	186.17	2.57E+02	93.54	1.19E+03	1.72
	9	209.82	207 -	213	210.12	8.17E+01	68.56	7.91E+02	1.80
M	10	238.65	234 -	246	238.93	1.10E+03	78.28	4.24E+02	1.68
m	11	241.87	234 -	246	242.15	2.65E+02	62.80	3.47E+02	1.68
	12	270.89	268 -	275	271.17	8.62E+01	64.03	6.30E+02	1.95
M	13	295.36	291 -	305	295.63	3.82E+02	53.28	3.13E+02	1.72
m	14	300.07	291 -	305	300.33	1.00E+02	53.24	4.26E+02	2.48
M	15	324.62	323 -	345	324.88	3.11E+01	27.93	1.70E+02	1.94
m	16	328.08	323 -	345	328.34	8.15E+01	42.37	2.60E+02	1.94
m	17	338.54	323 -	345	338.79	2.19E+02	48.57	2.81E+02	1.95
	18	352.13	348 -	357	352.38	7.15E+02	79.57	4.99E+02	1.82
	19	409.86	407 -	412	410.09	4.88E+01	36.97	2.30E+02	1.42
	20	463.12	458 -	468	463.33	7.60E+01	59.65	4.32E+02	1.98
	21	486.18	484 -	490	486.38	2.64E+01	33.18	1.85E+02	1.47
	22	511.07	507 -	516	511.26	2.07E+02	52.34	2.68E+02	2.11
	23	546.67	544 -	550	546.85	3.46E+01	31.29	1.51E+02	3.68
	24	583.41	579 -	586	583.58	2.98E+02	48.46	1.94E+02	1.92
	25	600.40	597 -	604	600.56	3.20E+01	35.10	1.84E+02	3.58
	26	609.59	605 -	614	609.75	4.83E+02	59.20	2.25E+02	1.56
	27	639.20	636 -	643	639.35	3.30E+01	29.46	1.20E+02	1.93
	28	645.38	644 -	648	645.53	2.31E+01	19.29	6.18E+01	1.56
	29	665.74	663 -	669	665.88	3.52E+01	26.75	1.04E+02	3.04
	30	727.77	724 -	732	727.89	5.34E+01	43.57	2.55E+02	1.64
	31	768.50	765 -	771	768.61	4.04E+01	32.05	1.57E+02	1.35
	32	794.23	791 -	798	794.32	4.43E+01	32.19	1.41E+02	1.85
	33	805.62	802 -	810	805.71	4.37E+01	31.86	1.27E+02	5.56
	34	861.14	858 -	863	861.21	4.43E+01	23.79	7.74E+01	2.30
	35	911.71	906 -	915	911.76	2.12E+02	46.36	1.87E+02	2.08
	36	969.55	966 -	974	969.59	9.90E+01	40.68	1.74E+02	1.88
	37	977.47	974 -	982	977.50	2.94E+01	24.82	7.72E+01	3.69
	38	1120.71	1117 -	1124	1120.69	7.52E+01	33.76	1.40E+02	1.39
	39	1155.53	1151 -	1160	1155.50	3.34E+01	31.70	1.23E+02	1.92
	40	1408.85	1406 -	1413	1408.73	1.95E+01	17.20	3.70E+01	1.44

Analysis Report for 1510064-08

CP2211S06-07

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
41	1461.48	1455 -	1466	1461.34	8.40E+02	63.12	7.89E+01	2.17
42	1510.14	1503 -	1516	1509.98	2.65E+01	24.66	5.50E+01	2.84
43	1526.06	1523 -	1528	1525.89	9.00E+00	6.00	0.00E+00	2.75
44	1590.19	1586 -	1596	1590.00	2.62E+01	18.91	3.55E+01	1.33
45	1621.30	1618 -	1626	1621.10	1.10E+01	12.85	2.00E+01	1.19
46	1683.58	1681 -	1685	1683.36	6.78E+00	6.96	4.44E+00	1.84
47	1691.69	1687 -	1695	1691.46	7.95E+00	7.76	4.10E+00	6.63
48	1729.28	1724 -	1732	1729.04	1.77E+01	14.74	2.26E+01	2.91
49	1765.41	1760 -	1770	1765.16	9.85E+01	24.48	2.71E+01	1.97
50	1848.12	1844 -	1850	1847.83	1.05E+01	8.97	7.00E+00	2.54
51	1963.89	1962 -	1966	1963.56	4.69E+00	7.12	6.63E+00	1.69
52	2103.62	2098 -	2107	2103.24	2.35E+01	14.11	1.49E+01	1.49
53	2163.91	2161 -	2165	2163.50	6.00E+00	4.90	0.00E+00	1.16
54	2205.11	2200 -	2208	2204.69	2.17E+01	10.78	4.58E+00	2.42
55	2298.52	2294 -	2301	2298.06	6.13E+00	6.93	3.75E+00	1.89
56	2306.11	2302 -	2309	2305.64	9.86E+00	9.38	8.29E+00	3.52
57	2448.85	2445 -	2450	2448.33	6.00E+00	4.90	0.00E+00	1.92
58	2582.77	2579 -	2584	2582.20	5.00E+00	4.47	0.00E+00	1.16
59	2615.30	2609 -	2618	2614.72	1.32E+02	23.69	4.27E+00	2.25

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 : 11/3/2015 1:29:53PM

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	63.21	60 -	66	2.43E+02	106.96	8.41E+01
M	2	73.46	72 -	83	2.06E+02	78.89	5.56E+01
m	3	77.20	72 -	83	1.02E+03	117.48	6.72E+01
m	4	87.80	83 -	96	2.08E+02	68.06	4.91E+01
m	5	92.53	83 -	96	3.39E+02	73.16	4.80E+01
	6	106.41	103 -	110	8.16E+01	92.99	7.50E+01
	7	154.56	152 -	157	5.54E+01	68.56	5.50E+01
	8	185.86	182 -	190	2.57E+02	93.54	7.22E+01
	9	209.82	207 -	213	8.17E+01	68.56	5.44E+01

Analysis Report for 1510064-08

CP2211S06-07

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
M	10	238.65	234 -	246	1.10E+03	78.28	4.24E+02	3.39E+01
m	11	241.87	234 -	246	2.65E+02	62.80	3.47E+02	3.06E+01
	12	270.89	268 -	275	8.62E+01	64.03	6.30E+02	5.04E+01
M	13	295.36	291 -	305	3.82E+02	53.28	3.13E+02	2.91E+01
m	14	300.07	291 -	305	1.00E+02	53.24	4.26E+02	3.39E+01
M	15	324.62	323 -	345	3.11E+01	27.93	1.70E+02	2.14E+01
m	16	328.08	323 -	345	8.15E+01	42.37	2.60E+02	2.65E+01
m	17	338.54	323 -	345	2.19E+02	48.57	2.81E+02	2.76E+01
	18	352.13	348 -	357	7.15E+02	79.57	4.99E+02	4.84E+01
	19	409.86	407 -	412	4.88E+01	36.97	2.30E+02	2.81E+01
	20	463.12	458 -	468	7.60E+01	59.65	4.32E+02	4.69E+01
	21	486.18	484 -	490	2.64E+01	33.18	1.85E+02	2.59E+01
	22	511.07	507 -	516	2.07E+02	52.34	2.68E+02	3.59E+01
	23	546.67	544 -	550	3.46E+01	31.29	1.51E+02	2.38E+01
	24	583.41	579 -	586	2.98E+02	48.46	1.94E+02	2.80E+01
	25	600.40	597 -	604	3.20E+01	35.10	1.84E+02	2.73E+01
	26	609.59	605 -	614	4.83E+02	59.20	2.25E+02	3.26E+01
	27	639.20	636 -	643	3.30E+01	29.46	1.20E+02	2.23E+01
	28	645.38	644 -	648	2.31E+01	19.29	6.18E+01	1.38E+01
	29	665.74	663 -	669	3.52E+01	26.75	1.04E+02	1.97E+01
	30	727.77	724 -	732	5.34E+01	43.57	2.55E+02	3.37E+01
	31	768.50	765 -	771	4.04E+01	32.05	1.57E+02	2.42E+01
	32	794.23	791 -	798	4.43E+01	32.19	1.41E+02	2.41E+01
	33	805.62	802 -	810	4.37E+01	31.86	1.27E+02	2.38E+01
	34	861.14	858 -	863	4.43E+01	23.79	7.74E+01	1.62E+01
	35	911.71	906 -	915	2.12E+02	46.36	1.87E+02	2.96E+01
	36	969.55	966 -	974	9.90E+01	40.68	1.74E+02	2.92E+01
	37	977.47	974 -	982	2.94E+01	24.82	7.72E+01	1.84E+01
	38	1120.71	1117 -	1124	7.52E+01	33.76	1.40E+02	2.38E+01
	39	1155.53	1151 -	1160	3.34E+01	31.70	1.23E+02	2.43E+01
	40	1408.85	1406 -	1413	1.95E+01	17.20	3.70E+01	1.21E+01
	41	1461.48	1455 -	1466	8.40E+02	63.12	7.89E+01	2.06E+01
	42	1510.14	1503 -	1516	2.65E+01	24.66	5.50E+01	1.84E+01
	43	1526.06	1523 -	1528	9.00E+00	6.00	0.00E+00	0.00E+00
	44	1590.19	1586 -	1596	2.62E+01	18.91	3.55E+01	1.31E+01
	45	1621.30	1618 -	1626	1.10E+01	12.85	2.00E+01	9.04E+00
	46	1683.58	1681 -	1685	6.78E+00	6.96	4.44E+00	3.80E+00
	47	1691.69	1687 -	1695	7.95E+00	7.76	4.10E+00	4.38E+00
	48	1729.28	1724 -	1732	1.77E+01	14.74	2.26E+01	9.95E+00
	49	1765.41	1760 -	1770	9.85E+01	24.48	2.71E+01	1.18E+01
	50	1848.12	1844 -	1850	1.05E+01	8.97	7.00E+00	5.10E+00
	51	1963.89	1962 -	1966	4.69E+00	7.12	6.63E+00	4.65E+00
	52	2103.62	2098 -	2107	2.35E+01	14.11	1.49E+01	8.42E+00
	53	2163.91	2161 -	2165	6.00E+00	4.90	0.00E+00	0.00E+00
	54	2205.11	2200 -	2208	2.17E+01	10.78	4.58E+00	4.46E+00
	55	2298.52	2294 -	2301	6.13E+00	6.93	3.75E+00	3.98E+00
	56	2306.11	2302 -	2309	9.86E+00	9.38	8.29E+00	5.73E+00
	57	2448.85	2445 -	2450	6.00E+00	4.90	0.00E+00	0.00E+00
	58	2582.77	2579 -	2584	5.00E+00	4.47	0.00E+00	0.00E+00
	59	2615.30	2609 -	2618	1.32E+02	23.69	4.27E+00	4.76E+00

Analysis Report for 1510064-08

CP2211S06-07

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 : 11/3/2015 1:29:53PM

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	60 -	66	63.55	2.43E+02	106.96	1.91E+03	TH-234 TH-230
M	2	72 -	83	73.81	2.06E+02	78.89	1.14E+03	.....
m	3	72 -	83	77.54	1.02E+03	117.48	1.67E+03	.....
m	4	83 -	96	88.13	2.08E+02	68.06	8.91E+02	SN-126 CD-109 LU-176
m	5	83 -	96	92.86	3.39E+02	73.16	8.52E+02	GA-67
	6	103 -	110	106.75	8.16E+01	92.99	1.39E+03	NP-239
	7	152 -	157	154.88	5.54E+01	68.56	8.89E+02	.....
	8	182 -	190	186.17	2.57E+02	93.54	1.19E+03	RA-226
	9	207 -	213	210.12	8.17E+01	68.56	7.91E+02	CM-243 GA-67
M	10	234 -	246	238.93	1.10E+03	78.28	4.24E+02	PB-212
m	11	234 -	246	242.15	2.65E+02	62.80	3.47E+02	RA-224
	12	268 -	275	271.17	8.62E+01	64.03	6.30E+02	.....
M	13	291 -	305	295.63	3.82E+02	53.28	3.13E+02	PB-214
m	14	291 -	305	300.33	1.00E+02	53.24	4.26E+02	PB-212 BI-210M GA-67
M	15	323 -	345	324.88	3.11E+01	27.93	1.70E+02	RA-223
m	16	323 -	345	328.34	8.15E+01	42.37	2.60E+02	LA-140
m	17	323 -	345	338.79	2.19E+02	48.57	2.81E+02	AC-228
	18	348 -	357	352.38	7.15E+02	79.57	4.99E+02	PB-214
	19	407 -	412	410.09	4.88E+01	36.97	2.30E+02	.....
	20	458 -	468	463.33	7.60E+01	59.65	4.32E+02	SB-125
	21	484 -	490	486.38	2.64E+01	33.18	1.85E+02	LA-140
	22	507 -	516	511.26	2.07E+02	52.34	2.68E+02	.....
	23	544 -	550	546.85	3.46E+01	31.29	1.51E+02	.....
	24	579 -	586	583.58	2.98E+02	48.46	1.94E+02	TL-208

Analysis Report for 1510064-08

CP2211S06-07

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
25	600.40	597 -	604	600.56	3.20E+01	35.10	1.84E+02	SB-125
26	609.59	605 -	614	609.75	4.83E+02	59.20	2.25E+02	BI-214
27	639.20	636 -	643	639.35	3.30E+01	29.46	1.20E+02	.....
28	645.38	644 -	648	645.53	2.31E+01	19.29	6.18E+01	SB-124
29	665.74	663 -	669	665.88	3.52E+01	26.75	1.04E+02	SB-126
30	727.77	724 -	732	727.89	5.34E+01	43.57	2.55E+02	BI-212
31	768.50	765 -	771	768.61	4.04E+01	32.05	1.57E+02	.....
32	794.23	791 -	798	794.32	4.43E+01	32.19	1.41E+02	.....
33	805.62	802 -	810	805.71	4.37E+01	31.86	1.27E+02	.....
34	861.14	858 -	863	861.21	4.43E+01	23.79	7.74E+01	TL-208
35	911.71	906 -	915	911.76	2.12E+02	46.36	1.87E+02	LU-172 AC-228
36	969.55	966 -	974	969.59	9.90E+01	40.68	1.74E+02	AC-228
37	977.47	974 -	982	977.50	2.94E+01	24.82	7.72E+01	.....
38	1120.71	1117 -	1124	1120.69	7.52E+01	33.76	1.40E+02	SC-46 BI-214 TA-182
39	1155.53	1151 -	1160	1155.50	3.34E+01	31.70	1.23E+02	.....
40	1408.85	1406 -	1413	1408.73	1.95E+01	17.20	3.70E+01	EU-152
41	1461.48	1455 -	1466	1461.34	8.40E+02	63.12	7.89E+01	K-40
42	1510.14	1503 -	1516	1509.98	2.65E+01	24.66	5.50E+01	.....
43	1526.06	1523 -	1528	1525.89	9.00E+00	6.00	0.00E+00	.....
44	1590.19	1586 -	1596	1590.00	2.62E+01	18.91	3.55E+01	.....
45	1621.30	1618 -	1626	1621.10	1.10E+01	12.85	2.00E+01	BI-212
46	1683.58	1681 -	1685	1683.36	6.78E+00	6.96	4.44E+00	.....
47	1691.69	1687 -	1695	1691.46	7.95E+00	7.76	4.10E+00	SB-124
48	1729.28	1724 -	1732	1729.04	1.77E+01	14.74	2.26E+01	.....
49	1765.41	1760 -	1770	1765.16	9.85E+01	24.48	2.71E+01	BI-214
50	1848.12	1844 -	1850	1847.83	1.05E+01	8.97	7.00E+00	.....
51	1963.89	1962 -	1966	1963.56	4.69E+00	7.12	6.63E+00	.....
52	2103.62	2098 -	2107	2103.24	2.35E+01	14.11	1.49E+01	.....
53	2163.91	2161 -	2165	2163.50	6.00E+00	4.90	0.00E+00	.....
54	2205.11	2200 -	2208	2204.69	2.17E+01	10.78	4.58E+00	BI-214
55	2298.52	2294 -	2301	2298.06	6.13E+00	6.93	3.75E+00	.....
56	2306.11	2302 -	2309	2305.64	9.86E+00	9.38	8.29E+00	.....
57	2448.85	2445 -	2450	2448.33	6.00E+00	4.90	0.00E+00	.....
58	2582.77	2579 -	2584	2582.20	5.00E+00	4.47	0.00E+00	.....
59	2615.30	2609 -	2618	2614.72	1.32E+02	23.69	4.27E+00	TL-208

M = First peak in a multiplet region

m = Other peak in a multiplet region

F = Fitted singlet

Errors quoted at 2.000sigma

Analysis Report for 1510064-08

CP2211S06-07

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 11/3/2015 1:29:53PM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	63.21	2.43E+02	106.96	2.49E-02	1.91E-03
M	2	73.46	2.06E+02	78.89	2.73E-02	2.25E-03
m	3	77.20	1.02E+03	117.48	2.78E-02	2.38E-03
m	4	87.80	2.08E+02	68.06	2.85E-02	2.73E-03
m	5	92.53	3.39E+02	73.16	2.86E-02	2.65E-03
	6	106.41	8.16E+01	92.99	2.82E-02	2.38E-03
	7	154.56	5.54E+01	68.56	2.47E-02	2.15E-03
	8	185.86	2.57E+02	93.54	2.24E-02	2.03E-03
	9	209.82	8.17E+01	68.56	2.08E-02	1.85E-03
M	10	238.65	1.10E+03	78.28	1.92E-02	1.64E-03
m	11	241.87	2.65E+02	62.80	1.91E-02	1.61E-03
	12	270.89	8.62E+01	64.03	1.77E-02	1.40E-03
M	13	295.36	3.82E+02	53.28	1.67E-02	1.31E-03
m	14	300.07	1.00E+02	53.24	1.65E-02	1.30E-03
M	15	324.62	3.11E+01	27.93	1.56E-02	1.25E-03
m	16	328.08	8.15E+01	42.37	1.55E-02	1.24E-03
m	17	338.54	2.19E+02	48.57	1.52E-02	1.22E-03
	18	352.13	7.15E+02	79.57	1.48E-02	1.19E-03
	19	409.86	4.88E+01	36.97	1.32E-02	1.10E-03
	20	463.12	7.60E+01	59.65	1.21E-02	1.04E-03
	21	486.18	2.64E+01	33.18	1.17E-02	1.02E-03
	22	511.07	2.07E+02	52.34	1.12E-02	9.90E-04
	23	546.67	3.46E+01	31.29	1.07E-02	9.53E-04
	24	583.41	2.98E+02	48.46	1.02E-02	9.15E-04
	25	600.40	3.20E+01	35.10	9.94E-03	8.98E-04
	26	609.59	4.83E+02	59.20	9.82E-03	8.88E-04
	27	639.20	3.30E+01	29.46	9.47E-03	8.57E-04
	28	645.38	2.31E+01	19.29	9.40E-03	8.51E-04
	29	665.74	3.52E+01	26.75	9.17E-03	8.31E-04
	30	727.77	5.34E+01	43.57	8.55E-03	7.75E-04
	31	768.50	4.04E+01	32.05	8.19E-03	7.38E-04
	32	794.23	4.43E+01	32.19	7.98E-03	7.15E-04
	33	805.62	4.37E+01	31.86	7.89E-03	7.05E-04
	34	861.14	4.43E+01	23.79	7.48E-03	6.55E-04
	35	911.71	2.12E+02	46.36	7.14E-03	6.15E-04
	36	969.55	9.90E+01	40.68	6.80E-03	5.85E-04
	37	977.47	2.94E+01	24.82	6.76E-03	5.81E-04
	38	1120.71	7.52E+01	33.76	6.06E-03	5.06E-04
	39	1155.53	3.34E+01	31.70	5.92E-03	4.88E-04
	40	1408.85	1.95E+01	17.20	5.10E-03	4.32E-04
	41	1461.48	8.40E+02	63.12	4.97E-03	4.19E-04
	42	1510.14	2.65E+01	24.66	4.86E-03	4.07E-04
	43	1526.06	9.00E+00	6.00	4.82E-03	4.03E-04
	44	1590.19	2.62E+01	18.91	4.69E-03	3.87E-04
	45	1621.30	1.10E+01	12.85	4.63E-03	3.79E-04

: 00523

Analysis Report for 1510064-08

CP2211S06-07

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
46	1683.58	6.78E+00	6.96	4.52E-03	3.64E-04
47	1691.69	7.95E+00	7.76	4.51E-03	3.62E-04
48	1729.28	1.77E+01	14.74	4.45E-03	3.52E-04
49	1765.41	9.85E+01	24.48	4.39E-03	3.43E-04
50	1848.12	1.05E+01	8.97	4.28E-03	3.26E-04
51	1963.89	4.69E+00	7.12	4.15E-03	3.26E-04
52	2103.62	2.35E+01	14.11	4.02E-03	3.26E-04
53	2163.91	6.00E+00	4.90	3.98E-03	3.26E-04
54	2205.11	2.17E+01	10.78	3.95E-03	3.26E-04
55	2298.52	6.13E+00	6.93	3.89E-03	3.26E-04
56	2306.11	9.86E+00	9.38	3.89E-03	3.26E-04
57	2448.85	6.00E+00	4.90	3.83E-03	3.26E-04
58	2582.77	5.00E+00	4.47	3.80E-03	3.26E-04
59	2615.30	1.32E+02	23.69	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 : 11/3/2015 1:29:53PM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000028941.CNF

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.	
	1	63.21	2.43E+02	106.96	7.80E+01	1.33E+01	1.65E+02	1.08E+02
M	2	73.46	2.06E+02	78.89			2.06E+02	7.89E+01
m	3	77.20	1.02E+03	117.48	9.75E+00	8.28E+00	1.01E+03	1.18E+02
m	4	87.80	2.08E+02	68.06			2.08E+02	6.81E+01
m	5	92.53	3.39E+02	73.16	1.34E+02	9.83E+00	2.05E+02	7.38E+01
	6	106.41	8.16E+01	92.99			8.16E+01	9.30E+01
	7	154.56	5.54E+01	68.56			5.54E+01	6.86E+01
	8	185.86	2.57E+02	93.54	6.41E+01	7.38E+00	1.93E+02	9.38E+01
	9	209.82	8.17E+01	68.56			8.17E+01	6.86E+01
M	10	238.65	1.10E+03	78.28	2.34E+01	6.34E+00	1.07E+03	7.85E+01
m	11	241.87	2.65E+02	62.80			2.65E+02	6.28E+01
	12	270.89	8.62E+01	64.03			8.62E+01	6.40E+01
M	13	295.36	3.82E+02	53.28	4.17E+00	5.50E+00	3.78E+02	5.36E+01
m	14	300.07	1.00E+02	53.24			1.00E+02	5.32E+01
M	15	324.62	3.11E+01	27.93			3.11E+01	2.79E+01
m	16	328.08	8.15E+01	42.37			8.15E+01	4.24E+01

Analysis Report for 1510064-08

CP2211S06-07

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
m	17	338.54	2.19E+02	48.57	2.22E-01	4.54E+00	2.19E+02	4.88E+01
	18	352.13	7.15E+02	79.57	8.83E+00	4.91E+00	7.06E+02	7.97E+01
	19	409.86	4.88E+01	36.97			4.88E+01	3.70E+01
	20	463.12	7.60E+01	59.65			7.60E+01	5.96E+01
	21	486.18	2.64E+01	33.18			2.64E+01	3.32E+01
	22	511.07	2.07E+02	52.34	8.12E+01	5.49E+00	1.26E+02	5.26E+01
	23	546.67	3.46E+01	31.29			3.46E+01	3.13E+01
	24	583.41	2.98E+02	48.46	6.34E+00	3.74E+00	2.92E+02	4.86E+01
	25	600.40	3.20E+01	35.10			3.20E+01	3.51E+01
	26	609.59	4.83E+02	59.20	5.20E+00	3.69E+00	4.77E+02	5.93E+01
	27	639.20	3.30E+01	29.46			3.30E+01	2.95E+01
	28	645.38	2.31E+01	19.29			2.31E+01	1.93E+01
	29	665.74	3.52E+01	26.75			3.52E+01	2.67E+01
	30	727.77	5.34E+01	43.57			5.34E+01	4.36E+01
	31	768.50	4.04E+01	32.05			4.04E+01	3.21E+01
	32	794.23	4.43E+01	32.19			4.43E+01	3.22E+01
	33	805.62	4.37E+01	31.86			4.37E+01	3.19E+01
	34	861.14	4.43E+01	23.79			4.43E+01	2.38E+01
	35	911.71	2.12E+02	46.36	3.28E+00	2.53E+00	2.09E+02	4.64E+01
	36	969.55	9.90E+01	40.68			9.90E+01	4.07E+01
	37	977.47	2.94E+01	24.82			2.94E+01	2.48E+01
	38	1120.71	7.52E+01	33.76	2.28E+00	2.55E+00	7.29E+01	3.39E+01
	39	1155.53	3.34E+01	31.70			3.34E+01	3.17E+01
	40	1408.85	1.95E+01	17.20			1.95E+01	1.72E+01
	41	1461.48	8.40E+02	63.12	6.46E+00	2.33E+00	8.33E+02	6.32E+01
	42	1510.14	2.65E+01	24.66			2.65E+01	2.47E+01
	43	1526.06	9.00E+00	6.00			9.00E+00	6.00E+00
	44	1590.19	2.62E+01	18.91			2.62E+01	1.89E+01
	45	1621.30	1.10E+01	12.85			1.10E+01	1.28E+01
	46	1683.58	6.78E+00	6.96			6.78E+00	6.96E+00
	47	1691.69	7.95E+00	7.76			7.95E+00	7.76E+00
	48	1729.28	1.77E+01	14.74			1.77E+01	1.47E+01
	49	1765.41	9.85E+01	24.48			9.85E+01	2.45E+01
	50	1848.12	1.05E+01	8.97			1.05E+01	8.97E+00
	51	1963.89	4.69E+00	7.12			4.69E+00	7.12E+00
	52	2103.62	2.35E+01	14.11			2.35E+01	1.41E+01
	53	2163.91	6.00E+00	4.90			6.00E+00	4.90E+00
	54	2205.11	2.17E+01	10.78			2.17E+01	1.08E+01
	55	2298.52	6.13E+00	6.93			6.13E+00	6.93E+00
	56	2306.11	9.86E+00	9.38			9.86E+00	9.38E+00
	57	2448.85	6.00E+00	4.90			6.00E+00	4.90E+00
	58	2582.77	5.00E+00	4.47			5.00E+00	4.47E+00
	59	2615.30	1.32E+02	23.69	3.47E+00	1.48E+00	1.28E+02	2.37E+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 1510064-08

CP2211S06-07

AREA CORRECTION REPORT REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 11/3/2015 1:29:53PM
 Ref. Peak Energy : 0.00 Reference Date :
 Peak Ratio : 0.00 Uncertainty : 0.00
 Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000028941.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	63.21	2.43E+02	106.96	7.80E+01	1.33E+01	1.65E+02	1.08E+02
M	2	73.46	2.06E+02	78.89			2.06E+02	7.89E+01
m	3	77.20	1.02E+03	117.48	9.75E+00	8.28E+00	1.01E+03	1.18E+02
m	4	87.80	2.08E+02	68.06			2.08E+02	6.81E+01
m	5	92.53	3.39E+02	73.16	1.34E+02	9.83E+00	2.05E+02	7.38E+01
	6	106.41	8.16E+01	92.99			8.16E+01	9.30E+01
	7	154.56	5.54E+01	68.56			5.54E+01	6.86E+01
	8	185.86	2.57E+02	93.54	6.41E+01	7.38E+00	1.93E+02	9.38E+01
	9	209.82	8.17E+01	68.56			8.17E+01	6.86E+01
M	10	238.65	1.10E+03	78.28	2.34E+01	6.34E+00	1.07E+03	7.85E+01
m	11	241.87	2.65E+02	62.80			2.65E+02	6.28E+01
	12	270.89	8.62E+01	64.03			8.62E+01	6.40E+01
M	13	295.36	3.82E+02	53.28	4.17E+00	5.50E+00	3.78E+02	5.36E+01
m	14	300.07	1.00E+02	53.24			1.00E+02	5.32E+01
M	15	324.62	3.11E+01	27.93			3.11E+01	2.79E+01
m	16	328.08	8.15E+01	42.37			8.15E+01	4.24E+01
m	17	338.54	2.19E+02	48.57	2.22E-01	4.54E+00	2.19E+02	4.88E+01
	18	352.13	7.15E+02	79.57	8.83E+00	4.91E+00	7.06E+02	7.97E+01
	19	409.86	4.88E+01	36.97			4.88E+01	3.70E+01
	20	463.12	7.60E+01	59.65			7.60E+01	5.96E+01
	21	486.18	2.64E+01	33.18			2.64E+01	3.32E+01
	22	511.07	2.07E+02	52.34	8.12E+01	5.49E+00	1.26E+02	5.26E+01
	23	546.67	3.46E+01	31.29			3.46E+01	3.13E+01
	24	583.41	2.98E+02	48.46	6.34E+00	3.74E+00	2.92E+02	4.86E+01
	25	600.40	3.20E+01	35.10			3.20E+01	3.51E+01
	26	609.59	4.83E+02	59.20	5.20E+00	3.69E+00	4.77E+02	5.93E+01
	27	639.20	3.30E+01	29.46			3.30E+01	2.95E+01
	28	645.38	2.31E+01	19.29			2.31E+01	1.93E+01
	29	665.74	3.52E+01	26.75			3.52E+01	2.67E+01
	30	727.77	5.34E+01	43.57			5.34E+01	4.36E+01
	31	768.50	4.04E+01	32.05			4.04E+01	3.21E+01
	32	794.23	4.43E+01	32.19			4.43E+01	3.22E+01
	33	805.62	4.37E+01	31.86			4.37E+01	3.19E+01
	34	861.14	4.43E+01	23.79			4.43E+01	2.38E+01
	35	911.71	2.12E+02	46.36	3.28E+00	2.53E+00	2.09E+02	4.64E+01
	36	969.55	9.90E+01	40.68			9.90E+01	4.07E+01
	37	977.47	2.94E+01	24.82			2.94E+01	2.48E+01
	38	1120.71	7.52E+01	33.76	2.28E+00	2.55E+00	7.29E+01	3.39E+01
	39	1155.53	3.34E+01	31.70			3.34E+01	3.17E+01
	40	1408.85	1.95E+01	17.20			1.95E+01	1.72E+01
	41	1461.48	8.40E+02	63.12	6.46E+00	2.33E+00	8.33E+02	6.32E+01

Analysis Report for 1510064-08

CP2211S06-07

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
42	1510.14	2.65E+01	24.66			2.65E+01	2.47E+01
43	1526.06	9.00E+00	6.00			9.00E+00	6.00E+00
44	1590.19	2.62E+01	18.91			2.62E+01	1.89E+01
45	1621.30	1.10E+01	12.85			1.10E+01	1.28E+01
46	1683.58	6.78E+00	6.96			6.78E+00	6.96E+00
47	1691.69	7.95E+00	7.76			7.95E+00	7.76E+00
48	1729.28	1.77E+01	14.74			1.77E+01	1.47E+01
49	1765.41	9.85E+01	24.48			9.85E+01	2.45E+01
50	1848.12	1.05E+01	8.97			1.05E+01	8.97E+00
51	1963.89	4.69E+00	7.12			4.69E+00	7.12E+00
52	2103.62	2.35E+01	14.11			2.35E+01	1.41E+01
53	2163.91	6.00E+00	4.90			6.00E+00	4.90E+00
54	2205.11	2.17E+01	10.78			2.17E+01	1.08E+01
55	2298.52	6.13E+00	6.93			6.13E+00	6.93E+00
56	2306.11	9.86E+00	9.38			9.86E+00	9.38E+00
57	2448.85	6.00E+00	4.90			6.00E+00	4.90E+00
58	2582.77	5.00E+00	4.47			5.00E+00	4.47E+00
59	2615.30	1.32E+02	23.69	3.47E+00	1.48E+00	1.28E+02	2.37E+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	0.930	1460.81 *	10.67	1.93E+01	2.23E+00
GA-67	0.641	93.31 *	35.70	9.97E+01	3.85E+02
		208.95 *	2.24	8.69E+02	3.28E+03
		300.22 *	16.00	1.89E+02	7.32E+02
CD-109	0.991	88.03 *	3.72	2.52E+00	8.72E-01
SN-126	0.992	87.57 *	37.00	2.43E-01	8.28E-02
TL-208	0.956	583.14 *	30.22	1.17E+00	2.21E-01
		860.37 *	4.48	1.63E+00	8.86E-01
		2614.66 *	35.85	1.16E+00	2.37E-01
BI-212	0.940	727.17 *	11.80	6.51E-01	5.35E-01
		1620.62 *	2.75	1.07E+00	1.24E+00
PB-212	1.000	238.63 *	44.60	1.54E+00	1.73E-01
		300.09 *	3.41	2.20E+00	1.18E+00

: 00527

Analysis Report for 1510064-08
 CP2211S06-07

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
BI-214	0.955	609.31 *	46.30	1.29E+00	1.99E-01
		1120.29 *	15.10	9.80E-01	4.63E-01
		1764.49 *	15.80	1.75E+00	4.55E-01
		2204.22 *	4.98	1.36E+00	6.84E-01
PB-214	0.994	295.21 *	19.19	1.45E+00	2.35E-01
		351.92 *	37.19	1.58E+00	2.20E-01
RA-223	0.913	323.87 *	3.88	6.32E-01	5.69E-01
RA-224	0.882	240.98 *	3.95	4.33E+00	1.09E+00
RA-226	0.981	186.21 *	3.28	3.23E+00	6.13E+00
AC-228	0.958	338.32 *	11.40	1.56E+00	3.69E-01
		911.07 *	27.70	1.30E+00	3.10E-01
		969.11 *	16.60	1.08E+00	4.53E-01
TH-234	0.999	63.29 *	3.80	2.15E+00	1.41E+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 : 11/3/2015 1:29:53PM
 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	73.46	5.72174E-02	19.15	
m	3	77.20	2.79445E-01	5.85	
	6	106.41	2.26592E-02	57.00	Tol. NP-239
	7	154.56	1.53944E-02	61.85	
	12	270.89	2.39533E-02	37.13	
m	16	328.08	2.26425E-02	25.99	
	19	409.86	1.35535E-02	37.89	
	20	463.12	2.11159E-02	39.23	
	21	486.18	7.34477E-03	62.74	Sum
	22	511.07	3.49216E-02	20.93	Sum
	23	546.67	9.61111E-03	45.22	
	25	600.40	8.88889E-03	54.84	Sum
	27	639.20	9.15621E-03	44.69	Sum
	28	645.38	6.41975E-03	41.74	Tol. SB-124
	29	665.74	9.77011E-03	38.03	Tol. SB-126
	31	768.50	1.12278E-02	39.65	Sum

Analysis Report for 1510064-08

CP2211S06-07

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
32	794.23	1.23116E-02	36.31	Sum	
33	805.62	1.21456E-02	36.44		
37	977.47	8.16585E-03	42.22		
39	1155.53	9.27778E-03	47.46	Sum	
40	1408.85	5.41667E-03	44.11	Tol.	EU-152
42	1510.14	7.36111E-03	46.52		
43	1526.06	2.50000E-03	33.33		
44	1590.19	7.28535E-03	36.05		
46	1683.58	1.88272E-03	51.38	Sum	
47	1691.69	2.20833E-03	48.82	Tol.	SB-124
48	1729.28	4.91858E-03	41.62		
50	1848.12	2.91667E-03	42.72	Sum	
51	1963.89	1.30208E-03	75.99		
52	2103.62	6.54122E-03	29.95	S-Esc	
53	2163.91	1.66667E-03	40.82		
55	2298.52	1.70139E-03	56.56	Sum	
56	2306.11	2.73810E-03	47.58		
57	2448.85	1.66667E-03	40.82		
58	2582.77	1.38889E-03	44.72	Sum	

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

NUCLIDE IDENTIFICATION REPORT

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

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.93	1460.81 *	10.67	1.93E+01	2.23E+00
GA-67	0.64	93.31 *	35.70	9.97E+01	3.85E+02
		208.95 *	2.24	8.69E+02	3.28E+03
		300.22 *	16.00	1.89E+02	7.32E+02
CD-109	0.99	88.03 *	3.72	2.52E+00	8.72E-01
SN-126	0.99	87.57 *	37.00	2.43E-01	8.28E-02
TL-208	0.95	583.14 *	30.22	1.17E+00	2.21E-01
		860.37 *	4.48	1.63E+00	8.86E-01
		2614.66 *	35.85	1.16E+00	2.37E-01

Analysis Report for 1510064-08
 CP2211S06-07

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
BI-212	0.94	727.17 *	11.80	6.51E-01	5.35E-01
		1620.62 *	2.75	1.07E+00	1.24E+00
PB-212	1.00	238.63 *	44.60	1.54E+00	1.73E-01
		300.09 *	3.41	2.20E+00	1.18E+00
BI-214	0.95	609.31 *	46.30	1.29E+00	1.99E-01
		1120.29 *	15.10	9.80E-01	4.63E-01
		1764.49 *	15.80	1.75E+00	4.55E-01
		2204.22 *	4.98	1.36E+00	6.84E-01
PB-214	0.99	295.21 *	19.19	1.45E+00	2.35E-01
		351.92 *	37.19	1.58E+00	2.20E-01
RA-223	0.91	323.87 *	3.88	6.32E-01	5.69E-01
RA-224	0.88	240.98 *	3.95	4.33E+00	1.09E+00
RA-226	0.98	186.21 *	3.28	3.23E+00	6.13E+00
AC-228	0.95	338.32 *	11.40	1.56E+00	3.69E-01
		911.07 *	27.70	1.30E+00	3.10E-01
		969.11 *	16.60	1.08E+00	4.53E-01
TH-234	0.99	63.29 *	3.80	2.15E+00	1.41E+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	0.930	1.93E+01	2.23E+00	
GA-67	0.641	9.64E+01	3.56E+02	
? CD-109	0.991	2.52E+00	8.72E-01	
? SN-126	0.992	2.43E-01	8.28E-02	
TL-208	0.956	1.18E+00	1.59E-01	
BI-212	0.940	7.16E-01	4.91E-01	
PB-212	1.000	1.53E+00	1.72E-01	
BI-214	0.955	1.32E+00	1.64E-01	
PB-214	0.994	1.52E+00	1.61E-01	
RA-223	0.913	6.32E-01	5.69E-01	

Analysis Report for 1510064-08
 CP2211S06-07

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
RA-224	0.882	4.33E+00	1.09E+00	
RA-226	0.981	3.23E+00	6.13E+00	
AC-228	0.958	1.34E+00	2.10E-01	
TH-234	0.999	2.15E+00	1.41E+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 1510064-08
CP2211S06-07

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/3/2015 1:29:53PM
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	73.46	5.72174E-02		
m	3	77.20	2.79445E-01		
	6	106.41	2.26592E-02	Tol.	NP-239
	7	154.56	1.53944E-02		
	12	270.89	2.39533E-02		
m	16	328.08	2.26425E-02		
	19	409.86	1.35535E-02		
	20	463.12	2.11159E-02		
	21	486.18	7.34477E-03	Sum	
	22	511.07	3.49216E-02	Sum	
	23	546.67	9.61111E-03		
	25	600.40	8.88889E-03	Sum	
	27	639.20	9.15621E-03	Sum	
	28	645.38	6.41975E-03	Tol.	SB-124
	29	665.74	9.77011E-03	Tol.	SB-126
	31	768.50	1.12278E-02	Sum	
	32	794.23	1.23116E-02	Sum	
	33	805.62	1.21456E-02		
	37	977.47	8.16585E-03		
	39	1155.53	9.27778E-03	Sum	
	40	1408.85	5.41667E-03	Tol.	EU-152
	42	1510.14	7.36111E-03		
	43	1526.06	2.50000E-03		
	44	1590.19	7.28535E-03		
	46	1683.58	1.88272E-03	Sum	
	47	1691.69	2.20833E-03	Tol.	SB-124
	48	1729.28	4.91858E-03		
	50	1848.12	2.91667E-03	Sum	
	51	1963.89	1.30208E-03		
	52	2103.62	6.54122E-03	S-Esc	
	53	2163.91	1.66667E-03		
	55	2298.52	1.70139E-03	Sum	
	56	2306.11	2.73810E-03		
	57	2448.85	1.66667E-03		
	58	2582.77	1.38889E-03	Sum	

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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	3.30E-01	7.45E-01	7.45E-01
+	NA-22	1274.54	99.94	-1.60E-02	7.69E-02	7.69E-02
+	NA-24	1368.53	99.99	6.78E+11	1.68E+12	2.70E+12
		2754.09	99.86	1.79E+11		1.68E+12
+	AL-26	1808.65	99.76	5.22E-03	4.75E-02	4.75E-02
+	K-40	1460.81	* 10.67	1.93E+01	1.04E+00	1.04E+00
+	@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88	94.40	3.30E-02	6.43E-02	6.43E-02
		78.34	96.00	2.64E-01		8.35E-02
+	SC-46	889.25	99.98	1.49E-02	8.01E-02	8.01E-02
		1120.51	99.99	1.99E-01		1.47E-01
+	V-48	983.52	99.98	-8.47E-02	1.98E-01	1.98E-01
		1312.10	97.50	-1.09E-01		2.04E-01
+	CR-51	320.08	9.83	6.91E-01	9.90E-01	9.90E-01
+	MN-54	834.83	99.97	-1.27E-02	7.44E-02	7.44E-02
+	CO-56	846.75	99.96	-3.15E-02	7.88E-02	7.88E-02
		1037.75	14.03	-1.92E-01		6.22E-01
		1238.25	67.00	1.30E-01		1.93E-01
		1771.40	15.51	9.28E-02		4.04E-01
		2598.48	16.90	0.00E+00		3.22E-01
+	CO-57	122.06	85.51	4.10E-03	5.54E-02	5.54E-02
		136.48	10.60	-9.55E-03		4.59E-01
+	CO-58	810.76	99.40	1.79E-02	8.25E-02	8.25E-02
+	FE-59	1099.22	56.50	8.68E-02	2.16E-01	2.16E-01
		1291.56	43.20	6.18E-02		2.73E-01
+	CO-60	1173.22	100.00	7.89E-03	7.35E-02	8.42E-02
		1332.49	100.00	5.24E-03		7.35E-02
+	ZN-65	1115.52	50.75	-1.50E-02	1.67E-01	1.67E-01
+	GA-67	93.31	* 35.70	9.97E+01	1.25E+02	1.25E+02
		208.95	* 2.24	8.69E+02		1.19E+03
		300.22	* 16.00	1.89E+02		2.79E+02
+	SE-75	121.11	16.70	-1.82E-01	8.91E-02	3.02E-01

Analysis Report for 1510064-08

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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	-4.38E-02	8.91E-02	8.91E-02
		264.65	59.80	1.55E-03		8.97E-02
		279.53	25.20	1.23E-01		2.31E-01
		400.65	11.40	-2.75E-02		5.01E-01
+	RB-82	776.52	13.00	-4.80E-01	1.05E+00	1.05E+00
+	RB-83	520.41	46.00	-2.54E-02	1.43E-01	1.43E-01
		529.64	30.30	2.62E-03		2.42E-01
		552.65	16.40	2.25E-01		4.36E-01
+	KR-85	513.99	0.43	3.33E+01	1.94E+01	1.94E+01
+	SR-85	513.99	99.27	1.96E-01	1.14E-01	1.14E-01
+	Y-88	898.02	93.40	3.82E-02	5.20E-02	8.74E-02
		1836.01	99.38	-1.78E-02		5.20E-02
+	NB-93M	16.57	9.43	-3.71E+01	6.34E+01	6.34E+01
+	NB-94	702.63	100.00	-3.22E-03	6.18E-02	6.53E-02
		871.10	100.00	2.82E-03		6.18E-02
+	NB-95	765.79	99.81	2.10E-02	1.45E-01	1.45E-01
+	NB-95M	235.69	25.00	-5.27E+02	5.38E+01	5.38E+01
+	ZR-95	724.18	43.70	-2.22E-02	1.56E-01	2.26E-01
		756.72	55.30	8.70E-03		1.56E-01
+	MO-99	181.06	6.20	-1.10E+02	6.05E+02	9.37E+02
		739.58	12.80	-1.27E+01		6.05E+02
		778.00	4.50	-2.46E+02		1.75E+03
+	RU-103	497.08	89.00	-1.51E-02	1.02E-01	1.02E-01
+	RU-106	621.84	9.80	-4.18E-01	5.59E-01	5.59E-01
+	AG-108M	433.93	89.90	-5.91E-03	6.02E-02	6.02E-02
		614.37	90.40	9.50E-03		6.57E-02
		722.95	90.50	1.59E-02		7.61E-02
+	CD-109	88.03	3.72	2.52E+00	3.07E+00	3.07E+00
+	AG-110M	657.75	93.14	2.18E-02	6.96E-02	6.96E-02
		677.61	10.53	-3.35E-01		5.70E-01
		706.67	16.46	2.11E-01		4.53E-01
		763.93	21.98	2.25E-02		3.34E-01
		884.67	71.63	-1.63E-02		8.87E-02
		1384.27	23.94	-3.22E-01		2.23E-01
+	CD-113M	263.70	0.02	-4.54E+01	1.99E+02	1.99E+02
+	SN-113	255.12	1.93	-5.07E-01	8.96E-02	2.85E+00
		391.69	64.90	1.22E-02		8.96E-02
+	TE123M	159.00	84.10	3.65E-02	6.38E-02	6.38E-02
+	SB-124	602.71	97.87	-4.63E-02	8.93E-02	8.93E-02
		645.85	7.26	-3.61E-01		9.98E-01
		722.78	11.10	1.79E-01		8.58E-01
		1691.02	49.00	5.57E-02		1.28E-01
+	I-125	35.49	6.49	1.28E+00	2.81E+00	2.81E+00
+	SB-125	176.33	6.89	9.53E-02	1.99E-01	6.97E-01
		427.89	29.33	-7.38E-02		1.99E-01
		463.38	10.35	7.73E-01		7.06E-01
		600.56	17.80	1.94E-01		3.69E-01
		635.90	11.32	-9.79E-02		5.14E-01

Analysis Report for 1510064-08

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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	-1.64E-02	3.01E-01	3.18E-01
		666.33	99.60	1.07E-01		3.01E-01
		695.00	99.60	2.73E-01		3.52E-01
		720.50	53.80	1.30E-01		6.21E-01
+	SN-126	87.57	* 37.00	2.43E-01	2.96E-01	2.96E-01
+	SB-127	473.00	25.00	-6.27E+00	2.99E+01	3.54E+01
		685.20	35.70	1.83E+01		2.99E+01
		783.80	14.70	3.11E+01		7.88E+01
+	I-129	29.78	57.00	-6.24E-02	4.35E-01	4.35E-01
		33.60	13.20	-3.10E-01		1.20E+00
		39.58	7.52	-8.67E-01		1.30E+00
+	I-131	284.30	6.05	1.35E+00	6.26E-01	8.71E+00
		364.48	81.20	-1.04E-01		6.26E-01
		636.97	7.26	-1.34E+00		9.18E+00
		722.89	1.80	9.11E+00		4.36E+01
+	TE-132	49.72	13.10	-4.48E+02	2.22E+01	2.11E+02
		228.16	88.00	2.58E+00		2.22E+01
+	BA-133	81.00	33.00	-7.63E-01	8.72E-02	1.62E-01
		302.84	17.80	1.15E-01		2.92E-01
		356.01	60.00	-7.13E-01		8.72E-02
+	I-133	529.87	86.30	4.67E+06	4.31E+08	4.31E+08
+	XE-133	81.00	38.00	-2.75E+01	5.85E+00	5.85E+00
+	CS-134	563.23	8.38	1.61E-01	6.77E-02	7.44E-01
		569.32	15.43	1.16E-01		4.21E-01
		604.70	97.60	-9.53E-01		6.77E-02
		795.84	85.40	2.48E-02		8.97E-02
		801.93	8.73	-3.17E-02		8.15E-01
+	CS-135	268.24	16.00	5.33E-02	3.30E-01	3.30E-01
+	@ 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	2.58E+00	2.78E-01	2.95E+00
		163.89	4.61	8.46E-01		4.29E+00
		176.55	13.56	2.10E-01		1.54E+00
		273.65	12.66	-1.59E+00		1.78E+00
		340.57	48.50	6.95E-01		5.96E-01
		818.50	99.70	6.24E-02		2.78E-01
		1048.07	79.60	1.02E-02		3.95E-01
		1235.34	19.70	-2.99E+00		1.87E+00
+	CS-137	661.65	85.12	-6.71E-03	6.89E-02	6.89E-02
+	LA-138	788.74	34.00	-1.67E-02	1.01E-01	2.11E-01
		1435.80	66.00	3.18E-02		1.01E-01
+	CE-139	165.85	80.35	4.16E-02	6.57E-02	6.57E-02
+	BA-140	162.64	6.70	-5.50E-01	1.15E+00	3.04E+00
		304.84	4.50	-4.68E-02		4.66E+00
		423.70	3.20	-1.99E+00		8.18E+00
		437.55	2.00	-5.02E+00		1.21E+01
		537.32	25.00	6.63E-01		1.15E+00
+	LA-140	328.77	20.50	5.14E-01	2.92E-01	1.27E+00

Analysis Report for 1510064-08

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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	3.94E-02	2.92E-01	5.73E-01
	815.85	23.50	-6.56E-01		1.17E+00
	1596.49	95.49	-2.97E-02		2.92E-01
+ CE-141	145.44	48.40	6.59E-02	1.83E-01	1.83E-01
+ CE-143	57.36	11.80	-3.04E+04	2.80E+05	8.18E+05
	293.26	42.00	7.96E+05		2.80E+05
	664.55	5.20	1.04E+06		1.82E+06
+ CE-144	133.54	10.80	2.05E-01	4.59E-01	4.59E-01
+ PM-144	476.78	42.00	8.76E-03	6.15E-02	1.36E-01
	618.01	98.60	2.49E-02		6.15E-02
	696.49	99.49	-4.60E-03		7.13E-02
+ PM-145	36.85	21.70	-7.70E-02	2.84E-01	5.39E-01
	37.36	39.70	-1.56E-01		2.84E-01
	42.30	15.10	-2.90E-01		5.91E-01
	72.40	2.31	-2.12E+00		3.15E+00
+ PM-146	453.90	39.94	-3.15E-02	1.39E-01	1.39E-01
	735.90	14.01	8.84E-02		4.47E-01
	747.13	13.10	9.13E-02		5.05E-01
+ ND-147	91.11	28.90	-1.87E+00	1.33E+00	1.33E+00
	531.02	13.10	-8.75E-01		2.63E+00
+ PM-149	285.90	3.10	5.17E+03	1.06E+04	1.06E+04
+ EU-152	121.78	20.50	1.60E-02	2.16E-01	2.16E-01
	244.69	5.40	-2.70E-01		9.93E-01
	344.27	19.13	2.68E-02		2.44E-01
	778.89	9.20	-9.24E-02		6.91E-01
	964.01	10.40	-1.53E-01		7.84E-01
	1085.78	7.22	2.75E-01		1.08E+00
	1112.02	9.60	3.82E-01		8.84E-01
	1407.95	14.94	1.29E-01		4.84E-01
	97.43	31.30	6.29E-02	1.63E-01	1.63E-01
	103.18	22.20	-1.14E-01		2.15E-01
+ EU-154	123.07	40.50	7.95E-02	1.12E-01	1.12E-01
	723.30	19.70	7.35E-02		3.52E-01
	873.19	11.50	-2.23E-01		5.14E-01
	996.32	10.30	-4.02E-03		7.16E-01
	1004.76	17.90	7.49E-02		4.27E-01
	1274.45	35.50	-4.43E-02		2.13E-01
	86.50	30.90	-1.22E-03	1.99E-01	1.99E-01
+ EU-155	105.30	20.70	-2.17E-02		2.24E-01
	811.77	10.40	3.87E-01	2.07E+00	2.07E+00
+ EU-156	1153.47	7.20	1.78E+00		4.50E+00
	1230.71	8.90	9.45E-01		3.47E+00
	184.41	72.60	1.81E-01	8.67E-02	8.67E-02
+ HO-166M	280.45	29.60	-1.11E-01		1.53E-01
	410.94	11.10	-2.03E-02		5.53E-01
	711.69	54.10	5.83E-02		1.22E-01
	66.72	0.14	3.69E-01	4.51E+01	4.51E+01
+ HF-172	81.75	4.52	-1.17E+00	4.10E-01	1.22E+00
	125.81	11.30	-3.47E-01		4.10E-01

Analysis Report for 1510064-08

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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	-7.32E-01	2.20E+00	4.22E+00
		810.06	16.63	6.90E-01		7.23E+00
		912.12	15.25	4.49E+01		1.68E+01
		1093.66	62.50	-8.86E-01		2.20E+00
+	LU-173	100.72	5.24	5.48E-02	2.79E-01	8.85E-01
		272.11	21.20	3.10E-01		2.79E-01
+	HF-175	343.40	84.00	-3.20E-02	7.38E-02	7.38E-02
+	LU-176	88.34	13.30	8.11E-01	4.69E-02	4.76E-01
		201.83	86.00	-1.42E-02		5.68E-02
		306.78	94.00	-1.61E-03		4.69E-02
+	TA-182	67.75	41.20	8.96E-02	1.75E-01	1.75E-01
		1121.30	34.90	4.13E-01		3.89E-01
		1189.05	16.23	3.07E-01		6.60E-01
		1221.41	26.98	1.91E-02		3.84E-01
		1231.02	11.44	2.41E-01		8.84E-01
+	IR-192	308.46	29.68	-1.21E-02	1.55E-01	1.89E-01
		468.07	48.10	-2.78E-03		1.55E-01
+	HG-203	279.19	77.30	5.71E-02	9.85E-02	9.85E-02
+	BI-207	569.67	97.72	1.25E-02	6.44E-02	6.44E-02
		1063.62	74.90	-1.76E-02		1.06E-01
+	TL-208	583.14	* 30.22	1.17E+00	1.29E-01	2.39E-01
		860.37	* 4.48	1.63E+00		1.29E+00
		2614.66	* 35.85	1.16E+00		1.29E-01
+	BI-210M	262.00	45.00	-3.98E-02	1.03E-01	1.03E-01
		300.00	23.00	-4.81E-01		2.44E-01
+	PB-210	46.50	4.25	1.71E+00	1.92E+00	1.92E+00
+	PB-211	404.84	2.90	1.46E-01	1.69E+00	1.69E+00
		831.96	2.90	-1.06E+00		2.16E+00
+	BI-212	727.17	* 11.80	6.51E-01	8.57E-01	8.57E-01
		1620.62	* 2.75	1.07E+00		2.01E+00
+	PB-212	238.63	* 44.60	1.54E+00	2.12E-01	2.12E-01
		300.09	* 3.41	2.20E+00		3.24E+00
+	BI-214	609.31	* 46.30	1.29E+00	1.86E-01	1.86E-01
		1120.29	* 15.10	9.80E-01		6.83E-01
		1764.49	* 15.80	1.75E+00		4.66E-01
		2204.22	* 4.98	1.36E+00		7.28E-01
+	PB-214	295.21	* 19.19	1.45E+00	2.25E-01	5.64E-01
		351.92	* 37.19	1.58E+00		2.25E-01
+	RN-219	401.80	6.50	-2.35E-02	7.36E-01	7.36E-01
+	RA-223	323.87	* 3.88	6.32E-01	3.77E+00	3.77E+00
+	RA-224	240.98	* 3.95	4.33E+00	2.37E+00	2.37E+00
+	RA-225	40.00	31.00	-7.68E-01	1.15E+00	1.15E+00
+	RA-226	186.21	* 3.28	3.23E+00	2.52E+00	2.52E+00
+	TH-227	50.10	8.40	-1.71E+00	5.19E-01	8.01E-01
		236.00	11.50	-5.08E+00		5.19E-01
		256.20	6.30	-1.23E-01		7.57E-01
+	AC-228	338.32	* 11.40	1.56E+00	3.89E-01	1.33E+00
		911.07	* 27.70	1.30E+00		3.89E-01

Analysis Report for 1510064-08

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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	1.08E+00	3.89E-01	6.66E-01
+	TH-230	48.44		16.90	-1.91E-01	4.43E-01	4.43E-01
		62.85		4.60	3.02E+00		1.57E+00
		67.67		0.37	8.42E+00		1.64E+01
+	PA-231	283.67		1.60	8.09E-01	2.25E+00	2.93E+00
		302.67		2.30	8.88E-01		2.25E+00
+	TH-231	25.64		14.70	2.05E+00	8.77E-01	3.71E+00
		84.21		6.40	-1.78E+00		8.77E-01
+	PA-233	311.98		38.60	-5.13E-02	2.29E-01	2.29E-01
+	PA-234	131.20		20.40	2.47E-02	2.35E-01	2.35E-01
		733.99		8.80	-3.76E-01		6.81E-01
		946.00		12.00	-2.82E-01		5.82E-01
+	PA-234M	1001.03		0.92	3.55E+00	8.62E+00	8.62E+00
+	TH-234	63.29	*	3.80	2.15E+00	2.28E+00	2.28E+00
+	U-235	143.76		10.50	-1.09E-01	4.47E-01	4.47E-01
		163.35		4.70	1.87E-01		9.49E-01
		205.31		4.70	4.66E-01		1.05E+00
+	NP-237	86.50		12.60	-2.97E-03	4.83E-01	4.83E-01
+	NP-239	106.10		22.70	-7.95E+01	8.21E+02	8.21E+02
		228.18		10.70	2.12E+02		1.83E+03
		277.60		14.10	3.11E+02		1.42E+03
+	AM-241	59.54		35.90	9.30E-04	1.79E-01	1.79E-01
+	AM-243	74.67		66.00	-1.73E-01	1.30E-01	1.30E-01
+	CM-243	209.75		3.29	2.60E+00	3.54E-01	1.68E+00
		228.14		10.60	5.29E-02		4.56E-01
		277.60		14.00	7.75E-02		3.54E-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

: 00538

Analysis Report for 1510064-08
CP2211S06-07

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	7.45E-01	7.45E-01	3.30E-01	3.53E-01
NA-22	1274.54	99.94	7.69E-02	7.69E-02	-1.60E-02	3.53E-02
NA-24	1368.53	99.99	2.70E+12	1.68E+12	6.78E+11	1.22E+12
	2754.09	99.86	1.68E+12		1.79E+11	6.66E+11
AL-26	1808.65	99.76	4.75E-02	4.75E-02	5.22E-03	1.99E-02
+ K-40	1460.81	*	1.04E+00	1.04E+00	1.93E+01	4.90E-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	6.43E-02	6.43E-02	3.30E-02	3.15E-02
	78.34	96.00	8.35E-02		2.64E-01	4.11E-02
SC-46	889.25	99.98	8.01E-02	8.01E-02	1.49E-02	3.71E-02
	1120.51	99.99	1.47E-01		1.99E-01	6.98E-02
V-48	983.52	99.98	1.98E-01	1.98E-01	-8.47E-02	9.06E-02
	1312.10	97.50	2.04E-01		-1.09E-01	9.12E-02
CR-51	320.08	9.83	9.90E-01	9.90E-01	6.91E-01	4.73E-01
MN-54	834.83	99.97	7.44E-02	7.44E-02	-1.27E-02	3.49E-02
CO-56	846.75	99.96	7.88E-02	7.88E-02	-3.15E-02	3.66E-02
	1037.75	14.03	6.22E-01		-1.92E-01	2.87E-01
	1238.25	67.00	1.93E-01		1.30E-01	9.10E-02
	1771.40	15.51	4.04E-01		9.28E-02	1.71E-01
	2598.48	16.90	3.22E-01		0.00E+00	1.28E-01
CO-57	122.06	85.51	5.54E-02	5.54E-02	4.10E-03	2.69E-02
	136.48	10.60	4.59E-01		-9.55E-03	2.23E-01
CO-58	810.76	99.40	8.25E-02	8.25E-02	1.79E-02	3.84E-02
FE-59	1099.22	56.50	2.16E-01	2.16E-01	8.68E-02	1.00E-01
	1291.56	43.20	2.73E-01		6.18E-02	1.25E-01
CO-60	1173.22	100.00	8.42E-02	7.35E-02	7.89E-03	3.92E-02
	1332.49	100.00	7.35E-02		5.24E-03	3.36E-02
ZN-65	1115.52	50.75	1.67E-01	1.67E-01	-1.50E-02	7.78E-02
+ GA-67	93.31	*	1.25E+02	1.25E+02	9.97E+01	6.18E+01
	208.95	*	1.19E+03		8.69E+02	5.78E+02
	300.22	*	2.79E+02		1.89E+02	1.37E+02
SE-75	121.11	16.70	3.02E-01	8.91E-02	-1.82E-01	1.47E-01
	136.00	59.20	8.91E-02		-4.38E-02	4.33E-02
	264.65	59.80	8.97E-02		1.55E-03	4.30E-02
	279.53	25.20	2.31E-01		1.23E-01	1.11E-01
	400.65	11.40	5.01E-01		-2.75E-02	2.38E-01
RB-82	776.52	13.00	1.05E+00	1.05E+00	-4.80E-01	4.92E-01
RB-83	520.41	46.00	1.43E-01	1.43E-01	-2.54E-02	6.76E-02
	529.64	30.30	2.42E-01		2.62E-03	1.15E-01
	552.65	16.40	4.36E-01		2.25E-01	2.06E-01
KR-85	513.99	0.43	1.94E+01	1.94E+01	3.33E+01	9.37E+00
SR-85	513.99	99.27	1.14E-01	1.14E-01	1.96E-01	5.51E-02
Y-88	898.02	93.40	8.74E-02	5.20E-02	3.82E-02	4.08E-02
	1836.01	99.38	5.20E-02		-1.78E-02	2.13E-02
NB-93M	16.57	9.43	6.34E+01	6.34E+01	-3.71E+01	2.95E+01
NB-94	702.63	100.00	6.53E-02	6.18E-02	-3.22E-03	3.07E-02
	871.10	100.00	6.18E-02		2.82E-03	2.87E-02
NB-95	765.79	99.81	1.45E-01	1.45E-01	2.10E-02	6.91E-02
NB-95M	235.69	25.00	5.38E+01	5.38E+01	-5.27E+02	2.61E+01
ZR-95	724.18	43.70	2.26E-01	1.56E-01	-2.22E-02	1.07E-01
	756.72	55.30	1.56E-01		8.70E-03	7.30E-02

Analysis Report for 1510064-08

CP2211S06-07

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
MO-99	181.06	6.20	9.37E+02	6.05E+02	-1.10E+02	4.54E+02
	739.58	12.80	6.05E+02		-1.27E+01	2.83E+02
	778.00	4.50	1.75E+03		-2.46E+02	8.17E+02
RU-103	497.08	89.00	1.02E-01	1.02E-01	-1.51E-02	4.83E-02
RU-106	621.84	9.80	5.59E-01	5.59E-01	-4.18E-01	2.61E-01
AG-108M	433.93	89.90	6.02E-02	6.02E-02	-5.91E-03	2.86E-02
	614.37	90.40	6.57E-02		9.50E-03	3.10E-02
	722.95	90.50	7.61E-02		1.59E-02	3.59E-02
+ CD-109	88.03	* 3.72	3.07E+00	3.07E+00	2.52E+00	1.52E+00
AG-110M	657.75	93.14	6.96E-02	6.96E-02	2.18E-02	3.27E-02
	677.61	10.53	5.70E-01		-3.35E-01	2.66E-01
	706.67	16.46	4.53E-01		2.11E-01	2.14E-01
	763.93	21.98	3.34E-01		2.25E-02	1.57E-01
	884.67	71.63	8.87E-02		-1.63E-02	4.09E-02
	1384.27	23.94	2.23E-01		-3.22E-01	9.70E-02
CD-113M	263.70	0.02	1.99E+02	1.99E+02	-4.54E+01	9.57E+01
SN-113	255.12	1.93	2.85E+00	8.96E-02	-5.07E-01	1.37E+00
	391.69	64.90	8.96E-02		1.22E-02	4.26E-02
TE123M	159.00	84.10	6.38E-02	6.38E-02	3.65E-02	3.10E-02
SB-124	602.71	97.87	8.93E-02	8.93E-02	-4.63E-02	4.23E-02
	645.85	7.26	9.98E-01		-3.61E-01	4.65E-01
	722.78	11.10	8.58E-01		1.79E-01	4.05E-01
	1691.02	49.00	1.28E-01		5.57E-02	5.38E-02
I-125	35.49	6.49	2.81E+00	2.81E+00	1.28E+00	1.37E+00
SB-125	176.33	6.89	6.97E-01	1.99E-01	9.53E-02	3.38E-01
	427.89	29.33	1.99E-01		-7.38E-02	9.51E-02
	463.38	10.35	7.06E-01		7.73E-01	3.40E-01
	600.56	17.80	3.69E-01		1.94E-01	1.75E-01
	635.90	11.32	5.14E-01		-9.79E-02	2.41E-01
	666.33	99.60	3.01E-01	3.01E-01	-1.64E-02	1.52E-01
SB-126	695.00	99.60	3.52E-01		2.07E-01	1.42E-01
	720.50	53.80	6.21E-01		1.30E-01	1.67E-01
	720.50	53.80	6.21E-01		1.30E-01	2.93E-01
+ SN-126	87.57	* 37.00	2.96E-01	2.96E-01	2.43E-01	1.46E-01
SB-127	473.00	25.00	3.54E+01	2.99E+01	-6.27E+00	1.68E+01
	685.20	35.70	2.99E+01		1.83E+01	1.41E+01
	783.80	14.70	7.88E+01		3.11E+01	3.71E+01
I-129	29.78	57.00	4.35E-01	4.35E-01	-6.24E-02	2.11E-01
	33.60	13.20	1.20E+00		-3.10E-01	5.82E-01
	39.58	7.52	1.30E+00		-8.67E-01	6.30E-01
I-131	284.30	6.05	8.71E+00	6.26E-01	1.35E+00	4.17E+00
	364.48	81.20	6.26E-01		-1.04E-01	2.97E-01
	636.97	7.26	9.18E+00		-1.34E+00	4.31E+00
	722.89	1.80	4.36E+01		9.11E+00	2.06E+01
TE-132	49.72	13.10	2.11E+02	2.22E+01	-4.48E+02	1.03E+02
	228.16	88.00	2.22E+01		2.58E+00	1.07E+01
BA-133	81.00	33.00	1.62E-01	8.72E-02	-7.63E-01	7.94E-02
	302.84	17.80	2.92E-01		1.15E-01	1.40E-01
	356.01	60.00	8.72E-02		-7.13E-01	4.17E-02
I-133	529.87	86.30	4.31E+08	4.31E+08	4.67E+06	2.04E+08
XE-133	81.00	38.00	5.85E+00	5.85E+00	-2.75E+01	2.86E+00
CS-134	563.23	8.38	7.44E-01	6.77E-02	1.61E-01	3.52E-01
	569.32	15.43	4.21E-01		1.16E-01	2.00E-01

Analysis Report for 1510064-08

CP2211S06-07

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	6.77E-02	6.77E-02	-9.53E-01	3.21E-02
	795.84	85.40	8.97E-02		2.48E-02	4.23E-02
	801.93	8.73	8.15E-01		-3.17E-02	3.83E-01
@ I-135 @	268.24	16.00	3.30E-01	3.30E-01	5.33E-02	1.59E-01
	1131.51	22.50	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
CS-136	153.22	7.46	2.95E+00	2.78E-01	2.58E+00	1.43E+00
	163.89	4.61	4.29E+00		8.46E-01	2.08E+00
	176.55	13.56	1.54E+00		2.10E-01	7.45E-01
	273.65	12.66	1.78E+00		-1.59E+00	8.56E-01
	340.57	48.50	5.96E-01		6.95E-01	2.88E-01
	818.50	99.70	2.78E-01		6.24E-02	1.29E-01
	1048.07	79.60	3.95E-01		1.02E-02	1.83E-01
	1235.34	19.70	1.87E+00		-2.99E+00	8.71E-01
CS-137	661.65	85.12	6.89E-02	6.89E-02	-6.71E-03	3.23E-02
LA-138	788.74	34.00	2.11E-01	1.01E-01	-1.67E-02	9.96E-02
	1435.80	66.00	1.01E-01		3.18E-02	4.56E-02
CE-139	165.85	80.35	6.57E-02	6.57E-02	4.16E-02	3.19E-02
BA-140	162.64	6.70	3.04E+00	1.15E+00	-5.50E-01	1.47E+00
	304.84	4.50	4.66E+00		-4.68E-02	2.23E+00
	423.70	3.20	8.18E+00		-1.99E+00	3.90E+00
	437.55	2.00	1.21E+01		-5.02E+00	5.76E+00
	537.32	25.00	1.15E+00		6.63E-01	5.49E-01
LA-140	328.77	20.50	1.27E+00	2.92E-01	5.14E-01	6.11E-01
	487.03	45.50	5.73E-01		3.94E-02	2.72E-01
	815.85	23.50	1.17E+00		-6.56E-01	5.44E-01
	1596.49	95.49	2.92E-01		-2.97E-02	1.29E-01
CE-141	145.44	48.40	1.83E-01	1.83E-01	6.59E-02	8.89E-02
CE-143	57.36	11.80	8.18E+05	2.80E+05	-3.04E+04	4.00E+05
	293.26	42.00	2.80E+05		7.96E+05	1.36E+05
	664.55	5.20	1.82E+06		1.04E+06	8.55E+05
CE-144	133.54	10.80	4.59E-01	4.59E-01	2.05E-01	2.23E-01
PM-144	476.78	42.00	1.36E-01	6.15E-02	8.76E-03	6.46E-02
	618.01	98.60	6.15E-02		2.49E-02	2.89E-02
	696.49	99.49	7.13E-02		-4.60E-03	3.36E-02
PM-145	36.85	21.70	5.39E-01	2.84E-01	-7.70E-02	2.62E-01
	37.36	39.70	2.84E-01		-1.56E-01	1.38E-01
	42.30	15.10	5.91E-01		-2.90E-01	2.88E-01
	72.40	2.31	3.15E+00		-2.12E+00	1.55E+00
PM-146	453.90	39.94	1.39E-01	1.39E-01	-3.15E-02	6.62E-02
	735.90	14.01	4.47E-01		8.84E-02	2.10E-01
	747.13	13.10	5.05E-01		9.13E-02	2.37E-01
ND-147	91.11	28.90	1.33E+00	1.33E+00	-1.87E+00	6.54E-01
	531.02	13.10	2.63E+00		-8.75E-01	1.25E+00
PM-149	285.90	3.10	1.06E+04	1.06E+04	5.17E+03	5.06E+03
EU-152	121.78	20.50	2.16E-01	2.16E-01	1.60E-02	1.05E-01
	244.69	5.40	9.93E-01		-2.70E-01	4.80E-01
	344.27	19.13	2.44E-01		2.68E-02	1.16E-01
	778.89	9.20	6.91E-01		-9.24E-02	3.23E-01
	964.01	10.40	7.84E-01		-1.53E-01	3.69E-01
	1085.78	7.22	1.08E+00		2.75E-01	5.00E-01
	1112.02	9.60	8.84E-01		3.82E-01	4.14E-01

Analysis Report for 1510064-08

CP2211S06-07

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	4.84E-01	2.16E-01	1.29E-01	2.20E-01
GD-153	97.43	31.30	1.63E-01	1.63E-01	6.29E-02	7.95E-02
	103.18	22.20	2.15E-01		-1.14E-01	1.05E-01
EU-154	123.07	40.50	1.12E-01	1.12E-01	7.95E-02	5.42E-02
	723.30	19.70	3.52E-01		7.35E-02	1.66E-01
	873.19	11.50	5.14E-01		-2.23E-01	2.37E-01
	996.32	10.30	7.16E-01		-4.02E-03	3.34E-01
	1004.76	17.90	4.27E-01		7.49E-02	1.99E-01
	1274.45	35.50	2.13E-01		-4.43E-02	9.80E-02
EU-155	86.50	30.90	1.99E-01	1.99E-01	-1.22E-03	9.77E-02
	105.30	20.70	2.24E-01		-2.17E-02	1.09E-01
EU-156	811.77	10.40	2.07E+00	2.07E+00	3.87E-01	9.62E-01
	1153.47	7.20	4.50E+00		1.78E+00	2.11E+00
	1230.71	8.90	3.47E+00		9.45E-01	1.62E+00
HO-166M	184.41	72.60	8.67E-02	8.67E-02	1.81E-01	4.23E-02
	280.45	29.60	1.53E-01		-1.11E-01	7.32E-02
	410.94	11.10	5.53E-01		-2.03E-02	2.65E-01
	711.69	54.10	1.22E-01		5.83E-02	5.74E-02
TM-171	66.72	0.14	4.51E+01	4.51E+01	3.69E-01	2.21E+01
HF-172	81.75	4.52	1.22E+00	4.10E-01	-1.17E+00	5.97E-01
	125.81	11.30	4.10E-01		-3.47E-01	1.99E-01
LU-172	181.53	20.60	4.22E+00	2.20E+00	-7.32E-01	2.04E+00
	810.06	16.63	7.23E+00		6.90E-01	3.38E+00
	912.12	15.25	1.68E+01		4.49E+01	8.10E+00
	1093.66	62.50	2.20E+00		-8.86E-01	1.02E+00
LU-173	100.72	5.24	8.85E-01	2.79E-01	5.48E-02	4.31E-01
	272.11	21.20	2.79E-01		3.10E-01	1.35E-01
HF-175	343.40	84.00	7.38E-02	7.38E-02	-3.20E-02	3.51E-02
LU-176	88.34	13.30	4.76E-01	4.69E-02	8.11E-01	2.34E-01
	201.83	86.00	5.68E-02		-1.42E-02	2.75E-02
	306.78	94.00	4.69E-02		-1.61E-03	2.23E-02
TA-182	67.75	41.20	1.75E-01	1.75E-01	8.96E-02	8.56E-02
	1121.30	34.90	3.89E-01		4.13E-01	1.85E-01
	1189.05	16.23	6.60E-01		3.07E-01	3.09E-01
	1221.41	26.98	3.84E-01		1.91E-02	1.79E-01
	1231.02	11.44	8.84E-01		2.41E-01	4.11E-01
IR-192	308.46	29.68	1.89E-01	1.55E-01	-1.21E-02	8.99E-02
	468.07	48.10	1.55E-01		-2.78E-03	7.39E-02
HG-203	279.19	77.30	9.85E-02	9.85E-02	5.71E-02	4.74E-02
BI-207	569.67	97.72	6.44E-02	6.44E-02	1.25E-02	3.06E-02
	1063.62	74.90	1.06E-01		-1.76E-02	4.92E-02
+ TL-208	583.14	*	30.22	1.29E-01	1.17E+00	1.14E-01
	860.37	*	4.48	1.29E+00	1.63E+00	5.96E-01
	2614.66	*	35.85	1.29E-01	1.16E+00	5.24E-02
BI-210M	262.00		1.03E-01	1.03E-01	-3.98E-02	4.95E-02
	300.00		2.44E-01		-4.81E-01	1.18E-01
PB-210	46.50	4.25	1.92E+00	1.92E+00	1.71E+00	9.38E-01
PB-211	404.84	2.90	1.69E+00	1.69E+00	1.46E-01	8.00E-01
	831.96	2.90	2.16E+00		-1.06E+00	1.00E+00
+ BI-212	727.17	*	11.80	8.57E-01	6.51E-01	4.12E-01
	1620.62	*	2.75	2.01E+00	1.07E+00	8.74E-01
+ PB-212	238.63	*	44.60	2.12E-01	1.54E+00	1.04E-01
	300.09	*	3.41	3.24E+00	2.20E+00	1.59E+00

Analysis Report for 1510064-08

CP2211S06-07

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
+	BI-214	609.31 *		46.30	1.86E-01	1.86E-01	1.29E+00	8.93E-02
		1120.29 *		15.10	6.83E-01		9.80E-01	3.23E-01
		1764.49 *		15.80	4.66E-01		1.75E+00	2.09E-01
		2204.22 *		4.98	7.28E-01		1.36E+00	2.79E-01
+	PB-214	295.21 *		19.19	5.64E-01	2.25E-01	1.45E+00	2.77E-01
		351.92 *		37.19	2.25E-01		1.58E+00	1.10E-01
	RN-219	401.80		6.50	7.36E-01	7.36E-01	-2.35E-02	3.49E-01
+	RA-223	323.87 *		3.88	3.77E+00	3.77E+00	6.32E-01	1.86E+00
+	RA-224	240.98 *		3.95	2.37E+00	2.37E+00	4.33E+00	1.16E+00
	RA-225	40.00		31.00	1.15E+00	1.15E+00	-7.68E-01	5.58E-01
+	RA-226	186.21 *		3.28	2.52E+00	2.52E+00	3.23E+00	1.24E+00
	TH-227	50.10		8.40	8.01E-01	5.19E-01	-1.71E+00	3.90E-01
		236.00		11.50	5.19E-01		-5.08E+00	2.52E-01
		256.20		6.30	7.57E-01		-1.23E-01	3.64E-01
+	AC-228	338.32 *		11.40	1.33E+00	3.89E-01	1.56E+00	6.58E-01
		911.07 *		27.70	3.89E-01		1.30E+00	1.86E-01
		969.11 *		16.60	6.66E-01		1.08E+00	3.18E-01
	TH-230	48.44		16.90	4.43E-01	4.43E-01	-1.91E-01	2.16E-01
		62.85		4.60	1.57E+00		3.02E+00	7.68E-01
		67.67		0.37	1.64E+01		8.42E+00	8.04E+00
	PA-231	283.67		1.60	2.93E+00	2.25E+00	8.09E-01	1.40E+00
		302.67		2.30	2.25E+00		8.88E-01	1.08E+00
	TH-231	25.64		14.70	3.71E+00	8.77E-01	2.05E+00	1.80E+00
		84.21		6.40	8.77E-01		-1.78E+00	4.29E-01
	PA-233	311.98		38.60	2.29E-01	2.29E-01	-5.13E-02	1.09E-01
	PA-234	131.20		20.40	2.35E-01	2.35E-01	2.47E-02	1.14E-01
		733.99		8.80	6.81E-01		-3.76E-01	3.18E-01
		946.00		12.00	5.82E-01		-2.82E-01	2.71E-01
	PA-234M	1001.03		0.92	8.62E+00	8.62E+00	3.55E+00	4.04E+00
+	TH-234	63.29 *		3.80	2.28E+00	2.28E+00	2.15E+00	1.12E+00
	U-235	143.76		10.50	4.47E-01	4.47E-01	-1.09E-01	2.17E-01
		163.35		4.70	9.49E-01		1.87E-01	4.60E-01
		205.31		4.70	1.05E+00		4.66E-01	5.10E-01
	NP-237	86.50		12.60	4.83E-01	4.83E-01	-2.97E-03	2.37E-01
	NP-239	106.10		22.70	8.21E+02	8.21E+02	-7.95E+01	4.00E+02
		228.18		10.70	1.83E+03		2.12E+02	8.83E+02
		277.60		14.10	1.42E+03		3.11E+02	6.84E+02
	AM-241	59.54		35.90	1.79E-01	1.79E-01	9.30E-04	8.75E-02
	AM-243	74.67		66.00	1.30E-01	1.30E-01	-1.73E-01	6.43E-02
	CM-243	209.75		3.29	1.68E+00	3.54E-01	2.60E+00	8.17E-01
		228.14		10.60	4.56E-01		5.29E-02	2.20E-01
		277.60		14.00	3.54E-01		7.75E-02	1.70E-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 1510064-08
CP2211S06-07

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: CP2211S06-07

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	62	85	68	77	75	86
25:	95	80	73	69	67	70	77	72
33:	74	66	78	80	80	66	60	81
41:	87	86	95	79	90	108	173	85
49:	87	95	89	119	114	127	110	107
57:	121	124	132	130	153	132	212	278
65:	160	132	149	148	150	157	136	153
73:	200	200	445	346	460	592	152	131
81:	141	125	106	163	160	122	188	258
89:	152	186	172	153	344	231	130	98
97:	109	106	100	109	94	75	86	77
105:	98	114	106	92	109	96	89	84
113:	95	91	97	102	73	92	68	77
121:	85	81	83	89	91	68	91	86
129:	114	119	88	88	94	78	78	92
137:	70	78	85	83	72	68	81	103
145:	75	88	99	73	80	69	83	77
153:	75	99	101	87	61	79	82	72
161:	60	60	59	81	64	65	64	68
169:	56	91	62	65	63	70	71	59
177:	78	62	68	62	62	70	70	60
185:	93	211	149	67	71	60	72	65
193:	59	64	58	73	73	67	52	56
201:	64	65	64	61	76	69	52	55
209:	86	104	68	68	44	63	49	63
217:	51	61	60	59	69	64	60	53
225:	47	50	55	53	45	56	44	56
233:	55	40	48	70	68	157	724	263
241:	100	183	138	52	36	32	33	28
249:	47	40	31	47	41	47	47	36
257:	35	51	42	51	45	39	34	29
265:	45	43	37	35	33	62	83	59
273:	43	40	46	38	36	64	39	32
281:	41	31	28	37	42	43	25	34
289:	28	32	32	32	25	42	169	224
297:	56	40	36	61	68	38	30	36
305:	30	30	27	32	23	31	21	25
313:	27	27	30	29	28	41	35	24
321:	32	28	14	27	40	23	31	60
329:	42	48	34	39	43	29	28	26
337:	29	103	134	51	42	28	23	37
345:	20	29	25	21	24	23	79	405
353:	281	48	27	34	22	31	17	23
361:	26	21	16	21	25	27	24	27

369: 23 30 30 23 21 19 22 30

Sample Title: CP2211S06-07

Channel	-----	-----	-----	-----	-----	-----	-----	-----
377:	21	22	27	26	28	25	25	32
385:	19	23	20	22	24	31	20	28
393:	27	18	24	23	34	23	20	14
401:	19	34	30	16	24	24	23	17
409:	27	53	30	14	18	25	22	24
417:	24	16	19	25	17	16	29	19
425:	16	27	25	20	29	17	16	28
433:	22	15	18	18	13	17	17	21
441:	17	26	18	28	20	24	17	13
449:	15	24	15	18	16	19	20	16
457:	22	20	20	21	23	28	55	47
465:	21	21	17	19	18	21	14	18
473:	18	15	21	11	22	14	16	14
481:	13	15	5	13	15	17	26	17
489:	17	14	19	24	16	15	16	9
497:	14	15	22	19	14	14	14	20
505:	19	18	14	19	31	38	94	76
513:	25	18	14	12	11	12	13	12
521:	20	12	5	18	16	17	17	13
529:	18	20	16	12	16	15	16	22
537:	12	20	26	14	16	15	9	15
545:	16	20	24	10	21	4	16	20
553:	14	13	13	19	12	10	15	9
561:	16	17	24	10	12	22	17	14
569:	10	19	19	17	20	15	12	15
577:	19	13	16	13	20	23	120	158
585:	38	7	12	13	14	12	11	13
593:	14	19	14	11	12	12	18	21
601:	18	18	12	13	10	15	14	29
609:	140	284	66	14	11	12	10	15
617:	15	14	12	12	6	5	11	5
625:	16	17	10	13	12	12	15	10
633:	11	12	5	13	11	7	20	15
641:	12	11	4	9	17	11	11	6
649:	6	11	11	16	9	16	15	10
657:	11	13	12	13	9	7	9	13
665:	15	22	8	15	5	9	14	9
673:	11	12	11	9	12	9	7	13
681:	6	13	15	10	11	13	12	22
689:	5	14	9	18	18	13	16	13
697:	12	23	9	10	13	10	16	10
705:	13	17	12	9	21	17	11	7
713:	14	10	9	8	10	10	10	21
721:	8	13	17	17	10	9	33	51
729:	23	14	12	12	12	8	6	12
737:	7	13	16	11	3	16	10	15
745:	10	9	10	11	16	10	11	6
753:	15	7	14	10	7	10	12	14
761:	10	10	15	13	10	10	16	23
769:	41	13	6	16	11	13	13	11
777:	11	5	9	9	14	11	10	8
785:	14	20	14	14	9	5	15	13
793:	6	20	29	16	9	7	9	10

801: 11 6 18 10 17 14 17 12

Sample Title: CP2211S06-07

Channel	1	2	3	4	5	6	7	8
809:	9	4	8	5	14	11	6	10
817:	6	4	6	13	14	10	7	7
825:	8	7	10	5	6	10	10	10
833:	9	6	10	13	16	13	7	21
841:	14	13	10	11	13	4	6	6
849:	5	12	8	11	7	6	8	7
857:	10	5	7	16	26	25	4	7
865:	9	9	10	8	11	9	10	5
873:	8	4	8	5	10	8	9	7
881:	5	9	6	5	9	8	4	7
889:	11	7	8	11	9	5	19	9
897:	14	4	9	3	6	5	8	6
905:	15	8	8	14	11	17	84	108
913:	41	13	2	12	3	6	3	10
921:	7	4	4	8	5	9	6	14
929:	10	9	11	6	9	15	17	8
937:	10	14	9	8	7	12	5	9
945:	8	8	12	9	11	13	14	7
953:	7	7	9	8	10	12	11	9
961:	4	10	7	12	20	14	16	14
969:	58	59	9	8	5	3	8	10
977:	12	11	7	7	7	3	6	4
985:	7	6	6	7	15	2	9	5
993:	6	11	10	10	10	12	4	8
1001:	13	19	12	6	6	7	8	9
1009:	4	11	9	4	7	6	5	7
1017:	3	5	5	8	1	10	4	8
1025:	7	7	10	5	8	5	4	9
1033:	5	6	6	5	7	5	7	5
1041:	15	11	13	5	7	8	9	6
1049:	10	5	9	8	5	8	5	7
1057:	10	3	12	10	13	5	15	11
1065:	6	6	10	7	13	4	15	11
1073:	4	9	7	10	5	9	13	5
1081:	8	2	9	8	12	6	6	11
1089:	9	11	7	6	7	11	4	10
1097:	10	10	10	6	7	9	7	5
1105:	11	5	6	5	11	12	11	9
1113:	7	10	11	6	12	6	8	31
1121:	58	9	13	8	9	14	8	7
1129:	6	7	9	9	8	8	6	6
1137:	3	7	9	6	11	12	8	11
1145:	6	9	10	5	13	9	5	9
1153:	11	8	14	19	10	5	9	5
1161:	6	5	4	7	6	5	7	13
1169:	9	8	11	7	12	3	12	10
1177:	3	10	9	5	7	5	8	5
1185:	3	9	9	14	16	12	7	6
1193:	15	5	9	9	8	10	4	4
1201:	13	6	7	11	7	4	13	5
1209:	7	7	8	4	8	8	6	8
1217:	10	15	6	5	8	8	8	15
1225:	9	9	6	12	9	8	9	5

1233: 13 5 6 8 8 13 25 24

Sample Title: CP2211S06-07

Channel	1	2	3	4	5	6	7	8
1241:	3	8	6	7	12	11	10	6
1249:	4	9	8	7	6	12	4	8
1257:	6	8	8	6	9	7	6	5
1265:	3	7	4	4	7	7	5	6
1273:	11	3	6	5	8	8	7	4
1281:	6	7	5	4	7	4	7	4
1289:	8	8	9	7	4	4	7	3
1297:	6	4	5	0	5	5	6	2
1305:	9	7	4	3	4	3	4	6
1313:	2	4	1	4	9	4	5	3
1321:	4	3	4	3	5	6	6	6
1329:	5	7	3	10	6	1	6	7
1337:	2	2	4	5	1	9	5	7
1345:	4	3	4	2	3	8	2	6
1353:	3	4	6	0	2	6	3	4
1361:	5	3	1	3	5	6	6	3
1369:	4	4	4	4	5	4	5	3
1377:	7	14	14	6	2	1	2	2
1385:	5	2	1	3	4	2	0	3
1393:	5	2	2	5	1	3	4	4
1401:	3	4	5	5	1	3	5	7
1409:	12	2	4	4	1	4	4	3
1417:	2	3	2	4	0	3	4	3
1425:	3	5	4	1	5	3	5	3
1433:	4	5	5	3	5	4	2	2
1441:	2	1	4	3	3	3	4	4
1449:	1	6	8	2	2	6	2	3
1457:	6	3	18	118	360	290	65	8
1465:	5	1	4	1	4	1	0	3
1473:	4	0	3	3	2	4	2	2
1481:	2	1	2	3	2	2	1	1
1489:	3	1	0	2	0	2	2	1
1497:	3	3	2	0	6	3	2	3
1505:	5	2	1	6	8	8	4	4
1513:	4	1	3	3	0	3	1	0
1521:	2	0	0	1	2	3	3	0
1529:	0	0	1	4	0	2	2	6
1537:	0	3	4	1	5	2	3	3
1545:	4	4	3	4	2	0	3	1
1553:	5	0	2	3	1	0	2	3
1561:	1	4	1	1	3	2	0	1
1569:	5	0	1	0	2	1	4	4
1577:	2	3	1	4	4	4	2	3
1585:	1	0	3	5	12	2	3	6
1593:	4	5	2	2	3	2	1	4
1601:	2	5	2	1	2	4	3	1
1609:	0	0	0	1	1	1	1	3
1617:	1	0	3	3	3	8	1	2
1625:	1	0	3	0	1	2	2	3
1633:	2	1	2	1	3	1	1	1
1641:	0	1	1	2	2	3	1	2
1649:	1	2	0	0	0	2	1	1
1657:	4	3	4	4	1	4	1	4

1665: 1 1 2 0 2 1 0 0

Sample Title: CP2211S06-07

Channel	1	2	3	4	5	6	7	8	9
1673:	2	0	1	1	3	1	2	2	
1681:	0	2	3	4	0	0	1	2	
1689:	1	0	0	2	1	3	0	0	
1697:	0	3	1	2	0	2	2	2	
1705:	1	0	0	1	1	0	1	1	
1713:	0	1	0	0	3	1	2	2	
1721:	0	4	1	2	1	3	1	4	
1729:	7	6	4	1	1	2	2	3	
1737:	4	1	1	2	2	0	0	0	
1745:	0	2	0	1	1	1	3	2	
1753:	2	2	0	3	1	1	2	1	
1761:	1	2	7	18	45	26	8	3	
1769:	1	0	2	1	2	1	0	1	
1777:	0	2	2	1	1	3	1	1	
1785:	1	1	3	1	0	2	0	3	
1793:	2	3	0	2	2	1	1	1	
1801:	1	1	1	3	2	3	0	1	
1809:	0	2	1	1	0	3	2	2	
1817:	2	0	2	0	0	2	3	1	
1825:	1	0	0	0	2	1	0	2	
1833:	0	0	3	0	2	1	1	4	
1841:	1	1	1	0	0	2	3	5	
1849:	4	0	1	1	0	1	2	0	
1857:	1	1	0	2	0	2	1	1	
1865:	1	2	1	0	3	2	0	0	
1873:	2	1	1	1	0	0	1	2	
1881:	1	1	0	1	0	1	3	1	
1889:	1	3	2	1	3	1	2	0	
1897:	3	1	1	4	0	1	1	1	
1905:	0	1	3	0	0	2	4	1	
1913:	3	1	1	1	1	1	0	1	
1921:	1	0	1	0	1	1	1	0	
1929:	1	2	1	1	1	1	1	2	
1937:	2	2	0	2	1	2	3	3	
1945:	0	1	0	0	0	2	1	1	
1953:	0	2	1	0	2	2	2	1	
1961:	2	0	4	3	1	0	1	2	
1969:	0	2	0	0	0	2	0	1	
1977:	2	0	0	0	1	2	1	0	
1985:	2	1	0	1	1	0	0	0	
1993:	1	2	0	0	0	3	0	2	
2001:	0	2	1	1	0	0	3	0	
2009:	4	2	1	1	0	1	0	1	
2017:	0	1	1	1	1	1	3	1	
2025:	0	1	0	2	0	0	0	2	
2033:	0	0	0	3	0	2	0	0	
2041:	0	1	1	1	1	0	2	1	
2049:	0	1	1	2	1	2	2	1	
2057:	2	0	0	1	2	1	1	1	
2065:	0	2	0	1	0	0	0	1	
2073:	0	1	0	1	1	1	0	2	
2081:	3	1	2	0	2	0	2	0	
2089:	1	2	2	2	1	1	1	0	

2097: 0 2 1 1 4 4 8 2

Sample Title: CP2211S06-07

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

2529: 1 0 1 0 0 0 0 0 1

Sample Title: CP2211S06-07

Channel	1	2	3	4	5	6	7	8	9
2537:	0	0	0	0	0	1	0	0	0
2545:	0	0	1	1	0	0	1	0	0
2553:	1	0	0	2	0	0	1	0	0
2561:	1	1	0	0	0	1	0	0	0
2569:	1	1	0	0	0	0	0	0	1
2577:	0	0	0	0	0	4	1	0	0
2585:	0	0	0	0	0	1	1	0	0
2593:	0	1	1	0	2	0	0	0	0
2601:	0	1	1	1	0	0	0	0	0
2609:	0	2	1	4	9	30	54	30	0
2617:	4	0	1	0	0	0	0	1	0
2625:	0	0	0	0	0	0	1	0	0
2633:	1	0	0	2	0	0	1	0	0
2641:	0	0	0	0	0	0	0	1	0
2649:	0	2	0	0	0	1	1	0	0
2657:	1	1	0	0	0	0	0	0	0
2665:	0	1	0	0	0	2	0	0	0
2673:	0	0	0	1	0	0	0	1	0
2681:	0	1	1	0	0	0	0	2	0
2689:	0	0	1	2	0	0	1	0	0
2697:	0	1	0	0	0	0	0	0	0
2705:	1	0	1	1	0	2	1	1	0
2713:	0	0	1	1	0	0	0	0	0
2721:	0	0	0	0	0	0	0	2	0
2729:	0	0	0	0	0	0	0	1	0
2737:	0	0	0	1	0	0	0	0	0
2745:	0	0	0	0	0	2	0	0	0
2753:	2	0	0	0	1	1	0	1	0
2761:	0	1	0	0	0	0	1	0	0
2769:	0	1	0	2	0	0	1	1	0
2777:	0	0	0	0	0	3	0	0	0
2785:	0	0	1	0	0	0	0	1	0
2793:	0	0	1	0	0	1	1	0	0
2801:	0	0	0	1	0	1	0	0	0
2809:	0	0	1	0	0	0	0	0	0
2817:	0	1	0	1	0	0	0	1	0
2825:	0	0	0	1	0	0	0	0	0
2833:	1	1	0	0	0	0	0	1	0
2841:	0	0	0	0	0	0	0	0	0
2849:	1	0	1	0	0	0	0	0	0
2857:	0	0	0	1	0	0	0	0	0
2865:	0	1	0	1	1	1	0	0	0
2873:	0	0	0	1	1	0	0	0	0
2881:	0	0	0	0	1	0	1	0	0
2889:	0	1	0	1	0	0	0	0	0
2897:	1	0	0	0	0	0	0	0	0
2905:	0	0	0	1	0	1	0	0	0
2913:	0	0	0	0	0	1	0	0	0
2921:	0	0	0	0	0	1	0	0	0
2929:	1	0	0	0	0	2	0	0	0
2937:	0	0	0	1	0	0	2	0	0
2945:	0	0	1	0	0	0	0	1	0
2953:	1	0	1	0	1	1	0	0	0

2961: 0 1 0 0 0 0 0 0 1

Sample Title: CP2211S06-07

Channel	1	2	3	4	5	6	7	8
2969:	0	0	0	0	0	1	0	0
2977:	1	0	0	0	0	1	0	0
2985:	0	0	0	0	0	1	0	0
2993:	0	0	1	0	0	0	0	0
3001:	0	1	0	0	0	0	0	0
3009:	1	1	0	0	1	0	1	1
3017:	0	0	0	0	0	0	0	0
3025:	1	0	1	0	0	0	0	0
3033:	0	0	0	0	0	1	1	0
3041:	0	1	0	0	1	0	0	0
3049:	0	0	1	0	0	0	0	0
3057:	1	1	0	0	0	1	0	0
3065:	0	0	1	0	0	0	0	0
3073:	0	0	0	0	0	0	0	1
3081:	0	1	0	0	0	0	0	2
3089:	1	0	0	0	0	0	0	1
3097:	0	0	0	0	0	0	0	1
3105:	0	0	0	0	0	0	0	0
3113:	1	0	1	0	0	0	0	0
3121:	0	1	0	0	0	0	1	0
3129:	0	0	0	2	0	0	0	1
3137:	0	0	1	1	0	0	1	0
3145:	0	2	0	0	0	0	1	0
3153:	1	0	0	0	0	1	0	0
3161:	1	0	0	0	0	0	0	0
3169:	1	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	1	1	0	0
3201:	0	0	0	1	0	0	0	1
3209:	0	0	0	0	0	0	0	0
3217:	0	0	1	0	0	0	0	0
3225:	0	0	0	1	0	0	0	0
3233:	0	0	0	0	0	0	1	0
3241:	1	0	0	0	0	1	0	0
3249:	0	0	0	2	0	1	0	0
3257:	0	0	0	0	0	0	0	0
3265:	0	0	0	0	0	0	1	0
3273:	0	0	0	0	0	0	2	0
3281:	0	1	0	0	0	0	0	0
3289:	1	0	0	0	1	1	0	0
3297:	1	0	0	0	1	0	0	0
3305:	0	0	0	0	0	0	1	2
3313:	0	0	0	0	1	0	0	0
3321:	0	0	0	0	0	0	0	0
3329:	0	0	0	0	0	0	0	0
3337:	0	0	0	2	0	0	0	0
3345:	1	0	0	0	0	0	0	0
3353:	0	0	0	0	0	0	0	1
3361:	0	0	1	1	0	0	0	0
3369:	0	0	0	0	0	0	0	0
3377:	0	0	0	1	0	0	0	0
3385:	0	0	0	0	0	0	0	0

3393: 0 0 0 0 0 0 0 0 0

Sample Title: CP2211S06-07

Channel	1	0	0	0	0	0	0	0
3401:	1	0	0	0	0	0	0	0
3409:	0	0	0	0	0	0	0	0
3417:	0	0	0	0	1	0	0	0
3425:	0	0	0	0	0	0	0	0
3433:	0	0	0	0	0	1	0	0
3441:	0	0	0	0	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	1	1	0
3473:	0	0	1	0	0	2	0	0
3481:	0	0	0	1	0	0	0	0
3489:	2	1	0	1	0	1	0	0
3497:	0	0	0	0	0	0	0	0
3505:	0	0	0	0	0	0	0	0
3513:	1	0	0	0	0	1	0	0
3521:	0	0	0	0	0	0	0	0
3529:	0	0	0	0	0	0	0	1
3537:	1	0	0	0	0	1	0	0
3545:	0	0	0	1	0	1	0	0
3553:	0	0	0	1	0	0	0	0
3561:	0	0	0	0	0	0	1	1
3569:	0	0	0	0	0	1	0	0
3577:	1	0	0	0	1	0	0	0
3585:	0	0	0	0	0	0	0	0
3593:	0	0	0	1	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	1	0	0	0
3625:	1	1	0	1	0	0	1	0
3633:	0	0	0	0	0	0	1	0
3641:	0	0	0	0	0	1	1	0
3649:	0	0	0	0	0	0	0	0
3657:	0	0	0	0	2	0	0	0
3665:	1	0	0	0	0	0	0	0
3673:	1	0	0	0	0	1	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	0	0	0
3721:	1	1	0	0	0	0	0	1
3729:	0	0	0	0	0	0	0	0
3737:	0	1	1	0	0	0	0	0
3745:	0	0	0	0	0	0	0	0
3753:	0	0	0	0	0	0	1	1
3761:	0	0	1	0	0	1	0	0
3769:	0	0	1	0	0	0	0	0
3777:	0	0	0	0	1	0	0	0
3785:	1	0	0	0	1	0	0	0
3793:	0	0	0	0	0	0	0	0
3801:	0	0	0	0	0	0	1	1
3809:	1	0	0	0	0	0	0	0
3817:	0	1	0	0	0	0	0	1

3825: 0 0 0 0 0 0 0 0 1

Sample Title: CP2211S06-07

Channel	-----	-----	-----	-----	-----	-----	-----	-----
3833:	0	0	0	1	0	1	1	0
3841:	0	0	0	0	0	0	0	0
3849:	1	0	0	0	0	1	0	0
3857:	0	0	1	0	0	1	0	0
3865:	0	0	0	0	0	0	1	0
3873:	0	0	2	0	0	0	0	0
3881:	0	0	0	0	0	0	1	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	0	0	0
3913:	0	0	0	0	0	0	0	1
3921:	0	0	0	0	0	0	0	0
3929:	1	1	0	0	0	0	1	0
3937:	0	0	0	0	0	0	0	0
3945:	0	1	0	0	0	0	0	0
3953:	0	0	0	0	0	1	1	0
3961:	0	2	0	0	0	0	0	0
3969:	0	0	0	1	1	0	0	1
3977:	1	0	0	0	0	0	0	0
3985:	0	0	1	0	0	0	0	0
3993:	0	1	0	0	0	0	0	0
4001:	3	0	0	0	0	0	0	0
4009:	0	0	1	0	0	0	1	0
4017:	0	0	0	0	0	0	0	0
4025:	0	0	0	1	0	0	0	0
4033:	1	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	0	1
4065:	1	1	0	0	1	0	0	0
4073:	0	0	0	0	0	0	0	0
4081:	0	0	0	0	0	1	0	0
4089:	0	0	0	1	0	0	0	0

KCB
11/3/15Analysis Report for 1510064-09
CP2211S11-12

GAMMA SPECTRUM ANALYSIS

Sample Identification : 1510064-09
Sample Description : CP2211S11-12
Sample Type : SOIL

Sample Size : 5.939E+02 grams
Facility : Countroom

Sample Taken On : 10/6/2015 7:36:09AM
Acquisition Started : 11/3/2015 12:29:56PM

Procedure : GAS-1402 pCi
Operator : Administrator
Detector Name : GE2
Geometry : GAS-1402
Live Time : 3600.0 seconds
Real Time : 3601.3 seconds

Dead Time : 0.04 %

Peak Locate Threshold : 2.50
Peak Locate Range (in channels) : 1 - 4096
Peak Area Range (in channels) : 5 - 4096
Identification Energy Tolerance : 1.000 keV

Energy Calibration Used Done On : 11/2/2014
Efficiency Calibration Used Done On : 10/25/2014
Efficiency Calibration Description :

Sample Number : 29030

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
11/3/15

Analysis Report for 1510064-09
CP2211S11-12

PEAK LOCATE REPORT

Peak Locate Performed on : 11/3/2015 1:30:13PM
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	43.95	44.06	0.0000	0.00
2	76.45	76.54	0.0000	0.00
3	87.45	87.53	0.0000	0.00
4	92.49	92.57	0.0000	0.00
5	143.89	143.94	0.0000	0.00
6	185.90	185.93	0.0000	0.00
7	188.86	188.88	0.0000	0.00
8	208.94	208.95	0.0000	0.00
9	238.84	238.84	0.0000	0.00
10	242.06	242.06	0.0000	0.00
11	270.34	270.32	0.0000	0.00
12	277.95	277.92	0.0000	0.00
13	295.23	295.19	0.0000	0.00
14	300.11	300.07	0.0000	0.00
15	338.63	338.58	0.0000	0.00
16	351.97	351.91	0.0000	0.00
17	462.80	462.68	0.0000	0.00
18	510.76	510.62	0.0000	0.00
19	583.20	583.02	0.0000	0.00
20	609.38	609.19	0.0000	0.00
21	618.06	617.87	0.0000	0.00
22	669.64	669.42	0.0000	0.00
23	701.41	701.17	0.0000	0.00
24	727.50	727.25	0.0000	0.00
25	768.28	768.02	0.0000	0.00
26	781.61	781.33	0.0000	0.00
27	794.96	794.68	0.0000	0.00
28	835.03	834.73	0.0000	0.00
29	839.91	839.61	0.0000	0.00
30	904.13	903.81	0.0000	0.00
31	911.24	910.92	0.0000	0.00
32	934.95	934.62	0.0000	0.00
33	964.31	963.97	0.0000	0.00
34	969.15	968.80	0.0000	0.00
35	1000.83	1000.47	0.0000	0.00
36	1077.98	1077.59	0.0000	0.00
37	1084.17	1083.77	0.0000	0.00
38	1096.24	1095.84	0.0000	0.00
39	1120.46	1120.05	0.0000	0.00
40	1174.88	1174.45	0.0000	0.00
41	1300.37	1299.90	0.0000	0.00
42	1378.45	1377.96	0.0000	0.00

Analysis Report for 1510064-09
CP2211S11-12

<i>Peak No.</i>	<i>Energy (keV)</i>	<i>Centroid Channel</i>	<i>Centroid Uncertainty</i>	<i>Peak Significance</i>
43	1407.88	1407.38	0.0000	0.00
44	1460.83	1460.31	0.0000	0.00
45	1496.30	1495.77	0.0000	0.00
46	1509.13	1508.59	0.0000	0.00
47	1625.34	1624.77	0.0000	0.00
48	1724.95	1724.36	0.0000	0.00
49	1729.11	1728.52	0.0000	0.00
50	1764.44	1763.84	0.0000	0.00
51	1846.25	1845.63	0.0000	0.00
52	1977.69	1977.03	0.0000	0.00
53	1991.38	1990.72	0.0000	0.00
54	2071.68	2071.01	0.0000	0.00
55	2102.81	2102.14	0.0000	0.00
56	2138.05	2137.36	0.0000	0.00
57	2152.89	2152.20	0.0000	0.00
58	2177.86	2177.17	0.0000	0.00
59	2203.71	2203.02	0.0000	0.00
60	2299.21	2298.50	0.0000	0.00
61	2614.22	2613.48	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1510064-09

CP2211S11-12

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/3/2015 1:30:13PM

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	43.95	42 -	49	44.06	6.97E+01	54.93	7.82E+02	1.77
	2	76.45	72 -	82	76.54	1.25E+03	156.12	2.55E+03	3.69
	3	87.45	86 -	89	87.53	8.98E+01	68.32	1.09E+03	1.54
	4	92.49	90 -	97	92.57	2.94E+02	113.10	1.87E+03	1.58
	5	143.89	142 -	147	143.94	6.30E+01	65.13	7.98E+02	2.11
M	6	185.90	182 -	191	185.93	1.65E+02	52.23	4.72E+02	1.32
m	7	188.86	182 -	191	188.88	4.31E+01	47.79	4.59E+02	1.33
	8	208.94	206 -	212	208.95	1.07E+02	65.84	7.10E+02	1.84
M	9	238.84	235 -	247	238.84	8.54E+02	72.46	3.85E+02	1.71
m	10	242.06	235 -	247	242.06	2.04E+02	70.79	3.37E+02	1.71
	11	270.34	267 -	274	270.32	8.67E+01	58.75	5.13E+02	1.47
	12	277.95	275 -	281	277.92	4.89E+01	51.26	4.44E+02	2.12
	13	295.23	291 -	297	295.19	3.52E+02	60.51	4.11E+02	1.54
	14	300.11	299 -	303	300.07	5.76E+01	40.78	3.07E+02	1.27
	15	338.63	334 -	343	338.58	1.67E+02	65.89	5.25E+02	1.63
	16	351.97	348 -	355	351.91	6.35E+02	68.38	3.57E+02	1.36
	17	462.80	460 -	465	462.68	7.66E+01	31.59	1.39E+02	2.00
	18	510.76	507 -	515	510.62	1.53E+02	46.23	2.37E+02	2.57
	19	583.20	579 -	588	583.02	3.13E+02	54.72	2.46E+02	1.85
	20	609.38	604 -	613	609.19	4.44E+02	59.97	2.60E+02	1.77
	21	618.06	616 -	620	617.87	1.88E+01	21.03	8.04E+01	2.95
	22	669.64	667 -	673	669.42	2.69E+01	27.65	1.20E+02	2.15
	23	701.41	698 -	705	701.17	3.00E+01	32.12	1.52E+02	4.26
	24	727.50	723 -	729	727.25	5.62E+01	31.53	1.40E+02	1.98
	25	768.28	765 -	770	768.02	3.70E+01	29.03	1.36E+02	2.15
	26	781.61	778 -	784	781.33	2.50E+01	26.38	1.08E+02	2.99
	27	794.96	791 -	799	794.68	4.30E+01	32.49	1.28E+02	2.00
	28	835.03	832 -	837	834.73	3.26E+01	22.29	7.08E+01	2.92
	29	839.91	838 -	842	839.61	2.11E+01	19.66	6.97E+01	2.13
M	30	904.13	900 -	915	903.81	2.36E+01	19.82	5.33E+01	2.14
m	31	911.24	900 -	915	910.92	2.17E+02	34.07	5.03E+01	1.95
	32	934.95	930 -	939	934.62	5.24E+01	29.51	9.32E+01	2.19
M	33	964.31	960 -	971	963.97	4.22E+01	24.68	6.63E+01	2.19
m	34	969.15	960 -	971	968.80	1.27E+02	28.57	6.24E+01	1.97
	35	1000.83	998 -	1003	1000.47	1.79E+01	20.37	6.83E+01	3.08
	36	1077.98	1073 -	1080	1077.59	2.25E+01	24.08	7.70E+01	3.82
	37	1084.17	1082 -	1086	1083.77	1.13E+01	15.23	4.34E+01	2.52
	38	1096.24	1089 -	1100	1095.84	3.19E+01	35.61	1.38E+02	5.69
	39	1120.46	1116 -	1124	1120.05	7.85E+01	33.21	1.21E+02	2.23
	40	1174.88	1170 -	1180	1174.45	3.84E+01	30.64	1.05E+02	3.44

Analysis Report for 1510064-09

CP2211S11-12

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
41	1300.37	1298 - 1303		1299.90	1.50E+01	16.55	4.39E+01	1.67
42	1378.45	1372 - 1384		1377.96	3.07E+01	32.53	1.09E+02	2.34
43	1407.88	1405 - 1410		1407.38	1.88E+01	12.21	1.43E+01	3.23
44	1460.83	1454 - 1464		1460.31	7.86E+02	59.69	5.80E+01	2.25
45	1496.30	1492 - 1499		1495.77	1.00E+01	11.66	1.60E+01	3.33
46	1509.13	1505 - 1512		1508.59	2.28E+01	12.81	1.23E+01	3.13
47	1625.34	1614 - 1632		1624.77	4.88E+01	17.50	1.04E+01	12.77
M 48	1724.95	1723 - 1734		1724.36	6.38E+00	4.24	2.00E+00	3.34
m 49	1729.11	1723 - 1734		1728.52	2.69E+01	12.35	9.00E+00	2.98
50	1764.44	1758 - 1767		1763.84	8.02E+01	20.66	1.56E+01	1.96
51	1846.25	1841 - 1849		1845.63	1.01E+01	11.17	1.18E+01	1.10
52	1977.69	1973 - 1980		1977.03	8.15E+00	7.48	3.70E+00	1.82
53	1991.38	1987 - 1994		1990.72	8.00E+00	8.94	8.00E+00	1.28
54	2071.68	2066 - 2075		2071.01	1.16E+01	9.00	4.71E+00	1.59
55	2102.81	2097 - 2107		2102.14	3.25E+01	13.05	5.00E+00	6.16
56	2138.05	2134 - 2140		2137.36	1.10E+01	6.63	0.00E+00	3.92
57	2152.89	2149 - 2154		2152.20	5.25E+00	7.07	5.50E+00	1.84
58	2177.86	2171 - 2181		2177.17	1.15E+01	11.34	1.09E+01	2.35
59	2203.71	2197 - 2208		2203.02	2.90E+01	14.56	1.20E+01	4.82
60	2299.21	2294 - 2302		2298.50	8.00E+00	5.66	0.00E+00	1.47
61	2614.22	2609 - 2618		2613.48	1.06E+02	22.14	8.84E+00	2.50

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

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/3/2015 1:30:13PM

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

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
M 1	43.95	42 -	49	6.97E+01	54.93	7.82E+02	4.60E+01
2	76.45	72 -	82	1.25E+03	156.12	2.55E+03	1.14E+02
3	87.45	86 -	89	8.98E+01	68.32	1.09E+03	5.40E+01
4	92.49	90 -	97	2.94E+02	113.10	1.87E+03	8.86E+01
5	143.89	142 -	147	6.30E+01	65.13	7.98E+02	5.19E+01
M 6	185.90	182 -	191	1.65E+02	52.23	4.72E+02	3.57E+01
m 7	188.86	182 -	191	4.31E+01	47.79	4.59E+02	3.52E+01

: 00560

Analysis Report for 1510064-09

CP2211S11-12

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	8	208.94	206 -	212	1.07E+02	65.84	7.10E+02	5.14E+01
M	9	238.84	235 -	247	8.54E+02	72.46	3.85E+02	3.23E+01
m	10	242.06	235 -	247	2.04E+02	70.79	3.37E+02	3.02E+01
	11	270.34	267 -	274	8.67E+01	58.75	5.13E+02	4.58E+01
	12	277.95	275 -	281	4.89E+01	51.26	4.44E+02	4.05E+01
	13	295.23	291 -	297	3.52E+02	60.51	4.11E+02	3.90E+01
	14	300.11	299 -	303	5.76E+01	40.78	3.07E+02	3.11E+01
	15	338.63	334 -	343	1.67E+02	65.89	5.25E+02	4.98E+01
	16	351.97	348 -	355	6.35E+02	68.38	3.57E+02	3.80E+01
	17	462.80	460 -	465	7.66E+01	31.59	1.39E+02	2.16E+01
	18	510.76	507 -	515	1.53E+02	46.23	2.37E+02	3.21E+01
	19	583.20	579 -	588	3.13E+02	54.72	2.46E+02	3.43E+01
	20	609.38	604 -	613	4.44E+02	59.97	2.60E+02	3.51E+01
	21	618.06	616 -	620	1.88E+01	21.03	8.04E+01	1.58E+01
	22	669.64	667 -	673	2.69E+01	27.65	1.20E+02	2.11E+01
	23	701.41	698 -	705	3.00E+01	32.12	1.52E+02	2.48E+01
	24	727.50	723 -	729	5.62E+01	31.53	1.40E+02	2.28E+01
	25	768.28	765 -	770	3.70E+01	29.03	1.36E+02	2.17E+01
	26	781.61	778 -	784	2.50E+01	26.38	1.08E+02	2.01E+01
	27	794.96	791 -	799	4.30E+01	32.49	1.28E+02	2.44E+01
	28	835.03	832 -	837	3.26E+01	22.29	7.08E+01	1.57E+01
	29	839.91	838 -	842	2.11E+01	19.66	6.97E+01	1.43E+01
M	30	904.13	900 -	915	2.36E+01	19.82	5.33E+01	1.20E+01
m	31	911.24	900 -	915	2.17E+02	34.07	5.03E+01	1.17E+01
	32	934.95	930 -	939	5.24E+01	29.51	9.32E+01	2.11E+01
M	33	964.31	960 -	971	4.22E+01	24.68	6.63E+01	1.34E+01
m	34	969.15	960 -	971	1.27E+02	28.57	6.24E+01	1.30E+01
	35	1000.83	998 -	1003	1.79E+01	20.37	6.83E+01	1.52E+01
	36	1077.98	1073 -	1080	2.25E+01	24.08	7.70E+01	1.82E+01
	37	1084.17	1082 -	1086	1.13E+01	15.23	4.34E+01	1.12E+01
	38	1096.24	1089 -	1100	3.19E+01	35.61	1.38E+02	2.78E+01
	39	1120.46	1116 -	1124	7.85E+01	33.21	1.21E+02	2.31E+01
	40	1174.88	1170 -	1180	3.84E+01	30.64	1.05E+02	2.30E+01
	41	1300.37	1298 -	1303	1.50E+01	16.55	4.39E+01	1.20E+01
	42	1378.45	1372 -	1384	3.07E+01	32.53	1.09E+02	2.51E+01
	43	1407.88	1405 -	1410	1.88E+01	12.21	1.43E+01	7.06E+00
	44	1460.83	1454 -	1464	7.86E+02	59.69	5.80E+01	1.68E+01
	45	1496.30	1492 -	1499	1.00E+01	11.66	1.60E+01	8.05E+00
	46	1509.13	1505 -	1512	2.28E+01	12.81	1.23E+01	7.01E+00
	47	1625.34	1614 -	1632	4.88E+01	17.50	1.04E+01	8.66E+00
M	48	1724.95	1723 -	1734	6.38E+00	4.24	2.00E+00	2.33E+00
m	49	1729.11	1723 -	1734	2.69E+01	12.35	9.00E+00	4.93E+00
	50	1764.44	1758 -	1767	8.02E+01	20.66	1.56E+01	8.47E+00
	51	1846.25	1841 -	1849	1.01E+01	11.17	1.18E+01	7.55E+00
	52	1977.69	1973 -	1980	8.15E+00	7.48	3.70E+00	3.98E+00
	53	1991.38	1987 -	1994	8.00E+00	8.94	8.00E+00	5.70E+00
	54	2071.68	2066 -	2075	1.16E+01	9.00	4.71E+00	4.82E+00
	55	2102.81	2097 -	2107	3.25E+01	13.05	5.00E+00	5.22E+00
	56	2138.05	2134 -	2140	1.10E+01	6.63	0.00E+00	0.00E+00
	57	2152.89	2149 -	2154	5.25E+00	7.07	5.50E+00	4.43E+00
	58	2177.86	2171 -	2181	1.15E+01	11.34	1.09E+01	7.46E+00

: 00561

Analysis Report for 1510064-09

CP2211S11-12

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
59	2203.71	2197 -	2208	2.90E+01	14.56	1.20E+01	8.05E+00
60	2299.21	2294 -	2302	8.00E+00	5.66	0.00E+00	0.00E+00
61	2614.22	2609 -	2618	1.06E+02	22.14	8.84E+00	6.76E+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 : 11/3/2015 1:30:13PM

Peak Analysis From Channel : 1

Peak Analysis To Channel : 4096

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

Peak Match Tolerance : 1.000 keV

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
M 1	43.95	42 -	49	44.06	6.97E+01	54.93	7.82E+02	.....
2	76.45	72 -	82	76.54	1.25E+03	156.12	2.55E+03	.....
3	87.45	86 -	89	87.53	8.98E+01	68.32	1.09E+03	SN-126 CD-109 LU-176 NP-237 EU-155
4	92.49	90 -	97	92.57	2.94E+02	113.10	1.87E+03	GA-67
5	143.89	142 -	147	143.94	6.30E+01	65.13	7.98E+02	U-235
M 6	185.90	182 -	191	185.93	1.65E+02	52.23	4.72E+02	RA-226
m 7	188.86	182 -	191	188.88	4.31E+01	47.79	4.59E+02	.....
8	208.94	206 -	212	208.95	1.07E+02	65.84	7.10E+02	GA-67 CM-243
M 9	238.84	235 -	247	238.84	8.54E+02	72.46	3.85E+02	PB-212
m 10	242.06	235 -	247	242.06	2.04E+02	70.79	3.37E+02	.....
11	270.34	267 -	274	270.32	8.67E+01	58.75	5.13E+02	.....
12	277.95	275 -	281	277.92	4.89E+01	51.26	4.44E+02	CM-243 NP-239
13	295.23	291 -	297	295.19	3.52E+02	60.51	4.11E+02	PB-214
14	300.11	299 -	303	300.07	5.76E+01	40.78	3.07E+02	PB-212 BI-210M GA-67
15	338.63	334 -	343	338.58	1.67E+02	65.89	5.25E+02	AC-228

Analysis Report for 1510064-09

CP2211S11-12

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
16	351.97	348 -	355	351.91	6.35E+02	68.38	3.57E+02	PB-214
17	462.80	460 -	465	462.68	7.66E+01	31.59	1.39E+02	SB-125
18	510.76	507 -	515	510.62	1.53E+02	46.23	2.37E+02	.....
19	583.20	579 -	588	583.02	3.13E+02	54.72	2.46E+02	TL-208
20	609.38	604 -	613	609.19	4.44E+02	59.97	2.60E+02	BI-214
21	618.06	616 -	620	617.87	1.88E+01	21.03	8.04E+01	PM-144
22	669.64	667 -	673	669.42	2.69E+01	27.65	1.20E+02	.....
23	701.41	698 -	705	701.17	3.00E+01	32.12	1.52E+02	.....
24	727.50	723 -	729	727.25	5.62E+01	31.53	1.40E+02	BI-212
25	768.28	765 -	770	768.02	3.70E+01	29.03	1.36E+02	.....
26	781.61	778 -	784	781.33	2.50E+01	26.38	1.08E+02	.....
27	794.96	791 -	799	794.68	4.30E+01	32.49	1.28E+02	CS-134
28	835.03	832 -	837	834.73	3.26E+01	22.29	7.08E+01	MN-54
29	839.91	838 -	842	839.61	2.11E+01	19.66	6.97E+01	.....
M 30	904.13	900 -	915	903.81	2.36E+01	19.82	5.33E+01	.....
m 31	911.24	900 -	915	910.92	2.17E+02	34.07	5.03E+01	AC-228 LU-172
32	934.95	930 -	939	934.62	5.24E+01	29.51	9.32E+01	.....
M 33	964.31	960 -	971	963.97	4.22E+01	24.68	6.63E+01	EU-152
m 34	969.15	960 -	971	968.80	1.27E+02	28.57	6.24E+01	AC-228
35	1000.83	998 -	1003	1000.47	1.79E+01	20.37	6.83E+01	PA-234M
36	1077.98	1073 -	1080	1077.59	2.25E+01	24.08	7.70E+01	.....
37	1084.17	1082 -	1086	1083.77	1.13E+01	15.23	4.34E+01	.....
38	1096.24	1089 -	1100	1095.84	3.19E+01	35.61	1.38E+02	.....
39	1120.46	1116 -	1124	1120.05	7.85E+01	33.21	1.21E+02	SC-46 BI-214 TA-182
40	1174.88	1170 -	1180	1174.45	3.84E+01	30.64	1.05E+02	.....
41	1300.37	1298 -	1303	1299.90	1.50E+01	16.55	4.39E+01	.....
42	1378.45	1372 -	1384	1377.96	3.07E+01	32.53	1.09E+02	.....
43	1407.88	1405 -	1410	1407.38	1.88E+01	12.21	1.43E+01	EU-152
44	1460.83	1454 -	1464	1460.31	7.86E+02	59.69	5.80E+01	K-40
45	1496.30	1492 -	1499	1495.77	1.00E+01	11.66	1.60E+01	.....
46	1509.13	1505 -	1512	1508.59	2.28E+01	12.81	1.23E+01	.....
47	1625.34	1614 -	1632	1624.77	4.88E+01	17.50	1.04E+01	.....
M 48	1724.95	1723 -	1734	1724.36	6.38E+00	4.24	2.00E+00	.....
m 49	1729.11	1723 -	1734	1728.52	2.69E+01	12.35	9.00E+00	.....
50	1764.44	1758 -	1767	1763.84	8.02E+01	20.66	1.56E+01	BI-214
51	1846.25	1841 -	1849	1845.63	1.01E+01	11.17	1.18E+01	.....
52	1977.69	1973 -	1980	1977.03	8.15E+00	7.48	3.70E+00	.....
53	1991.38	1987 -	1994	1990.72	8.00E+00	8.94	8.00E+00	.....
54	2071.68	2066 -	2075	2071.01	1.16E+01	9.00	4.71E+00	.....
55	2102.81	2097 -	2107	2102.14	3.25E+01	13.05	5.00E+00	.....
56	2138.05	2134 -	2140	2137.36	1.10E+01	6.63	0.00E+00	.....
57	2152.89	2149 -	2154	2152.20	5.25E+00	7.07	5.50E+00	.....
58	2177.86	2171 -	2181	2177.17	1.15E+01	11.34	1.09E+01	.....
59	2203.71	2197 -	2208	2203.02	2.90E+01	14.56	1.20E+01	BI-214
60	2299.21	2294 -	2302	2298.50	8.00E+00	5.66	0.00E+00	.....
61	2614.22	2609 -	2618	2613.48	1.06E+02	22.14	8.84E+00	TL-208

Analysis Report for 1510064-09

CP2211S11-12

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 : 11/3/2015 1:30:13PM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
M	1	43.95	6.97E+01	54.93	1.13E-02	1.68E-03
	2	76.45	1.25E+03	156.12	2.74E-02	3.36E-03
	3	87.45	8.98E+01	68.32	2.84E-02	4.45E-03
	4	92.49	2.94E+02	113.10	2.85E-02	4.31E-03
	5	143.89	6.30E+01	65.13	2.46E-02	2.33E-03
M	6	185.90	1.65E+02	52.23	2.11E-02	1.65E-03
m	7	188.86	4.31E+01	47.79	2.09E-02	1.65E-03
	8	208.94	1.07E+02	65.84	1.95E-02	1.63E-03
M	9	238.84	8.54E+02	72.46	1.79E-02	1.60E-03
m	10	242.06	2.04E+02	70.79	1.77E-02	1.60E-03
	11	270.34	8.67E+01	58.75	1.64E-02	1.57E-03
	12	277.95	4.89E+01	51.26	1.61E-02	1.56E-03
	13	295.23	3.52E+02	60.51	1.55E-02	1.48E-03
	14	300.11	5.76E+01	40.78	1.53E-02	1.46E-03
	15	338.63	1.67E+02	65.89	1.41E-02	1.27E-03
	16	351.97	6.35E+02	68.38	1.37E-02	1.21E-03
	17	462.80	7.66E+01	31.59	1.13E-02	9.47E-04
	18	510.76	1.53E+02	46.23	1.06E-02	8.99E-04
	19	583.20	3.13E+02	54.72	9.58E-03	8.25E-04
	20	609.38	4.44E+02	59.97	9.27E-03	7.98E-04
	21	618.06	1.88E+01	21.03	9.17E-03	7.89E-04
	22	669.64	2.69E+01	27.65	8.62E-03	7.40E-04
	23	701.41	3.00E+01	32.12	8.32E-03	7.20E-04
	24	727.50	5.62E+01	31.53	8.08E-03	7.03E-04
	25	768.28	3.70E+01	29.03	7.74E-03	6.77E-04
	26	781.61	2.50E+01	26.38	7.64E-03	6.68E-04
	27	794.96	4.30E+01	32.49	7.53E-03	6.60E-04
	28	835.03	3.26E+01	22.29	7.24E-03	6.34E-04
	29	839.91	2.11E+01	19.66	7.21E-03	6.31E-04
M	30	904.13	2.36E+01	19.82	6.79E-03	5.90E-04
m	31	911.24	2.17E+02	34.07	6.74E-03	5.87E-04
	32	934.95	5.24E+01	29.51	6.61E-03	5.74E-04
M	33	964.31	4.22E+01	24.68	6.44E-03	5.59E-04
m	34	969.15	1.27E+02	28.57	6.41E-03	5.57E-04

Analysis Report for 1510064-09

CP2211S11-12

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty	
35	1000.83	1.79E+01	20.37	6.25E-03	5.41E-04	
36	1077.98	2.25E+01	24.08	5.88E-03	5.01E-04	
37	1084.17	1.13E+01	15.23	5.86E-03	4.98E-04	
38	1096.24	3.19E+01	35.61	5.80E-03	4.92E-04	
39	1120.46	7.85E+01	33.21	5.70E-03	4.80E-04	
40	1174.88	3.84E+01	30.64	5.49E-03	4.54E-04	
41	1300.37	1.50E+01	16.55	5.08E-03	5.12E-04	
42	1378.45	3.07E+01	32.53	4.87E-03	5.07E-04	
43	1407.88	1.88E+01	12.21	4.79E-03	4.95E-04	
44	1460.83	7.86E+02	59.69	4.67E-03	4.73E-04	
45	1496.30	1.00E+01	11.66	4.60E-03	4.59E-04	
46	1509.13	2.28E+01	12.81	4.57E-03	4.53E-04	
47	1625.34	4.88E+01	17.50	4.37E-03	4.05E-04	
M	48	1724.95	6.38E+00	4.24	4.23E-03	3.64E-04
m	49	1729.11	2.69E+01	12.35	4.23E-03	3.62E-04
50	1764.44	8.02E+01	20.66	4.19E-03	3.48E-04	
51	1846.25	1.01E+01	11.17	4.10E-03	3.18E-04	
52	1977.69	8.15E+00	7.48	4.01E-03	3.18E-04	
53	1991.38	8.00E+00	8.94	4.00E-03	3.18E-04	
54	2071.68	1.16E+01	9.00	3.96E-03	3.18E-04	
55	2102.81	3.25E+01	13.05	3.95E-03	3.18E-04	
56	2138.05	1.10E+01	6.63	3.94E-03	3.18E-04	
57	2152.89	5.25E+00	7.07	3.94E-03	3.18E-04	
58	2177.86	1.15E+01	11.34	3.93E-03	3.18E-04	
59	2203.71	2.90E+01	14.56	3.93E-03	3.18E-04	
60	2299.21	8.00E+00	5.66	3.93E-03	3.18E-04	
61	2614.22	1.06E+02	22.14	4.05E-03	3.18E-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 : 11/3/2015 1:30:13PM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000028942.CNF

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
M	1	43.95	6.97E+01	54.93		6.97E+01	5.49E+01
	2	76.45	1.25E+03	156.12		1.25E+03	1.56E+02
	3	87.45	8.98E+01	68.32	1.46E+00	8.83E+01	6.88E+01

: 00565

Analysis Report for 1510064-09

CP2211S11-12

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	4	92.49	2.94E+02	113.10	5.70E+01	9.03E+00	2.37E+02	1.13E+02
	5	143.89	6.30E+01	65.13	8.10E+00	1.90E+01	5.49E+01	6.79E+01
M	6	185.90	1.65E+02	52.23	4.72E+01	7.97E+00	1.18E+02	5.28E+01
m	7	188.86	4.31E+01	47.79			4.31E+01	4.78E+01
	8	208.94	1.07E+02	65.84			1.07E+02	6.58E+01
M	9	238.84	8.54E+02	72.46	2.36E+01	1.35E+01	8.31E+02	7.37E+01
m	10	242.06	2.04E+02	70.79	6.38E+00	3.91E+00	1.97E+02	7.09E+01
	11	270.34	8.67E+01	58.75			8.67E+01	5.88E+01
	12	277.95	4.89E+01	51.26			4.89E+01	5.13E+01
	13	295.23	3.52E+02	60.51	8.57E+00	6.10E+00	3.43E+02	6.08E+01
	14	300.11	5.76E+01	40.78			5.76E+01	4.08E+01
	15	338.63	1.67E+02	65.89			1.67E+02	6.59E+01
	16	351.97	6.35E+02	68.38	1.40E+01	5.55E+00	6.21E+02	6.86E+01
	17	462.80	7.66E+01	31.59			7.66E+01	3.16E+01
	18	510.76	1.53E+02	46.23	8.41E+01	5.50E+00	6.86E+01	4.66E+01
	19	583.20	3.13E+02	54.72	7.32E+00	4.08E+00	3.06E+02	5.49E+01
	20	609.38	4.44E+02	59.97	1.30E+01	3.89E+00	4.31E+02	6.01E+01
	21	618.06	1.88E+01	21.03			1.88E+01	2.10E+01
	22	669.64	2.69E+01	27.65			2.69E+01	2.76E+01
	23	701.41	3.00E+01	32.12			3.00E+01	3.21E+01
	24	727.50	5.62E+01	31.53			5.62E+01	3.15E+01
	25	768.28	3.70E+01	29.03			3.70E+01	2.90E+01
	26	781.61	2.50E+01	26.38			2.50E+01	2.64E+01
	27	794.96	4.30E+01	32.49			4.30E+01	3.25E+01
	28	835.03	3.26E+01	22.29			3.26E+01	2.23E+01
	29	839.91	2.11E+01	19.66			2.11E+01	1.97E+01
M	30	904.13	2.36E+01	19.82			2.36E+01	1.98E+01
m	31	911.24	2.17E+02	34.07	5.60E+00	3.32E+00	2.12E+02	3.42E+01
	32	934.95	5.24E+01	29.51			5.24E+01	2.95E+01
M	33	964.31	4.22E+01	24.68			4.22E+01	2.47E+01
m	34	969.15	1.27E+02	28.57			1.27E+02	2.86E+01
	35	1000.83	1.79E+01	20.37			1.79E+01	2.04E+01
	36	1077.98	2.25E+01	24.08			2.25E+01	2.41E+01
	37	1084.17	1.13E+01	15.23			1.13E+01	1.52E+01
	38	1096.24	3.19E+01	35.61			3.19E+01	3.56E+01
	39	1120.46	7.85E+01	33.21	3.93E+00	2.96E+00	7.46E+01	3.33E+01
	40	1174.88	3.84E+01	30.64			3.84E+01	3.06E+01
	41	1300.37	1.50E+01	16.55			1.50E+01	1.66E+01
	42	1378.45	3.07E+01	32.53			3.07E+01	3.25E+01
	43	1407.88	1.88E+01	12.21			1.88E+01	1.22E+01
	44	1460.83	7.86E+02	59.69	1.12E+01	2.55E+00	7.75E+02	5.97E+01
	45	1496.30	1.00E+01	11.66			1.00E+01	1.17E+01
	46	1509.13	2.28E+01	12.81			2.28E+01	1.28E+01
	47	1625.34	4.88E+01	17.50			4.88E+01	1.75E+01
M	48	1724.95	6.38E+00	4.24			6.38E+00	4.24E+00
m	49	1729.11	2.69E+01	12.35			2.69E+01	1.23E+01
	50	1764.44	8.02E+01	20.66	4.23E+00	2.21E+00	7.60E+01	2.08E+01
	51	1846.25	1.01E+01	11.17			1.01E+01	1.12E+01
	52	1977.69	8.15E+00	7.48			8.15E+00	7.48E+00
	53	1991.38	8.00E+00	8.94			8.00E+00	8.94E+00
	54	2071.68	1.16E+01	9.00			1.16E+01	9.00E+00
	55	2102.81	3.25E+01	13.05			3.25E+01	1.30E+01
	56	2138.05	1.10E+01	6.63			1.10E+01	6.63E+00
	57	2152.89	5.25E+00	7.07			5.25E+00	7.07E+00

Analysis Report for 1510064-09

CP2211S11-12

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
58	2177.86	1.15E+01	11.34			1.15E+01	1.13E+01
59	2203.71	2.90E+01	14.56	5.94E-01	1.16E+00	2.84E+01	1.46E+01
60	2299.21	8.00E+00	5.66			8.00E+00	5.66E+00
61	2614.22	1.06E+02	22.14	7.38E+00	1.57E+00	9.82E+01	2.22E+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 : 11/3/2015 1:30:13PM
 Ref. Peak Energy : 0.00 Reference Date :
 Peak Ratio : 0.00 Uncertainty : 0.00
 Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000028942.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	43.95	6.97E+01	54.93			6.97E+01	5.49E+01
2	76.45	1.25E+03	156.12			1.25E+03	1.56E+02
3	87.45	8.98E+01	68.32	1.46E+00	7.88E+00	8.83E+01	6.88E+01
4	92.49	2.94E+02	113.10	5.70E+01	9.03E+00	2.37E+02	1.13E+02
5	143.89	6.30E+01	65.13	8.10E+00	1.90E+01	5.49E+01	6.79E+01
M 6	185.90	1.65E+02	52.23	4.72E+01	7.97E+00	1.18E+02	5.28E+01
m 7	188.86	4.31E+01	47.79			4.31E+01	4.78E+01
8	208.94	1.07E+02	65.84			1.07E+02	6.58E+01
M 9	238.84	8.54E+02	72.46	2.36E+01	1.35E+01	8.31E+02	7.37E+01
m 10	242.06	2.04E+02	70.79	6.38E+00	3.91E+00	1.97E+02	7.09E+01
11	270.34	8.67E+01	58.75			8.67E+01	5.88E+01
12	277.95	4.89E+01	51.26			4.89E+01	5.13E+01
13	295.23	3.52E+02	60.51	8.57E+00	6.10E+00	3.43E+02	6.08E+01
14	300.11	5.76E+01	40.78			5.76E+01	4.08E+01
15	338.63	1.67E+02	65.89			1.67E+02	6.59E+01
16	351.97	6.35E+02	68.38	1.40E+01	5.55E+00	6.21E+02	6.86E+01
17	462.80	7.66E+01	31.59			7.66E+01	3.16E+01
18	510.76	1.53E+02	46.23	8.41E+01	5.50E+00	6.86E+01	4.66E+01
19	583.20	3.13E+02	54.72	7.32E+00	4.08E+00	3.06E+02	5.49E+01
20	609.38	4.44E+02	59.97	1.30E+01	3.89E+00	4.31E+02	6.01E+01
21	618.06	1.88E+01	21.03			1.88E+01	2.10E+01
22	669.64	2.69E+01	27.65			2.69E+01	2.76E+01
23	701.41	3.00E+01	32.12			3.00E+01	3.21E+01
24	727.50	5.62E+01	31.53			5.62E+01	3.15E+01

Analysis Report for 1510064-09

CP2211S11-12

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	25	768.28	3.70E+01	29.03			3.70E+01	2.90E+01
	26	781.61	2.50E+01	26.38			2.50E+01	2.64E+01
	27	794.96	4.30E+01	32.49			4.30E+01	3.25E+01
	28	835.03	3.26E+01	22.29			3.26E+01	2.23E+01
	29	839.91	2.11E+01	19.66			2.11E+01	1.97E+01
M	30	904.13	2.36E+01	19.82			2.36E+01	1.98E+01
m	31	911.24	2.17E+02	34.07	5.60E+00	3.32E+00	2.12E+02	3.42E+01
	32	934.95	5.24E+01	29.51			5.24E+01	2.95E+01
M	33	964.31	4.22E+01	24.68			4.22E+01	2.47E+01
m	34	969.15	1.27E+02	28.57			1.27E+02	2.86E+01
	35	1000.83	1.79E+01	20.37			1.79E+01	2.04E+01
	36	1077.98	2.25E+01	24.08			2.25E+01	2.41E+01
	37	1084.17	1.13E+01	15.23			1.13E+01	1.52E+01
	38	1096.24	3.19E+01	35.61			3.19E+01	3.56E+01
	39	1120.46	7.85E+01	33.21	3.93E+00	2.96E+00	7.46E+01	3.33E+01
	40	1174.88	3.84E+01	30.64			3.84E+01	3.06E+01
	41	1300.37	1.50E+01	16.55			1.50E+01	1.66E+01
	42	1378.45	3.07E+01	32.53			3.07E+01	3.25E+01
	43	1407.88	1.88E+01	12.21			1.88E+01	1.22E+01
	44	1460.83	7.86E+02	59.69	1.12E+01	2.55E+00	7.75E+02	5.97E+01
	45	1496.30	1.00E+01	11.66			1.00E+01	1.17E+01
	46	1509.13	2.28E+01	12.81			2.28E+01	1.28E+01
	47	1625.34	4.88E+01	17.50			4.88E+01	1.75E+01
M	48	1724.95	6.38E+00	4.24			6.38E+00	4.24E+00
m	49	1729.11	2.69E+01	12.35			2.69E+01	1.23E+01
	50	1764.44	8.02E+01	20.66	4.23E+00	2.21E+00	7.60E+01	2.08E+01
	51	1846.25	1.01E+01	11.17			1.01E+01	1.12E+01
	52	1977.69	8.15E+00	7.48			8.15E+00	7.48E+00
	53	1991.38	8.00E+00	8.94			8.00E+00	8.94E+00
	54	2071.68	1.16E+01	9.00			1.16E+01	9.00E+00
	55	2102.81	3.25E+01	13.05			3.25E+01	1.30E+01
	56	2138.05	1.10E+01	6.63			1.10E+01	6.63E+00
	57	2152.89	5.25E+00	7.07			5.25E+00	7.07E+00
	58	2177.86	1.15E+01	11.34			1.15E+01	1.13E+01
	59	2203.71	2.90E+01	14.56	5.94E-01	1.16E+00	2.84E+01	1.46E+01
	60	2299.21	8.00E+00	5.66			8.00E+00	5.66E+00
	61	2614.22	1.06E+02	22.14	7.38E+00	1.57E+00	9.82E+01	2.22E+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

: 00568

Analysis Report for 1510064-09

CP2211S11-12

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	1.000	1460.81 *	10.67	1.96E+01	2.53E+00
MN-54	0.994	834.83 *	99.97	6.06E-02	4.18E-02
GA-67	0.641	93.31 *	35.70	1.19E+02	4.60E+02
		208.95 *	2.24	1.25E+03	4.65E+03
		300.22 *	16.00	1.20E+02	4.69E+02
CD-109	0.947	88.03 *	3.72	1.10E+00	8.77E-01
SN-126	0.998	87.57 *	37.00	1.06E-01	8.43E-02
TL-208	0.877	583.14 *	30.22	1.33E+00	2.66E-01
		860.37	4.48		
		2614.66 *	35.85	8.55E-01	2.04E-01
BI-212	0.752	727.17 *	11.80	7.45E-01	4.23E-01
		1620.62	2.75		
PB-212	0.993	238.63 *	44.60	1.32E+00	1.66E-01
		300.09 *	3.41	1.40E+00	9.97E-01
BI-214	0.996	609.31 *	46.30	1.27E+00	2.08E-01
		1120.29 *	15.10	1.10E+00	4.98E-01
		1764.49 *	15.80	1.45E+00	4.15E-01
		2204.22 *	4.98	1.83E+00	9.55E-01
PB-214	1.000	295.21 *	19.19	1.46E+00	2.94E-01
		351.92 *	37.19	1.54E+00	2.17E-01
RA-226	0.985	186.21 *	3.28	2.16E+00	4.07E+00
AC-228	0.994	338.32 *	11.40	1.31E+00	5.32E-01
		911.07 *	27.70	1.43E+00	2.63E-01
		969.11 *	16.60	1.50E+00	3.63E-01
PA-234M	0.994	1001.03 *	0.92	3.93E+00	4.49E+00
NP-237	0.867	86.50 *	12.60	3.12E-01	2.48E-01
CM-243	0.352	209.75 *	3.29	2.11E+00	1.31E+00
		228.14	10.60		
		277.60 *	14.00	2.74E-01	2.89E-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 : 11/3/2015 1:30:13PM
 Peak Locate From Channel : 1
 Peak Locate To Channel : 4096

Analysis Report for 1510064-09

CP2211S11-12

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
M	1	43.95	1.93678E-02	39.39		
	2	76.45	3.46573E-01	6.26		
	5	143.89	1.52496E-02	61.80	Tol.	U-235
m	7	188.86	1.19751E-02	55.43		
m	10	242.06	5.48430E-02	17.95		
	11	270.34	2.40905E-02	33.87		
	17	462.80	2.12881E-02	20.61	Tol.	SB-125
	18	510.76	1.90602E-02	33.92		
	21	618.06	5.21657E-03	55.99	Tol.	PM-144
	22	669.64	7.46488E-03	51.44		
	23	701.41	8.33333E-03	53.54	Sum	
	25	768.28	1.02672E-02	39.28	Sum	
	26	781.61	6.94444E-03	52.75		
	27	794.96	1.19393E-02	37.80	Sum	
	29	839.91	5.87302E-03	46.49		
M	30	904.13	6.55383E-03	42.01	Sum	
	32	934.95	1.45497E-02	28.17	Sum	
M	33	964.31	1.17352E-02	29.21	Tol.	EU-152
	36	1077.98	6.25455E-03	53.48		
	37	1084.17	3.14394E-03	67.29		
	38	1096.24	8.85314E-03	55.86	Sum	
	40	1174.88	1.06761E-02	39.86		
	41	1300.37	4.17417E-03	55.08	Sum	
	42	1378.45	8.52614E-03	52.99		
	43	1407.88	5.22970E-03	32.42	Tol.	EU-152
	45	1496.30	2.77778E-03	58.31		
	46	1509.13	6.34579E-03	28.03		
	47	1625.34	1.35571E-02	17.93		
M	48	1724.95	1.77178E-03	33.26		
m	49	1729.11	7.46307E-03	22.98	Sum	
	51	1846.25	2.80382E-03	55.33		
	52	1977.69	2.26389E-03	45.91		
	53	1991.38	2.22222E-03	55.90		
	54	2071.68	3.23413E-03	38.65		
	55	2102.81	9.02778E-03	20.07	S-Esc	
	56	2138.05	3.05556E-03	30.15		
	57	2152.89	1.45833E-03	67.34		
	58	2177.86	3.20261E-03	49.16		
	60	2299.21	2.22222E-03	35.36		

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

Analysis Report for 1510064-09

CP2211S11-12

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	1.00	1460.81 *	10.67	1.96E+01	2.53E+00
MN-54	0.99	834.83 *	99.97	6.06E-02	4.18E-02
GA-67	0.64	93.31 *	35.70	1.19E+02	4.60E+02
		208.95 *	2.24	1.25E+03	4.65E+03
		300.22 *	16.00	1.20E+02	4.69E+02
CD-109	0.94	88.03 *	3.72	1.10E+00	8.77E-01
SN-126	0.99	87.57 *	37.00	1.06E-01	8.43E-02
TL-208	0.87	583.14 *	30.22	1.33E+00	2.66E-01
		860.37 *	4.48		
		2614.66 *	35.85	8.55E-01	2.04E-01
BI-212	0.75	727.17 *	11.80	7.45E-01	4.23E-01
		1620.62 *	2.75		
PB-212	0.99	238.63 *	44.60	1.32E+00	1.66E-01
		300.09 *	3.41	1.40E+00	9.97E-01
BI-214	0.99	609.31 *	46.30	1.27E+00	2.08E-01
		1120.29 *	15.10	1.10E+00	4.98E-01
		1764.49 *	15.80	1.45E+00	4.15E-01
		2204.22 *	4.98	1.83E+00	9.55E-01
PB-214	1.00	295.21 *	19.19	1.46E+00	2.94E-01
		351.92 *	37.19	1.54E+00	2.17E-01
RA-226	0.98	186.21 *	3.28	2.16E+00	4.07E+00
AC-228	0.99	338.32 *	11.40	1.31E+00	5.32E-01
		911.07 *	27.70	1.43E+00	2.63E-01
		969.11 *	16.60	1.50E+00	3.63E-01
PA-234M	0.99	1001.03 *	0.92	3.93E+00	4.49E+00
NP-237	0.86	86.50 *	12.60	3.12E-01	2.48E-01
CM-243	0.35	209.75 *	3.29	2.11E+00	1.31E+00
		228.14 *	10.60		
		277.60 *	14.00	2.74E-01	2.89E-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 2.00sigma

Analysis Report for 1510064-09

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INTERFERENCE CORRECTED REPORT

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
K-40	1.000	1.96E+01	2.53E+00	
MN-54	0.994	6.06E-02	4.18E-02	
GA-67	0.641	8.66E+01	3.22E+02	
? CD-109	0.947	1.10E+00	8.77E-01	
? SN-126	0.998	1.06E-01	8.43E-02	
TL-208	0.877	1.03E+00	1.62E-01	
BI-212	0.752	7.45E-01	4.23E-01	
PB-212	0.993	1.29E+00	1.65E-01	
BI-214	0.996	1.30E+00	1.71E-01	
PB-214	1.000	1.51E+00	1.75E-01	
RA-226	0.985	2.16E+00	4.07E+00	
AC-228	0.994	1.44E+00	1.98E-01	
PA-234M	0.994	3.93E+00	4.49E+00	
? NP-237	0.867	3.12E-01	2.48E-01	
CM-243	0.352	3.53E-01	2.82E-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 1510064-09
CP2211S11-12

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/3/2015 1:30:13PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
M	1	43.95	1.93678E-02		
	2	76.45	3.46573E-01		
	5	143.89	1.52496E-02	Tol.	U-235
m	7	188.86	1.19751E-02		
m	10	242.06	5.48430E-02		
	11	270.34	2.40905E-02		
	17	462.80	2.12881E-02	Tol.	SB-125
	18	510.76	1.90602E-02		
	21	618.06	5.21657E-03	Tol.	PM-144
	22	669.64	7.46488E-03		
	23	701.41	8.33333E-03	Sum	
	25	768.28	1.02672E-02	Sum	
	26	781.61	6.94444E-03		
	27	794.96	1.19393E-02	Sum	
	29	839.91	5.87302E-03		
M	30	904.13	6.55383E-03	Sum	
	32	934.95	1.45497E-02	Sum	
M	33	964.31	1.17352E-02	Tol.	EU-152
	36	1077.98	6.25455E-03		
	37	1084.17	3.14394E-03		
	38	1096.24	8.85314E-03	Sum	
	40	1174.88	1.06761E-02		
	41	1300.37	4.17417E-03	Sum	
	42	1378.45	8.52614E-03		
	43	1407.88	5.22970E-03	Tol.	EU-152
	45	1496.30	2.77778E-03		
	46	1509.13	6.34579E-03		
	47	1625.34	1.35571E-02		
M	48	1724.95	1.77178E-03		
m	49	1729.11	7.46307E-03	Sum	
	51	1846.25	2.80382E-03		
	52	1977.69	2.26389E-03		
	53	1991.38	2.22222E-03		
	54	2071.68	3.23413E-03		
	55	2102.81	9.02778E-03	S-Esc	

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Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
56	2138.05	3.05556E-03	30.15		
57	2152.89	1.45833E-03	67.34		
58	2177.86	3.20261E-03	49.16		
60	2299.21	2.22222E-03	35.36		

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

NUCLIDE MDA REPORT

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

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	BE-7	477.59	10.42	2.04E-01	7.12E-01	7.12E-01
+	NA-22	1274.54	99.94	3.36E-02	9.24E-02	9.24E-02
+	NA-24	1368.53	99.99	3.31E+11	1.29E+12	2.64E+12
		2754.09	99.86	9.29E+10		1.29E+12
+	AL-26	1808.65	99.76	-4.24E-03	5.97E-02	5.97E-02
+	K-40	1460.81	* 10.67	1.96E+01	9.73E-01	9.73E-01
+	@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88	94.40	-3.79E-02	5.09E-02	5.09E-02
		78.34	96.00	3.04E-01		7.36E-02
+	SC-46	889.25	99.98	-1.16E-03	7.87E-02	7.87E-02
		1120.51	99.99	2.30E-01		1.56E-01
+	V-48	983.52	99.98	-7.56E-02	2.53E-01	2.53E-01
		1312.10	97.50	1.83E-01		2.97E-01
+	CR-51	320.08	9.83	-3.04E-01	9.92E-01	9.92E-01
+	MN-54	834.83	* 99.97	6.06E-02	6.36E-02	6.36E-02
+	CO-56	846.75	99.96	3.08E-02	9.49E-02	9.49E-02
		1037.75	14.03	-3.05E-01		6.59E-01
		1238.25	67.00	1.31E-01		2.12E-01
		1771.40	15.51	-1.70E-01		4.17E-01
		2598.48	16.90	3.96E-02		2.20E-01
+	CO-57	122.06	85.51	1.49E-02	5.73E-02	5.73E-02
		136.48	10.60	2.18E-01		4.87E-01
+	CO-58	810.76	99.40	-8.62E-02	8.20E-02	8.20E-02
+	FE-59	1099.22	56.50	-4.68E-02	2.09E-01	2.09E-01
		1291.56	43.20	1.40E-01		3.11E-01

Analysis Report for 1510064-09
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	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	CO-60	1173.22		100.00	1.89E-02	6.77E-02	9.00E-02
		1332.49		100.00	-8.72E-03		6.77E-02
+	ZN-65	1115.52		50.75	-4.57E-02	1.65E-01	1.65E-01
+	GA-67	93.31	*	35.70	1.19E+02	9.14E+01	9.14E+01
		208.95	*	2.24	1.25E+03		1.23E+03
		300.22	*	16.00	1.20E+02		1.35E+02
+	SE-75	121.11		16.70	-1.73E-02	9.42E-02	3.17E-01
		136.00		59.20	-2.97E-02		9.42E-02
		264.65		59.80	-3.49E-02		9.93E-02
		279.53		25.20	-7.75E-02		2.52E-01
		400.65		11.40	-3.34E-01		5.07E-01
+	RB-82	776.52		13.00	-2.50E-01	1.09E+00	1.09E+00
+	RB-83	520.41		46.00	-1.25E-02	1.28E-01	1.28E-01
		529.64		30.30	1.89E-02		2.16E-01
		552.65		16.40	2.41E-02		4.04E-01
+	KR-85	513.99		0.43	-9.12E+00	1.37E+01	1.37E+01
+	SR-85	513.99		99.27	-5.36E-02	8.06E-02	8.06E-02
+	Y-88	898.02		93.40	3.12E-02	6.19E-02	8.56E-02
		1836.01		99.38	-1.43E-02		6.19E-02
+	NB-93M	16.57		9.43	-6.09E+03	5.05E+03	5.05E+03
+	NB-94	702.63		100.00	3.97E-02	6.67E-02	7.38E-02
		871.10		100.00	-1.44E-02		6.67E-02
+	NB-95	765.79		99.81	2.43E-02	1.58E-01	1.58E-01
+	NB-95M	235.69		25.00	-4.79E+02	6.73E+01	6.73E+01
+	ZR-95	724.18		43.70	-9.68E-03	1.71E-01	2.45E-01
		756.72		55.30	-1.33E-03		1.71E-01
+	MO-99	181.06		6.20	6.04E+02	6.85E+02	1.02E+03
		739.58		12.80	2.81E+02		6.85E+02
		778.00		4.50	-7.19E+02		1.82E+03
+	RU-103	497.08		89.00	3.15E-02	9.77E-02	9.77E-02
+	RU-106	621.84		9.80	-8.43E-02	6.24E-01	6.24E-01
+	AG-108M	433.93		89.90	1.18E-02	6.00E-02	6.00E-02
		614.37		90.40	-1.06E-02		7.22E-02
		722.95		90.50	-7.61E-03		7.80E-02
+	CD-109	88.03	*	3.72	1.10E+00	1.39E+00	1.39E+00
+	AG-110M	657.75		93.14	7.94E-03	7.74E-02	7.74E-02
		677.61		10.53	7.89E-02		6.11E-01
		706.67		16.46	8.79E-03		4.32E-01
		763.93		21.98	8.22E-02		3.90E-01
		884.67		71.63	-3.18E-03		8.88E-02
		1384.27		23.94	2.35E-02		3.27E-01
+	CD-113M	263.70		0.02	-6.94E+01	2.20E+02	2.20E+02
+	SN-113	255.12		1.93	9.86E-01	9.87E-02	3.09E+00
		391.69		64.90	1.13E-02		9.87E-02
+	TE123M	159.00		84.10	-1.36E-02	6.71E-02	6.71E-02
+	SB-124	602.71		97.87	1.64E-02	8.38E-02	8.38E-02
		645.85		7.26	5.48E-01		1.23E+00
		722.78		11.10	-8.58E-02		8.80E-01

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	SB-124	1691.02	49.00	4.01E-02	8.38E-02	1.96E-01
+	I-125	35.49	6.49	4.40E+00	5.52E+00	5.52E+00
+	SB-125	176.33	6.89	-2.08E-01	1.88E-01	7.41E-01
		427.89	29.33	4.36E-02		1.88E-01
		463.38	10.35	8.21E-01		6.26E-01
		600.56	17.80	7.13E-02		3.50E-01
		635.90	11.32	-1.80E-01		4.92E-01
+	SB-126	414.70	83.30	3.20E-02	3.05E-01	3.05E-01
		666.33	99.60	7.40E-03		3.31E-01
		695.00	99.60	7.07E-02		3.38E-01
		720.50	53.80	5.50E-02		6.30E-01
+	SN-126	87.57	* 37.00	1.06E-01	1.34E-01	1.34E-01
+	SB-127	473.00	25.00	3.91E+00	2.93E+01	3.27E+01
		685.20	35.70	1.05E+01		2.93E+01
		783.80	14.70	1.47E+01		8.47E+01
+	I-129	29.78	57.00	-2.41E-01	1.15E+00	1.15E+00
		33.60	13.20	1.35E-01		2.50E+00
		39.58	7.52	6.36E-01		2.08E+00
+	I-131	284.30	6.05	-4.95E+00	6.91E-01	9.77E+00
		364.48	81.20	-3.81E-02		6.91E-01
		636.97	7.26	-2.94E-01		8.64E+00
		722.89	1.80	-4.36E+00		4.47E+01
+	TE-132	49.72	13.10	1.50E+02	2.48E+01	2.37E+02
		228.16	88.00	-1.99E+00		2.48E+01
+	BA-133	81.00	33.00	5.10E-02	8.11E-02	1.22E-01
		302.84	17.80	9.13E-03		2.78E-01
		356.01	60.00	-3.27E-02		8.11E-02
+	I-133	529.87	86.30	4.08E+07	3.90E+08	3.90E+08
+	XE-133	81.00	38.00	1.84E+00	4.40E+00	4.40E+00
+	CS-134	563.23	8.38	1.14E-01	8.43E-02	7.02E-01
		569.32	15.43	-2.02E-01		3.12E-01
		604.70	97.60	1.57E-02		8.43E-02
		795.84	85.40	2.64E-02		9.10E-02
		801.93	8.73	1.80E-01		8.33E-01
+	CS-135	268.24	16.00	2.70E-02	3.41E-01	3.41E-01
+	@ 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	6.00E-01	3.15E-01	2.95E+00
		163.89	4.61	4.22E+00		4.82E+00
		176.55	13.56	3.66E-01		1.67E+00
		273.65	12.66	-2.64E+00		1.66E+00
		340.57	48.50	-5.65E-01		5.61E-01
		818.50	99.70	-2.68E-02		3.15E-01
		1048.07	79.60	2.16E-01		4.41E-01
		1235.34	19.70	8.47E-01		2.46E+00
+	CS-137	661.65	85.12	2.59E-02	8.05E-02	8.05E-02
+	LA-138	788.74	34.00	9.11E-04	9.94E-02	2.20E-01
		1435.80	66.00	-2.76E-03		9.94E-02

Analysis Report for 1510064-09

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	CE-139	165.85	80.35	-7.20E-03	6.99E-02	6.99E-02
+	BA-140	162.64	6.70	2.21E+00	9.09E-01	3.47E+00
		304.84	4.50	2.68E-01		4.92E+00
		423.70	3.20	-3.92E+00		7.08E+00
		437.55	2.00	-2.35E+00		1.25E+01
		537.32	25.00	-3.34E-01		9.09E-01
+	LA-140	328.77	20.50	-1.78E-01	3.18E-01	1.13E+00
		487.03	45.50	1.47E-01		5.50E-01
		815.85	23.50	2.40E-01		1.37E+00
		1596.49	95.49	6.41E-02		3.18E-01
+	CE-141	145.44	48.40	1.63E-01	1.88E-01	1.88E-01
+	CE-143	57.36	11.80	-3.90E+05	2.77E+05	6.46E+05
		293.26	42.00	1.17E+05		2.77E+05
		664.55	5.20	2.50E+05		1.92E+06
+	CE-144	133.54	10.80	-1.31E-01	4.70E-01	4.70E-01
+	PM-144	476.78	42.00	3.70E-02	6.42E-02	1.29E-01
		618.01	98.60	-8.66E-03		6.42E-02
		696.49	99.49	1.11E-02		7.51E-02
+	PM-145	36.85	21.70	-2.19E-01	4.97E-01	9.67E-01
		37.36	39.70	-1.13E-01		4.97E-01
		42.30	15.10	-5.38E-01		8.20E-01
		72.40	2.31	-2.75E+00		2.01E+00
+	PM-146	453.90	39.94	-8.34E-03	1.21E-01	1.21E-01
		735.90	14.01	-2.15E-01		4.86E-01
		747.13	13.10	1.20E-01		5.23E-01
+	ND-147	91.11	28.90	-1.43E+00	1.27E+00	1.27E+00
		531.02	13.10	8.59E-02		2.42E+00
+	PM-149	285.90	3.10	6.57E+03	1.20E+04	1.20E+04
+	EU-152	121.78	20.50	5.81E-02	2.23E-01	2.23E-01
		244.69	5.40	-2.05E+00		9.70E-01
		344.27	19.13	7.56E-02		2.69E-01
		778.89	9.20	-5.23E-02		7.60E-01
		964.01	10.40	-2.46E+00		8.92E-01
		1085.78	7.22	1.13E-01		1.08E+00
		1112.02	9.60	-4.55E-02		8.57E-01
		1407.95	14.94	1.97E-03		4.76E-01
+	GD-153	97.43	31.30	7.75E-02	1.64E-01	1.64E-01
		103.18	22.20	-9.69E-02		2.21E-01
+	EU-154	123.07	40.50	6.90E-02	1.15E-01	1.15E-01
		723.30	19.70	-3.52E-02		3.61E-01
		873.19	11.50	-2.02E-01		5.94E-01
		996.32	10.30	-1.04E-03		7.26E-01
		1004.76	17.90	7.99E-02		4.28E-01
		1274.45	35.50	9.33E-02		2.56E-01
+	EU-155	86.50	30.90	-1.78E-01	1.93E-01	1.93E-01
		105.30	20.70	5.09E-02		2.25E-01
+	EU-156	811.77	10.40	-2.09E+00	2.12E+00	2.12E+00
		1153.47	7.20	1.85E+00		4.07E+00
		1230.71	8.90	1.26E+00		3.99E+00

Analysis Report for 1510064-09

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	HO-166M	184.41	72.60	-3.77E-02	8.24E-02	8.24E-02
		280.45	29.60	-5.61E-02		1.83E-01
		410.94	11.10	1.47E-01		5.13E-01
		711.69	54.10	-1.66E-02		1.24E-01
+	TM-171	66.72	0.14	1.37E+01	3.61E+01	3.61E+01
		81.75	4.52	-1.31E+00		4.21E-01	8.76E-01
+	LU-172	125.81	11.30	-3.44E-01	2.63E+00	4.21E-01
		181.53	20.60	1.80E+00		4.59E+00
		810.06	16.63	-7.24E+00		6.89E+00
		912.12	15.25	4.43E+01		1.74E+01
+	LU-173	1093.66	62.50	9.27E-01	2.78E-01	2.63E+00
		100.72	5.24	9.38E-02		9.07E-01
		272.11	21.20	2.83E-01		2.78E-01
+	HF-175	343.40	84.00	-6.46E-03	8.29E-02	8.29E-02
+	LU-176	88.34	13.30	3.59E-01	5.26E-02	4.56E-01
		201.83	86.00	2.65E-02		6.30E-02
		306.78	94.00	-1.20E-02		5.26E-02
+	TA-182	67.75	41.20	-1.03E-01	1.39E-01	1.39E-01
		1121.30	34.90	4.19E-01		4.08E-01
		1189.05	16.23	3.36E-01		7.21E-01
		1221.41	26.98	4.53E-02		4.01E-01
		1231.02	11.44	1.86E-01		1.02E+00
+	IR-192	308.46	29.68	6.73E-02	1.36E-01	2.23E-01
		468.07	48.10	-8.79E-03		1.36E-01
+	HG-203	279.19	77.30	8.65E-02	1.10E-01	1.10E-01
+	BI-207	569.67	97.72	-3.11E-02	4.82E-02	4.82E-02
		1063.62	74.90	1.58E-02		1.05E-01
+	TL-208	583.14	* 30.22	1.33E+00	1.67E-01	3.16E-01
		860.37	* 4.48	3.50E-01		1.78E+00
		2614.66	* 35.85	8.55E-01		1.67E-01
+	BI-210M	262.00	45.00	5.87E-02	1.16E-01	1.16E-01
		300.00	23.00	3.62E-01		2.58E-01
+	PB-210	46.50	4.25	3.55E+00	2.41E+00	2.41E+00
+	PB-211	404.84	2.90	0.00E+00	1.84E+00	1.84E+00
		831.96	2.90	2.10E-01		2.55E+00
		727.17	* 11.80	7.45E-01		6.40E-01	6.40E-01
+	PB-212	1620.62	2.75	1.06E+00	2.27E-01	2.78E+00
		238.63	* 44.60	1.32E+00		2.27E-01
		300.09	* 3.41	1.40E+00		1.57E+00
+	BI-214	609.31	* 46.30	1.27E+00	2.18E-01	2.18E-01
		1120.29	* 15.10	1.10E+00		7.28E-01
		1764.49	* 15.80	1.45E+00		4.08E-01
		2204.22	* 4.98	1.83E+00		1.24E+00
		295.21	* 19.19	1.46E+00		1.99E-01	3.49E-01
+	PB-214	351.92	* 37.19	1.54E+00	1.99E-01	1.99E-01
		401.80	6.50	8.14E-02		7.96E-01	7.96E-01
+	RA-223	323.87	3.88	6.42E-01	1.32E+00	1.32E+00
+	RA-224	240.98	3.95	1.02E+01	2.73E+00	2.73E+00

Analysis Report for 1510064-09

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	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	RA-225	40.00		31.00	5.55E-01	1.81E+00	1.81E+00
+	RA-226	186.21	*	3.28	2.16E+00	2.58E+00	2.58E+00
+	TH-227	50.10		8.40	5.67E-01	6.49E-01	8.97E-01
		236.00		11.50	-4.61E+00		6.49E-01
		256.20		6.30	-2.00E-01		7.75E-01
+	AC-228	338.32	*	11.40	1.31E+00	4.07E-01	8.06E-01
		911.07	*	27.70	1.43E+00		4.07E-01
		969.11	*	16.60	1.50E+00		6.00E-01
+	TH-230	48.44		16.90	-5.00E-01	4.78E-01	4.78E-01
		62.85		4.60	1.87E+00		1.23E+00
		67.67		0.37	-9.68E+00		1.30E+01
+	PA-231	283.67		1.60	-1.64E+00	2.14E+00	3.24E+00
		302.67		2.30	7.03E-02		2.14E+00
+	TH-231	25.64		14.70	-2.96E+00	6.66E-01	1.42E+01
		84.21		6.40	5.77E-01		6.66E-01
+	PA-233	311.98		38.60	-1.69E-01	2.67E-01	2.67E-01
+	PA-234	131.20		20.40	8.42E-02	2.40E-01	2.40E-01
		733.99		8.80	6.31E-02		7.74E-01
		946.00		12.00	2.33E-01		6.19E-01
+	PA-234M	1001.03	*	0.92	3.93E+00	7.30E+00	7.30E+00
+	TH-234	63.29		3.80	2.25E+00	1.48E+00	1.48E+00
+	U-235	143.76		10.50	2.61E-01	4.67E-01	4.67E-01
		163.35		4.70	6.83E-01		1.07E+00
		205.31		4.70	8.89E-02		1.10E+00
+	NP-237	86.50	*	12.60	3.12E-01	3.94E-01	3.94E-01
+	NP-239	106.10		22.70	-5.09E+01	8.29E+02	8.29E+02
		228.18		10.70	-1.64E+02		2.04E+03
		277.60		14.10	1.40E+03		1.59E+03
+	AM-241	59.54		35.90	5.60E-02	1.47E-01	1.47E-01
+	AM-243	74.67		66.00	-2.43E-01	9.75E-02	9.75E-02
+	CM-243	209.75	*	3.29	2.11E+00	4.71E-01	2.08E+00
		228.14		10.60	-4.09E-02		5.09E-01
		277.60	*	14.00	2.74E-01		4.71E-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

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Analysis Report for 1510064-09

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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	7.12E-01	7.12E-01	2.04E-01	3.34E-01
NA-22	1274.54	99.94	9.24E-02	9.24E-02	3.36E-02	4.28E-02
NA-24	1368.53	99.99	2.64E+12	1.29E+12	3.31E+11	1.18E+12
	2754.09	99.86	1.29E+12		9.29E+10	4.81E+11
AL-26	1808.65	99.76	5.97E-02	5.97E-02	-4.24E-03	2.57E-02
+ K-40	1460.81	*	10.67	9.73E-01	1.96E+01	4.52E-01
@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26	1.00E+20
TI-44	67.88	94.40	5.09E-02	5.09E-02	-3.79E-02	2.48E-02
	78.34	96.00	7.36E-02		3.04E-01	3.61E-02
SC-46	889.25	99.98	7.87E-02	7.87E-02	-1.16E-03	3.62E-02
	1120.51	99.99	1.56E-01		2.30E-01	7.40E-02
V-48	983.52	99.98	2.53E-01	2.53E-01	-7.56E-02	1.17E-01
	1312.10	97.50	2.97E-01		1.83E-01	1.37E-01
CR-51	320.08	9.83	9.92E-01	9.92E-01	-3.04E-01	4.72E-01
+ MN-54	834.83	*	99.97	6.36E-02	6.06E-02	2.93E-02
CO-56	846.75	99.96	9.49E-02	9.49E-02	3.08E-02	4.44E-02
	1037.75	14.03	6.59E-01		-3.05E-01	3.04E-01
	1238.25	67.00	2.12E-01		1.31E-01	9.96E-02
	1771.40	15.51	4.17E-01		-1.70E-01	1.75E-01
	2598.48	16.90	2.20E-01		3.96E-02	7.81E-02
CO-57	122.06	85.51	5.73E-02	5.73E-02	1.49E-02	2.78E-02
	136.48	10.60	4.87E-01		2.18E-01	2.36E-01
CO-58	810.76	99.40	8.20E-02	8.20E-02	-8.62E-02	3.79E-02
FE-59	1099.22	56.50	2.09E-01	2.09E-01	-4.68E-02	9.65E-02
	1291.56	43.20	3.11E-01		1.40E-01	1.43E-01
CO-60	1173.22	100.00	9.00E-02	6.77E-02	1.89E-02	4.19E-02
	1332.49	100.00	6.77E-02		-8.72E-03	3.04E-02
ZN-65	1115.52	50.75	1.65E-01	1.65E-01	-4.57E-02	7.60E-02
+ GA-67	93.31	*	35.70	9.14E+01	1.19E+02	4.50E+01
	208.95	*	2.24	1.23E+03	1.25E+03	5.99E+02
	300.22	*	16.00	1.35E+02	1.20E+02	6.48E+01
SE-75	121.11	16.70	3.17E-01	9.42E-02	-1.73E-02	1.54E-01
	136.00	59.20	9.42E-02		-2.97E-02	4.58E-02
	264.65	59.80	9.93E-02		-3.49E-02	4.76E-02
	279.53	25.20	2.52E-01		-7.75E-02	1.21E-01
	400.65	11.40	5.07E-01		-3.34E-01	2.40E-01
RB-82	776.52	13.00	1.09E+00	1.09E+00	-2.50E-01	5.07E-01
RB-83	520.41	46.00	1.28E-01	1.28E-01	-1.25E-02	5.96E-02
	529.64	30.30	2.16E-01		1.89E-02	1.01E-01
	552.65	16.40	4.04E-01		2.41E-02	1.89E-01
KR-85	513.99	0.43	1.37E+01	1.37E+01	-9.12E+00	6.48E+00
SR-85	513.99	99.27	8.06E-02	8.06E-02	-5.36E-02	3.81E-02
Y-88	898.02	93.40	8.56E-02	6.19E-02	3.12E-02	3.96E-02
	1836.01	99.38	6.19E-02		-1.43E-02	2.59E-02
NB-93M	16.57	9.43	5.05E+03	5.05E+03	-6.09E+03	2.45E+03

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
NB-94	702.63	100.00	7.38E-02	6.67E-02	3.97E-02	3.49E-02
	871.10	100.00	6.67E-02		-1.44E-02	3.09E-02
NB-95	765.79	99.81	1.58E-01	1.58E-01	2.43E-02	7.53E-02
NB-95M	235.69	25.00	6.73E+01	6.73E+01	-4.79E+02	3.28E+01
ZR-95	724.18	43.70	2.45E-01	1.71E-01	-9.68E-03	1.16E-01
	756.72	55.30	1.71E-01		-1.33E-03	8.03E-02
MO-99	181.06	6.20	1.02E+03	6.85E+02	6.04E+02	4.92E+02
	739.58	12.80	6.85E+02		2.81E+02	3.22E+02
	778.00	4.50	1.82E+03		-7.19E+02	8.50E+02
RU-103	497.08	89.00	9.77E-02	9.77E-02	3.15E-02	4.59E-02
RU-106	621.84	9.80	6.24E-01	6.24E-01	-8.43E-02	2.92E-01
AG-108M	433.93	89.90	6.00E-02	6.00E-02	1.18E-02	2.84E-02
	614.37	90.40	7.22E-02		-1.06E-02	3.41E-02
	722.95	90.50	7.80E-02		-7.61E-03	3.67E-02
+ CD-109	88.03	*	1.39E+00	1.39E+00	1.10E+00	6.79E-01
AG-110M	657.75	93.14	7.74E-02	7.74E-02	7.94E-03	3.64E-02
	677.61	10.53	6.11E-01		7.89E-02	2.85E-01
	706.67	16.46	4.32E-01		8.79E-03	2.02E-01
	763.93	21.98	3.90E-01		8.22E-02	1.84E-01
	884.67	71.63	8.88E-02		-3.18E-03	4.06E-02
	1384.27	23.94	3.27E-01		2.35E-02	1.47E-01
CD-113M	263.70	0.02	2.20E+02	2.20E+02	-6.94E+01	1.06E+02
SN-113	255.12	1.93	3.09E+00	9.87E-02	9.86E-01	1.48E+00
	391.69	64.90	9.87E-02		1.13E-02	4.69E-02
TE123M	159.00	84.10	6.71E-02	6.71E-02	-1.36E-02	3.25E-02
SB-124	602.71	97.87	8.38E-02	8.38E-02	1.64E-02	3.93E-02
	645.85	7.26	1.23E+00		5.48E-01	5.79E-01
	722.78	11.10	8.80E-01		-8.58E-02	4.14E-01
	1691.02	49.00	1.96E-01		4.01E-02	8.69E-02
	I-125	35.49	6.49	5.52E+00	5.52E+00	4.40E+00	2.68E+00
SB-125	176.33	6.89	7.41E-01	1.88E-01	-2.08E-01	3.59E-01
	427.89	29.33	1.88E-01		4.36E-02	8.90E-02
	463.38	10.35	6.26E-01		8.21E-01	2.98E-01
	600.56	17.80	3.50E-01		7.13E-02	1.65E-01
	635.90	11.32	4.92E-01		-1.80E-01	2.29E-01
SB-126	414.70	83.30	3.05E-01	3.05E-01	3.20E-02	1.44E-01
	666.33	99.60	3.31E-01		7.40E-03	1.56E-01
	695.00	99.60	3.38E-01		7.07E-02	1.59E-01
	720.50	53.80	6.30E-01		5.50E-02	2.96E-01
+ SN-126	87.57	*	1.34E-01	1.34E-01	1.06E-01	6.54E-02
SB-127	473.00	25.00	3.27E+01	2.93E+01	3.91E+00	1.54E+01
	685.20	35.70	2.93E+01		1.05E+01	1.37E+01
	783.80	14.70	8.47E+01		1.47E+01	3.99E+01
I-129	29.78	57.00	1.15E+00	1.15E+00	-2.41E-01	5.60E-01
	33.60	13.20	2.50E+00		1.35E-01	1.21E+00
	39.58	7.52	2.08E+00		6.36E-01	1.01E+00
I-131	284.30	6.05	9.77E+00	6.91E-01	-4.95E+00	4.68E+00
	364.48	81.20	6.91E-01		-3.81E-02	3.28E-01
	636.97	7.26	8.64E+00		-2.94E-01	4.02E+00
	722.89	1.80	4.47E+01		-4.36E+00	2.10E+01
TE-132	49.72	13.10	2.37E+02	2.48E+01	1.50E+02	1.15E+02
	228.16	88.00	2.48E+01		-1.99E+00	1.20E+01
BA-133	81.00	33.00	1.22E-01	8.11E-02	5.10E-02	5.91E-02

Analysis Report for 1510064-09

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
BA-133	302.84	17.80	2.78E-01	8.11E-02	9.13E-03	1.33E-01
	356.01	60.00	8.11E-02		-3.27E-02	3.85E-02
I-133	529.87	86.30	3.90E+08	3.90E+08	4.08E+07	1.83E+08
XE-133	81.00	38.00	4.40E+00	4.40E+00	1.84E+00	2.13E+00
CS-134	563.23	8.38	7.02E-01	8.43E-02	1.14E-01	3.30E-01
	569.32	15.43	3.12E-01		-2.02E-01	1.45E-01
	604.70	97.60	8.43E-02		1.57E-02	4.02E-02
	795.84	85.40	9.10E-02		2.64E-02	4.28E-02
	801.93	8.73	8.33E-01		1.80E-01	3.89E-01
CS-135	268.24	16.00	3.41E-01	3.41E-01	2.70E-02	1.64E-01
@ I-135	1131.51	22.50	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	1260.41	28.60	1.00E+26		1.00E+26	1.00E+20
@	1678.03	9.54	1.00E+26		1.00E+26	1.00E+20
CS-136	153.22	7.46	2.95E+00	3.15E-01	6.00E-01	1.43E+00
	163.89	4.61	4.82E+00		4.22E+00	2.34E+00
	176.55	13.56	1.67E+00		3.66E-01	8.10E-01
	273.65	12.66	1.66E+00		-2.64E+00	7.95E-01
	340.57	48.50	5.61E-01		-5.65E-01	2.70E-01
	818.50	99.70	3.15E-01		-2.68E-02	1.47E-01
	1048.07	79.60	4.41E-01		2.16E-01	2.05E-01
	1235.34	19.70	2.46E+00		8.47E-01	1.16E+00
CS-137	661.65	85.12	8.05E-02	8.05E-02	2.59E-02	3.79E-02
LA-138	788.74	34.00	2.20E-01	9.94E-02	9.11E-04	1.03E-01
	1435.80	66.00	9.94E-02		-2.76E-03	4.42E-02
CE-139	165.85	80.35	6.99E-02	6.99E-02	-7.20E-03	3.39E-02
BA-140	162.64	6.70	3.47E+00	9.09E-01	2.21E+00	1.68E+00
	304.84	4.50	4.92E+00		2.68E-01	2.34E+00
	423.70	3.20	7.08E+00		-3.92E+00	3.34E+00
	437.55	2.00	1.25E+01		-2.35E+00	5.90E+00
	537.32	25.00	9.09E-01		-3.34E-01	4.23E-01
LA-140	328.77	20.50	1.13E+00	3.18E-01	-1.78E-01	5.37E-01
	487.03	45.50	5.50E-01		1.47E-01	2.59E-01
	815.85	23.50	1.37E+00		2.40E-01	6.41E-01
	1596.49	95.49	3.18E-01		6.41E-02	1.40E-01
CE-141	145.44	48.40	1.88E-01	1.88E-01	1.63E-01	9.14E-02
CE-143	57.36	11.80	6.46E+05	2.77E+05	-3.90E+05	3.12E+05
	293.26	42.00	2.77E+05		1.17E+05	1.34E+05
	664.55	5.20	1.92E+06		2.50E+05	9.03E+05
CE-144	133.54	10.80	4.70E-01	4.70E-01	-1.31E-01	2.28E-01
PM-144	476.78	42.00	1.29E-01	6.42E-02	3.70E-02	6.06E-02
	618.01	98.60	6.42E-02		-8.66E-03	3.01E-02
	696.49	99.49	7.51E-02		1.11E-02	3.54E-02
PM-145	36.85	21.70	9.67E-01	4.97E-01	-2.19E-01	4.70E-01
	37.36	39.70	4.97E-01		-1.13E-01	2.41E-01
	42.30	15.10	8.20E-01		-5.38E-01	3.99E-01
	72.40	2.31	2.01E+00		-2.75E+00	9.76E-01
PM-146	453.90	39.94	1.21E-01	1.21E-01	-8.34E-03	5.67E-02
	735.90	14.01	4.86E-01		-2.15E-01	2.28E-01
	747.13	13.10	5.23E-01		1.20E-01	2.45E-01
ND-147	91.11	28.90	1.27E+00	1.27E+00	-1.43E+00	6.25E-01
	531.02	13.10	2.42E+00		8.59E-02	1.13E+00
PM-149	285.90	3.10	1.20E+04	1.20E+04	6.57E+03	5.77E+03
EU-152	121.78	20.50	2.23E-01	2.23E-01	5.81E-02	1.08E-01

Analysis Report for 1510064-09

CP2211S11-12

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	9.70E-01	2.23E-01	-2.05E+00	4.67E-01
	344.27	19.13	2.69E-01		7.56E-02	1.28E-01
	778.89	9.20	7.60E-01		-5.23E-02	3.56E-01
	964.01	10.40	8.92E-01		-2.46E+00	4.20E-01
	1085.78	7.22	1.08E+00		1.13E-01	4.99E-01
	1112.02	9.60	8.57E-01		-4.55E-02	3.98E-01
	1407.95	14.94	4.76E-01		1.97E-03	2.14E-01
GD-153	97.43	31.30	1.64E-01	1.64E-01	7.75E-02	8.01E-02
	103.18	22.20	2.21E-01		-9.69E-02	1.08E-01
EU-154	123.07	40.50	1.15E-01	1.15E-01	6.90E-02	5.59E-02
	723.30	19.70	3.61E-01		-3.52E-02	1.69E-01
	873.19	11.50	5.94E-01		-2.02E-01	2.76E-01
	996.32	10.30	7.26E-01		-1.04E-03	3.37E-01
	1004.76	17.90	4.28E-01		7.99E-02	1.99E-01
	1274.45	35.50	2.56E-01		9.33E-02	1.19E-01
EU-155	86.50	30.90	1.93E-01	1.93E-01	-1.78E-01	9.44E-02
	105.30	20.70	2.25E-01		5.09E-02	1.10E-01
EU-156	811.77	10.40	2.12E+00	2.12E+00	-2.09E+00	9.79E-01
	1153.47	7.20	4.07E+00		1.85E+00	1.88E+00
	1230.71	8.90	3.99E+00		1.26E+00	1.87E+00
HO-166M	184.41	72.60	8.24E-02	8.24E-02	-3.77E-02	4.01E-02
	280.45	29.60	1.83E-01		-5.61E-02	8.77E-02
	410.94	11.10	5.13E-01		1.47E-01	2.44E-01
	711.69	54.10	1.24E-01		-1.66E-02	5.84E-02
TM-171	66.72	0.14	3.61E+01	3.61E+01	1.37E+01	1.76E+01
HF-172	81.75	4.52	8.76E-01	4.21E-01	-1.31E+00	4.24E-01
	125.81	11.30	4.21E-01		-3.44E-01	2.04E-01
LU-172	181.53	20.60	4.59E+00	2.63E+00	1.80E+00	2.22E+00
	810.06	16.63	6.89E+00		-7.24E+00	3.19E+00
	912.12	15.25	1.74E+01		4.43E+01	8.37E+00
	1093.66	62.50	2.63E+00		9.27E-01	1.23E+00
LU-173	100.72	5.24	9.07E-01	2.78E-01	9.38E-02	4.41E-01
	272.11	21.20	2.78E-01		2.83E-01	1.34E-01
HF-175	343.40	84.00	8.29E-02	8.29E-02	-6.46E-03	3.95E-02
LU-176	88.34	13.30	4.56E-01	5.26E-02	3.59E-01	2.24E-01
	201.83	86.00	6.30E-02		2.65E-02	3.05E-02
	306.78	94.00	5.26E-02		-1.20E-02	2.51E-02
TA-182	67.75	41.20	1.39E-01	1.39E-01	-1.03E-01	6.73E-02
	1121.30	34.90	4.08E-01		4.19E-01	1.94E-01
	1189.05	16.23	7.21E-01		3.36E-01	3.38E-01
	1221.41	26.98	4.01E-01		4.53E-02	1.86E-01
	1231.02	11.44	1.02E+00		1.86E-01	4.75E-01
IR-192	308.46	29.68	2.23E-01	1.36E-01	6.73E-02	1.07E-01
	468.07	48.10	1.36E-01		-8.79E-03	6.37E-02
HG-203	279.19	77.30	1.10E-01	1.10E-01	8.65E-02	5.31E-02
BI-207	569.67	97.72	4.82E-02	4.82E-02	-3.11E-02	2.23E-02
+ TL-208	1063.62	74.90	1.05E-01	1.67E-01	1.58E-02	4.86E-02
	583.14	* 30.22	3.16E-01		1.33E+00	1.52E-01
	860.37	* 4.48	1.78E+00		3.50E-01	8.36E-01
BI-210M	2614.66	* 35.85	1.67E-01	1.16E-01	8.55E-01	7.15E-02
	262.00	45.00	1.16E-01		5.87E-02	5.55E-02
PB-210	300.00	23.00	2.58E-01	2.41E+00	3.62E-01	1.24E-01
	46.50	4.25	2.41E+00		3.55E+00	1.18E+00

Analysis Report for 1510064-09

CP2211S11-12

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	1.84E+00	1.84E+00	0.00E+00	8.73E-01
	831.96	2.90	2.55E+00		2.10E-01	1.19E+00
+ BI-212	727.17 *	11.80	6.40E-01	6.40E-01	7.45E-01	3.02E-01
	1620.62	2.75	2.78E+00		1.06E+00	1.25E+00
+ PB-212	238.63 *	44.60	2.27E-01	2.27E-01	1.32E+00	1.11E-01
	300.09 *	3.41	1.57E+00		1.40E+00	7.54E-01
+ BI-214	609.31 *	46.30	2.18E-01	2.18E-01	1.27E+00	1.05E-01
	1120.29 *	15.10	7.28E-01		1.10E+00	3.44E-01
	1764.49 *	15.80	4.08E-01		1.45E+00	1.78E-01
	2204.22 *	4.98	1.24E+00		1.83E+00	5.30E-01
+ PB-214	295.21 *	19.19	3.49E-01	1.99E-01	1.46E+00	1.69E-01
	351.92 *	37.19	1.99E-01		1.54E+00	9.61E-02
RN-219	401.80	6.50	7.96E-01	7.96E-01	8.14E-02	3.77E-01
RA-223	323.87	3.88	1.32E+00	1.32E+00	6.42E-01	6.31E-01
RA-224	240.98	3.95	2.73E+00	2.73E+00	1.02E+01	1.34E+00
RA-225	40.00	31.00	1.81E+00	1.81E+00	5.55E-01	8.81E-01
+ RA-226	186.21 *	3.28	2.58E+00	2.58E+00	2.16E+00	1.26E+00
TH-227	50.10	8.40	8.97E-01	6.49E-01	5.67E-01	4.36E-01
	236.00	11.50	6.49E-01		-4.61E+00	3.16E-01
	256.20	6.30	7.75E-01		-2.00E-01	3.72E-01
+ AC-228	338.32 *	11.40	8.06E-01	4.07E-01	1.31E+00	3.92E-01
	911.07 *	27.70	4.07E-01		1.43E+00	1.95E-01
	969.11 *	16.60	6.00E-01		1.50E+00	2.84E-01
TH-230	48.44	16.90	4.78E-01	4.78E-01	-5.00E-01	2.32E-01
	62.85	4.60	1.23E+00		1.87E+00	6.01E-01
	67.67	0.37	1.30E+01		-9.68E+00	6.33E+00
PA-231	283.67	1.60	3.24E+00	2.14E+00	-1.64E+00	1.55E+00
	302.67	2.30	2.14E+00		7.03E-02	1.02E+00
TH-231	25.64	14.70	1.42E+01	6.66E-01	-2.96E+00	6.86E+00
	84.21	6.40	6.66E-01		5.77E-01	3.24E-01
PA-233	311.98	38.60	2.67E-01	2.67E-01	-1.69E-01	1.28E-01
PA-234	131.20	20.40	2.40E-01	2.40E-01	8.42E-02	1.17E-01
	733.99	8.80	7.74E-01		6.31E-02	3.63E-01
	946.00	12.00	6.19E-01		2.33E-01	2.88E-01
+ PA-234M	1001.03 *	0.92	7.30E+00	7.30E+00	3.93E+00	3.35E+00
TH-234	63.29	3.80	1.48E+00	1.48E+00	2.25E+00	7.22E-01
U-235	143.76	10.50	4.67E-01	4.67E-01	2.61E-01	2.27E-01
	163.35	4.70	1.07E+00		6.83E-01	5.21E-01
	205.31	4.70	1.10E+00		8.89E-02	5.33E-01
+ NP-237	86.50 *	12.60	3.94E-01	3.94E-01	3.12E-01	1.92E-01
NP-239	106.10	22.70	8.29E+02	8.29E+02	-5.09E+01	4.04E+02
	228.18	10.70	2.04E+03		-1.64E+02	9.85E+02
	277.60	14.10	1.59E+03		1.40E+03	7.63E+02
AM-241	59.54	35.90	1.47E-01	1.47E-01	5.60E-02	7.12E-02
AM-243	74.67	66.00	9.75E-02	9.75E-02	-2.43E-01	4.78E-02
+ CM-243	209.75 *	3.29	2.08E+00	4.71E-01	2.11E+00	1.01E+00
	228.14	10.60	5.09E-01		-4.09E-02	2.46E-01
	277.60 *	14.00	4.71E-01		2.74E-01	2.28E-01

Analysis Report for 1510064-09
CP2211S11-12

-
- + = 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: CP2211S11-12

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	655	146	120	132	128	110	106	106	152	106	102	98	115	81	81	112	89	80	60	68	56	73	75	50	65	112	63	48	54	114	42	34	34	34	34	32	25	22	26	30	18	34	34	23	121	22	
	0	1261	112	125	116	131	156	111	142	190	117	192	100	100	78	99	84	64	71	88	69	72	59	184	60	67	81	43	44	48	160	43	38	29	32	35	27	27	34	27	27	29	27	17	118	27	22	20
	0	1141	139	112	146	158	137	123	147	421	93	146	115	70	82	74	81	84	63	76	86	53	68	125	60	68	44	54	37	77	33	33	42	27	40	34	40	43	21	43	31	39	34	24	78	17	28	23
	0	444	141	125	131	170	118	127	125	234	162	157	95	94	93	84	75	70	70	74	68	69	71	67	61	58	42	50	56	35	30	35	40	43	31	40	43	21	40	29	29	32	29	26	28	18	24	
	4	723	132	117	152	137	106	116	135	528	141	270	81	96	75	76	86	78	65	68	72	72	72	85	76	50	44	63	45	51	42	43	40	35	40	35	40	35	27	40	33	22	24	27	28	25	22	
	13	1786	104	125	117	172	121	110	168	419	97	184	76	100	74	75	75	55	70	66	63	53	50	59	52	52	48	48	43	35	43	43	75	55	43	42	42	42	27	34	28	29	26	33	20	24		
	10	253	118	118	138	214	105	198	141	118	208	93	90	73	75	79	78	94	80	77	48	68	68	55	66	55	50	56	25	40	43	50	41	49	253	25	28	28	27	27	26	135	28	24				
	200	147	126	127	143	128	82	182	121	118	82	90	83	81	65	90	88	99	77	58	80	71	63	58	60	76	67	65	47	118	37	40	40	39	37	38	145	29	25	29	34	25	26	420	33	19		

369: 27 21 17 30 22 22 18 31

Sample Title: CP2211S11-12

377:	18	28	15	22	24	25	15	24
385:	17	18	21	22	23	21	16	29
393:	29	29	24	23	23	22	18	16
401:	20	23	21	29	23	23	19	23
409:	34	30	19	27	19	21	26	19
417:	22	15	22	22	26	16	13	15
425:	22	24	21	24	19	21	21	19
433:	22	22	23	20	21	15	26	23
441:	24	23	17	15	21	28	19	14
449:	26	17	15	13	14	17	15	18
457:	9	23	12	10	14	40	49	21
465:	12	12	14	17	20	18	22	12
473:	14	17	17	16	10	28	12	9
481:	17	20	16	20	18	11	18	20
489:	23	14	13	21	13	12	19	15
497:	14	16	19	12	17	21	9	15
505:	17	15	9	15	32	59	71	41
513:	17	14	13	15	13	9	17	16
521:	8	10	9	15	15	8	13	15
529:	13	19	13	15	16	17	14	16
537:	13	15	5	20	10	15	14	13
545:	13	15	15	10	12	15	15	15
553:	14	11	17	13	16	21	24	13
561:	16	21	16	13	15	20	5	11
569:	12	11	13	11	15	11	11	15
577:	22	14	13	17	20	81	170	88
585:	17	8	8	14	9	13	15	7
593:	11	11	10	13	10	15	8	12
601:	8	18	13	13	7	7	10	79
609:	261	151	19	13	14	12	8	10
617:	17	11	16	5	10	13	9	11
625:	7	16	7	11	14	13	13	11
633:	9	9	9	4	10	9	10	10
641:	9	7	13	8	13	11	13	16
649:	10	10	10	20	7	12	17	5
657:	15	11	9	18	12	16	11	14
665:	15	8	8	13	20	17	9	10
673:	10	8	12	9	9	10	9	8
681:	9	6	10	11	15	11	14	10
689:	8	10	11	12	13	15	16	12
697:	10	9	15	14	19	18	16	6
705:	9	10	11	9	14	17	9	7
713:	12	10	16	10	11	14	16	11
721:	7	14	10	11	13	18	33	35
729:	6	10	14	12	8	10	9	13
737:	10	11	13	15	12	9	7	11
745:	7	5	13	10	11	16	9	11
753:	10	9	14	18	10	10	5	13
761:	10	11	15	16	13	10	23	31
769:	21	7	11	13	16	10	3	6
777:	9	7	13	10	18	9	18	4
785:	11	23	6	11	10	9	12	12
793:	10	18	24	13	7	7	4	6

801: 12 7 14 15 13 14 13 6

Sample Title: CP2211S11-12

Channel	1	2	3	4	5	6	7	8
809:	8	4	8	8	5	11	14	8
817:	9	10	10	6	12	11	13	4
825:	9	8	5	4	6	15	6	10
833:	9	18	9	19	3	6	16	17
841:	11	6	11	13	12	7	10	6
849:	12	9	7	17	6	11	10	9
857:	4	13	9	18	22	5	10	10
865:	12	6	10	8	9	7	8	4
873:	8	10	9	10	8	14	4	9
881:	10	3	5	7	6	6	3	5
889:	6	8	11	6	8	5	7	10
897:	11	5	8	1	9	12	8	16
905:	10	5	9	13	11	61	111	46
913:	10	8	2	6	7	12	3	4
921:	7	12	9	6	6	10	6	7
929:	5	6	6	6	16	21	12	11
937:	12	4	5	3	10	8	6	7
945:	9	10	4	14	9	5	3	6
953:	5	9	3	9	7	9	5	4
961:	9	11	9	25	18	8	11	44
969:	62	30	4	7	4	7	11	10
977:	2	11	11	9	7	12	7	10
985:	6	4	10	7	7	4	7	7
993:	6	8	11	8	5	7	9	13
1001:	10	11	2	9	10	5	9	6
1009:	7	9	7	6	8	6	8	10
1017:	9	12	3	5	11	8	7	7
1025:	5	9	4	8	7	7	9	9
1033:	9	9	6	5	4	9	6	8
1041:	9	9	3	8	3	11	7	7
1049:	12	6	11	7	4	8	5	11
1057:	2	6	9	9	8	6	10	6
1065:	6	9	7	6	7	6	3	9
1073:	8	4	6	14	6	10	12	1
1081:	3	2	12	7	10	2	9	9
1089:	8	7	5	6	8	18	12	11
1097:	7	6	11	2	5	6	9	12
1105:	4	4	6	9	12	7	11	8
1113:	6	4	7	7	10	6	26	42
1121:	27	9	9	3	10	10	5	9
1129:	5	13	6	12	5	8	9	7
1137:	5	10	7	6	8	9	3	6
1145:	12	10	9	2	3	2	7	11
1153:	3	11	9	7	8	6	5	11
1161:	4	6	11	12	9	7	5	7
1169:	5	4	11	4	16	14	6	5
1177:	9	8	7	7	3	8	13	2
1185:	11	8	9	11	9	18	8	10
1193:	10	7	15	6	11	11	10	12
1201:	6	9	12	7	6	14	5	11
1209:	12	10	8	11	6	6	13	10
1217:	8	11	6	10	10	7	7	8
1225:	9	5	10	9	12	9	7	12

1233: 9 10 7 12 18 18 15 9

Sample Title: CP2211S11-12

Channel	1	2	3	4	5	6	7	8	9
1241:	8	9	6	10	7	8	13	9	
1249:	6	11	9	7	13	4	6	4	
1257:	7	4	7	7	9	10	6	4	
1265:	5	6	3	4	7	4	8	9	
1273:	9	4	8	12	4	4	8	9	
1281:	8	7	3	6	4	3	4	4	
1289:	11	4	8	2	14	5	4	7	
1297:	4	1	11	9	5	6	5	4	
1305:	9	7	2	6	6	6	6	9	
1313:	6	3	9	3	3	4	3	7	
1321:	5	4	1	4	4	3	5	5	
1329:	1	2	7	5	4	4	3	4	
1337:	3	5	3	3	5	6	5	2	
1345:	9	1	3	2	1	6	3	6	
1353:	4	5	3	3	2	3	3	3	
1361:	1	8	3	2	7	4	3	1	
1369:	1	2	7	3	4	3	6	9	
1377:	15	17	8	4	3	3	7	3	
1385:	4	5	4	3	3	3	3	3	
1393:	2	5	5	1	3	5	3	4	
1401:	5	8	4	1	2	5	8	5	
1409:	5	1	1	3	1	1	6	2	
1417:	2	3	8	1	3	2	1	3	
1425:	3	2	6	2	4	5	4	4	
1433:	6	2	2	1	5	2	4	1	
1441:	2	3	1	0	2	3	2	4	
1449:	0	1	1	1	5	2	10	2	
1457:	1	27	108	317	263	77	8	0	
1465:	3	3	1	1	0	2	2	3	
1473:	2	1	2	1	2	7	3	2	
1481:	3	3	5	2	1	1	0	2	
1489:	2	0	2	0	0	3	6	2	
1497:	5	2	0	2	5	2	0	0	
1505:	1	1	4	8	6	5	3	1	
1513:	1	4	3	2	3	4	2	1	
1521:	3	3	2	1	1	3	1	5	
1529:	0	3	0	5	0	1	0	2	
1537:	1	1	4	2	2	1	3	0	
1545:	3	3	2	1	4	3	6	2	
1553:	3	1	4	2	1	1	0	1	
1561:	4	1	3	2	3	0	2	2	
1569:	4	1	1	2	1	0	4	3	
1577:	0	3	1	3	4	2	2	2	
1585:	4	6	5	3	4	2	3	3	
1593:	2	4	1	1	2	2	3	1	
1601:	2	0	2	1	2	2	5	3	
1609:	0	2	0	0	1	0	1	1	
1617:	2	1	5	5	4	3	2	3	
1625:	4	2	1	4	7	2	7	0	
1633:	0	1	0	1	2	2	1	2	
1641:	2	1	0	1	3	2	2	1	
1649:	1	0	1	1	3	0	1	2	
1657:	1	1	2	2	2	0	1	2	

1665: 2 1 0 1 0 1 1 1

Sample Title: CP2211S11-12

Channel	1	2	3	4	5	6	7	8
1673:	3	2	0	1	1	0	3	2
1681:	1	0	2	3	1	4	3	2
1689:	2	1	1	3	4	0	2	1
1697:	3	1	2	0	1	0	1	0
1705:	0	1	0	1	1	0	1	2
1713:	0	1	0	0	1	2	2	2
1721:	1	0	1	3	0	0	1	11
1729:	6	4	1	2	1	0	1	0
1737:	0	2	2	0	2	3	1	0
1745:	2	0	4	2	2	2	0	2
1753:	0	2	2	0	1	1	1	2
1761:	3	5	21	35	13	7	0	1
1769:	2	2	0	1	1	1	1	1
1777:	1	1	0	0	1	0	0	1
1785:	2	1	1	1	3	2	0	1
1793:	2	0	1	1	1	1	4	2
1801:	0	0	3	1	3	2	1	1
1809:	1	1	2	1	2	2	2	0
1817:	0	0	2	0	2	2	2	2
1825:	0	1	1	1	3	0	1	0
1833:	0	0	0	0	2	2	4	0
1841:	3	2	0	1	1	1	7	1
1849:	0	0	0	3	0	1	1	0
1857:	0	1	1	2	2	0	1	2
1865:	3	0	0	2	2	2	0	2
1873:	1	1	2	2	2	0	2	0
1881:	0	2	1	3	1	0	1	4
1889:	2	3	1	1	4	0	1	1
1897:	0	0	2	1	0	1	2	0
1905:	0	3	0	2	0	0	0	1
1913:	1	1	0	2	2	1	0	2
1921:	0	0	3	1	0	0	0	1
1929:	2	2	0	1	0	4	1	1
1937:	1	0	1	0	0	0	0	0
1945:	2	3	1	0	3	1	0	2
1953:	4	5	1	1	2	0	1	0
1961:	0	0	0	2	2	1	4	1
1969:	3	3	0	0	1	2	1	0
1977:	0	3	3	0	0	0	1	1
1985:	2	0	1	1	0	4	2	2
1993:	2	0	1	1	1	1	0	0
2001:	0	1	2	1	3	0	1	2
2009:	1	2	2	0	2	0	3	2
2017:	1	0	0	0	0	0	0	0
2025:	1	1	1	2	0	0	3	0
2033:	1	1	1	2	0	1	0	0
2041:	0	1	1	0	2	1	0	0
2049:	1	1	0	0	3	1	0	2
2057:	3	3	2	1	1	2	0	1
2065:	1	0	1	1	1	2	5	2
2073:	1	1	0	0	0	0	0	1
2081:	0	0	1	1	0	0	0	2
2089:	2	0	3	1	0	1	2	0

2097: 1 0 3 6 4 6 6 4

Sample Title: CP2211S11-12

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

2529: 0 0 0 1 2 0 0 0

Sample Title: CP2211S11-12

Channel	1	0	0	1	1	1	0	0
2537:	1	0	0	1	1	1	0	0
2545:	1	0	0	0	2	1	0	0
2553:	0	1	0	1	0	0	0	0
2561:	0	0	0	2	1	0	0	0
2569:	0	0	0	1	0	0	0	0
2577:	0	1	2	0	1	1	0	0
2585:	0	0	0	0	1	0	0	1
2593:	0	1	0	1	0	0	0	0
2601:	0	0	0	0	0	0	1	2
2609:	0	1	7	16	31	37	13	4
2617:	1	0	0	0	0	0	0	0
2625:	0	1	0	0	0	0	1	0
2633:	0	1	1	0	0	1	0	0
2641:	0	0	0	0	1	0	0	0
2649:	0	1	0	0	0	0	0	0
2657:	0	1	1	1	0	0	1	1
2665:	0	1	0	0	1	0	1	0
2673:	2	1	0	1	1	0	0	1
2681:	2	1	0	0	0	0	0	0
2689:	0	1	0	0	0	0	1	0
2697:	0	2	0	1	2	1	0	0
2705:	0	1	0	0	0	0	0	0
2713:	0	1	0	1	1	0	0	0
2721:	0	0	0	1	1	0	0	0
2729:	1	0	1	1	0	0	0	0
2737:	0	1	0	0	1	0	0	0
2745:	0	0	0	0	0	1	1	0
2753:	1	0	0	0	0	0	0	1
2761:	0	0	0	0	0	0	2	0
2769:	0	0	0	0	0	2	1	0
2777:	1	0	0	0	0	0	0	1
2785:	0	1	0	0	0	0	0	0
2793:	0	0	0	1	1	0	0	0
2801:	0	0	0	1	1	1	0	1
2809:	1	0	0	0	0	0	1	0
2817:	0	0	0	0	1	0	0	1
2825:	0	0	0	1	0	0	0	0
2833:	0	0	0	0	0	0	0	0
2841:	0	0	0	1	0	0	0	2
2849:	0	2	0	0	0	1	0	0
2857:	0	1	0	0	0	0	0	1
2865:	0	0	0	1	0	0	0	1
2873:	0	1	1	0	0	0	0	0
2881:	1	1	0	1	0	1	0	1
2889:	0	0	0	0	0	0	0	0
2897:	0	0	0	1	0	0	0	1
2905:	0	0	0	0	0	0	0	0
2913:	0	0	0	2	0	1	0	2
2921:	1	1	0	1	0	1	0	0
2929:	1	0	0	0	0	0	0	1
2937:	1	0	0	0	0	0	0	0
2945:	0	0	1	0	0	1	0	0
2953:	0	0	0	1	0	1	0	0

2961: 0 0 1 0 0 0 0 0

Sample Title: CP2211S11-12

Channel	1	2	3	4	5	6	7	8
2969:	0	0	0	0	0	0	0	1
2977:	0	0	1	0	0	0	0	0
2985:	0	0	0	1	0	0	0	0
2993:	0	0	0	1	1	0	0	1
3001:	0	0	0	0	0	0	0	0
3009:	0	0	1	0	0	1	0	0
3017:	0	0	0	0	0	0	1	0
3025:	0	0	0	0	0	0	0	0
3033:	0	0	1	0	1	0	0	0
3041:	0	0	0	0	0	0	0	0
3049:	0	2	0	0	0	0	0	1
3057:	0	0	1	1	0	0	0	1
3065:	0	0	1	0	0	0	0	0
3073:	0	1	1	0	0	0	0	0
3081:	0	0	0	0	0	1	0	1
3089:	0	0	0	0	0	0	0	0
3097:	0	0	0	0	0	1	0	0
3105:	0	1	0	1	0	0	0	0
3113:	0	0	0	0	0	0	0	0
3121:	0	0	0	1	1	0	0	0
3129:	0	1	0	1	0	0	0	0
3137:	0	0	0	0	1	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	1	0	0	0
3169:	0	0	0	0	0	1	0	0
3177:	0	0	0	0	0	0	0	0
3185:	0	0	0	0	0	0	0	0
3193:	0	0	0	1	0	0	0	0
3201:	0	0	0	0	0	0	1	0
3209:	0	0	0	0	0	0	1	0
3217:	2	0	0	0	0	0	1	0
3225:	1	1	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	1	0	1
3257:	0	0	1	0	0	0	0	0
3265:	0	0	0	1	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	0	0	0	0	0	1
3297:	0	0	0	0	0	1	0	0
3305:	1	0	0	0	0	0	0	0
3313:	0	0	0	0	1	0	0	0
3321:	0	0	1	0	1	1	0	0
3329:	0	0	0	0	1	0	0	0
3337:	0	1	0	0	0	1	0	0
3345:	0	0	0	1	0	0	0	0
3353:	0	1	1	0	0	0	0	0
3361:	1	0	1	0	0	0	0	0
3369:	3	0	1	0	0	1	0	0
3377:	0	0	0	0	0	0	0	0
3385:	0	0	0	2	0	0	0	0

3393: 0 0 0 1 0 0 0 0

Sample Title: CP2211S11-12

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

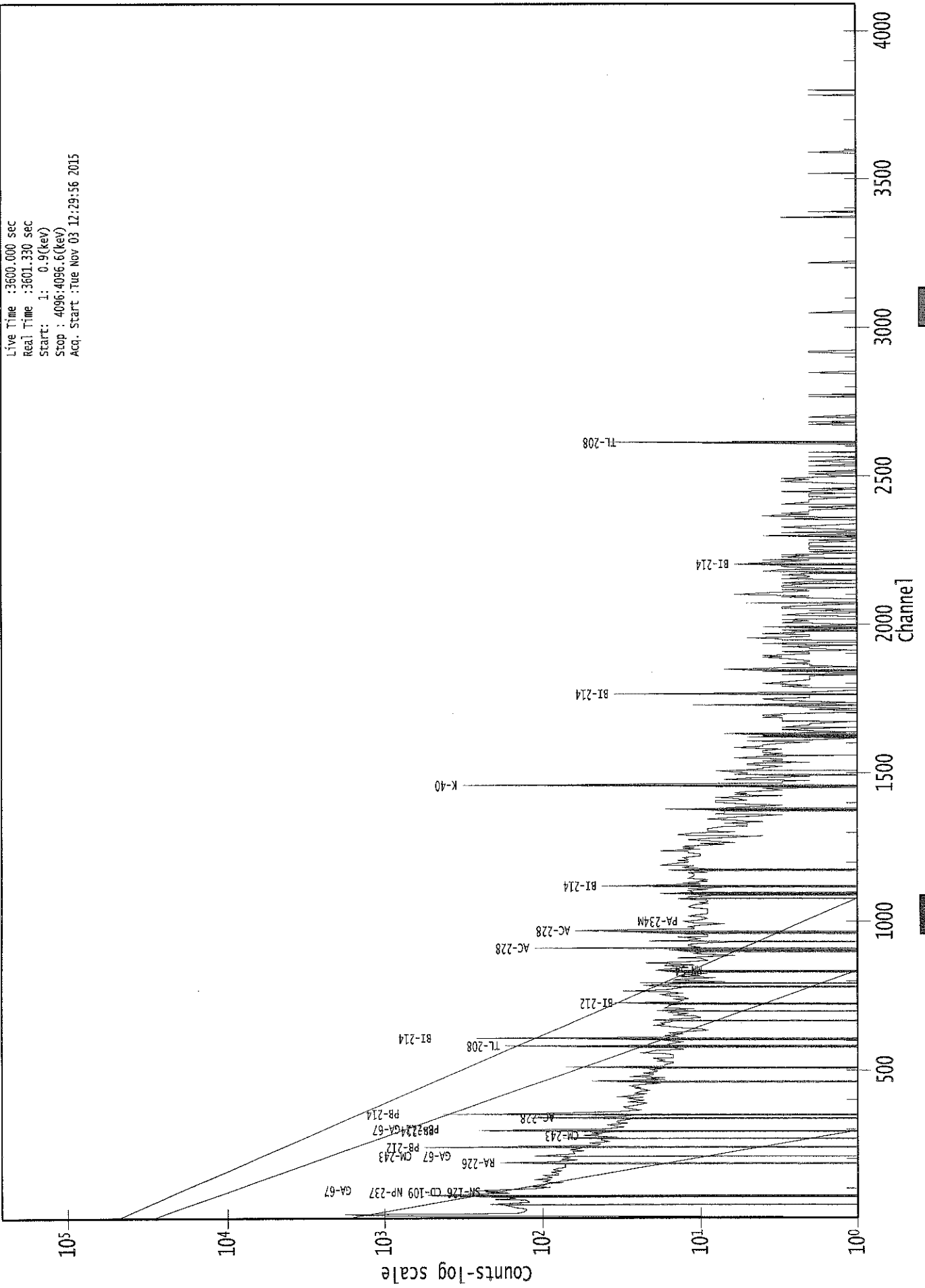
3825: 1 0 0 0 1 0 0 0

Sample Title: CP2211S11-12

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	1	0	0	0	0	0
3889:	0	0	1	0	0	0	0	0
3897:	1	0	0	0	0	0	0	1
3905:	0	0	0	0	0	0	0	0
3913:	0	0	1	0	0	0	0	0
3921:	0	0	0	1	0	0	0	0
3929:	1	1	0	0	0	0	0	0
3937:	0	0	0	0	0	0	0	1
3945:	0	0	0	0	0	1	0	0
3953:	0	0	0	1	0	0	0	0
3961:	0	0	0	0	0	0	0	0
3969:	0	0	0	0	1	0	0	0
3977:	0	0	0	0	0	0	0	0
3985:	0	0	0	0	0	0	0	0
3993:	0	0	0	0	0	0	0	0
4001:	0	0	0	0	0	0	0	0
4009:	0	0	0	0	0	0	0	0
4017:	0	0	0	0	1	0	1	0
4025:	0	0	0	0	0	0	0	0
4033:	0	0	0	0	0	0	0	1
4041:	0	1	0	0	0	0	0	0
4049:	0	0	0	0	0	0	0	0
4057:	1	0	1	0	0	0	0	0
4065:	0	0	0	0	0	1	0	0
4073:	0	0	0	0	0	0	0	0
4081:	0	0	0	1	0	0	1	0
4089:	0	1	0	0	1	1	0	0

0000029030.CNF

Live Time :3600.000 sec
Real Time :3601.330 sec
Start : 1: 0.9(kev)
Stop : 4096.4096.6(kev)
Acq. Start :Tue Nov 03 12:29:56 2015



ROI Type: 2
ROI Type: 1

KB
11/3/15Analysis Report for 1510064-10
CP2211S13-14

GAMMA SPECTRUM ANALYSIS

Sample Identification : 1510064-10
Sample Description : CP2211S13-14
Sample Type : SOIL

Sample Size : 6.014E+02 grams
Facility : Countroom

Sample Taken On : 10/6/2015 7:36:42AM
Acquisition Started : 11/3/2015 12:30:08PM

Procedure : GAS-1402 pCi
Operator : Administrator
Detector Name : GE3
Geometry : GAS-1402
Live Time : 3600.0 seconds
Real Time : 3618.6 seconds

Dead Time : 0.52 %

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 : 29031

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
11/3/15

Analysis Report for 1510064-10
CP2211S13-14

PEAK LOCATE REPORT

Peak Locate Performed on : 11/3/2015 1:30:30PM
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	46.44	46.68	0.0000	0.00
2	63.02	63.24	0.0000	0.00
3	76.24	76.46	0.0000	0.00
4	86.88	87.09	0.0000	0.00
5	185.97	186.12	0.0000	0.00
6	209.55	209.69	0.0000	0.00
7	238.84	238.97	0.0000	0.00
8	241.73	241.86	0.0000	0.00
9	270.57	270.69	0.0000	0.00
10	295.43	295.53	0.0000	0.00
11	300.80	300.90	0.0000	0.00
12	338.74	338.82	0.0000	0.00
13	341.75	341.83	0.0000	0.00
14	352.09	352.16	0.0000	0.00
15	409.80	409.84	0.0000	0.00
16	463.24	463.25	0.0000	0.00
17	511.00	511.00	0.0000	0.00
18	583.53	583.48	0.0000	0.00
19	597.98	597.92	0.0000	0.00
20	602.63	602.58	0.0000	0.00
21	609.62	609.56	0.0000	0.00
22	725.85	725.74	0.0000	0.00
23	769.23	769.10	0.0000	0.00
24	833.86	833.70	0.0000	0.00
25	841.17	841.01	0.0000	0.00
26	860.88	860.71	0.0000	0.00
27	902.86	902.67	0.0000	0.00
28	911.27	911.07	0.0000	0.00
29	965.54	965.32	0.0000	0.00
30	969.23	969.01	0.0000	0.00
31	1120.83	1120.54	0.0000	0.00
32	1237.71	1237.38	0.0000	0.00
33	1274.03	1273.68	0.0000	0.00
34	1299.30	1298.94	0.0000	0.00
35	1384.94	1384.55	0.0000	0.00
36	1408.37	1407.97	0.0000	0.00
37	1461.25	1460.83	0.0000	0.00
38	1612.25	1611.78	0.0000	0.00
39	1638.64	1638.15	0.0000	0.00
40	1765.25	1764.72	0.0000	0.00
41	1837.04	1836.49	0.0000	0.00
42	1847.73	1847.17	0.0000	0.00

Analysis Report for 1510064-10
CP2211S13-14

<i>Peak No.</i>	<i>Energy (keV)</i>	<i>Centroid Channel</i>	<i>Centroid Uncertainty</i>	<i>Peak Significance</i>
43	1890.47	1889.90	0.0000	0.00
44	2046.47	2045.85	0.0000	0.00
45	2103.80	2103.16	0.0000	0.00
46	2204.84	2204.17	0.0000	0.00
47	2213.78	2213.11	0.0000	0.00
48	2402.72	2402.00	0.0000	0.00
49	2615.16	2614.38	0.0000	0.00
50	3198.65	3197.75	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1510064-10

CP2211S13-14

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/3/2015 1:30:30PM

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	46.44	44 -	50	46.68	1.36E+02	89.15	1.36E+03	1.29
2	63.02	60 -	67	63.24	1.51E+02	115.95	2.15E+03	1.84
3	76.24	72 -	83	76.46	1.10E+03	177.46	3.33E+03	3.86
4	86.88	83 -	91	87.09	2.75E+02	126.92	2.32E+03	1.67
5	185.97	182 -	189	186.12	1.94E+02	75.18	8.13E+02	2.05
6	209.55	206 -	213	209.69	8.64E+01	69.71	7.45E+02	1.88
M 7	238.84	235 -	246	238.97	8.27E+02	70.99	4.04E+02	1.74
m 8	241.73	235 -	246	241.86	2.42E+02	88.14	5.61E+02	2.52
9	270.57	267 -	274	270.69	8.97E+01	57.93	4.99E+02	2.26
10	295.43	292 -	299	295.53	1.86E+02	64.90	5.82E+02	1.88
11	300.80	299 -	304	300.90	4.05E+01	43.61	3.39E+02	1.79
M 12	338.74	335 -	344	338.82	1.84E+02	43.46	2.34E+02	1.99
m 13	341.75	335 -	344	341.83	4.04E+01	41.19	1.87E+02	1.99
14	352.09	348 -	355	352.16	3.98E+02	62.42	3.84E+02	1.53
15	409.80	408 -	413	409.84	2.83E+01	33.59	2.01E+02	1.17
16	463.24	459 -	467	463.25	7.46E+01	39.69	1.93E+02	2.26
17	511.00	505 -	514	511.00	1.61E+02	47.86	2.37E+02	2.57
18	583.53	578 -	588	583.48	2.21E+02	55.04	2.85E+02	2.00
M 19	597.98	596 -	614	597.92	2.43E+01	22.39	8.21E+01	2.92
m 20	602.63	596 -	614	602.58	2.30E+01	29.62	1.20E+02	2.42
m 21	609.62	596 -	614	609.56	3.00E+02	42.17	1.20E+02	1.91
22	725.85	714 -	731	725.74	7.43E+01	62.97	3.35E+02	2.18
23	769.23	766 -	773	769.10	4.35E+01	27.50	9.91E+01	3.27
24	833.86	830 -	838	833.70	3.28E+01	28.95	1.10E+02	4.15
25	841.17	838 -	846	841.01	2.55E+01	26.10	7.70E+01	2.23
26	860.88	857 -	865	860.71	3.84E+01	29.57	1.07E+02	2.01
27	902.86	900 -	904	902.67	1.96E+01	18.21	5.47E+01	1.31
28	911.27	906 -	915	911.07	1.58E+02	40.61	1.45E+02	2.03
M 29	965.54	959 -	978	965.32	5.26E+01	30.99	8.47E+01	2.92
m 30	969.23	959 -	978	969.01	8.60E+01	27.06	6.14E+01	2.29
31	1120.83	1116 -	1125	1120.54	5.88E+01	31.13	1.04E+02	2.37
32	1237.71	1233 -	1241	1237.38	3.75E+01	27.07	8.90E+01	1.77
33	1274.03	1268 -	1279	1273.68	2.89E+01	27.20	7.82E+01	5.14
34	1299.30	1294 -	1303	1298.94	2.50E+01	21.21	5.00E+01	5.52
35	1384.94	1382 -	1387	1384.55	1.27E+01	12.96	2.27E+01	1.88
36	1408.37	1406 -	1412	1407.97	1.35E+01	13.02	2.10E+01	2.86
37	1461.25	1455 -	1466	1460.83	5.18E+02	51.46	7.20E+01	2.09
38	1612.25	1609 -	1614	1611.78	8.00E+00	7.87	6.00E+00	2.79
39	1638.64	1636 -	1640	1638.15	5.50E+00	6.67	5.00E+00	2.39
40	1765.25	1760 -	1769	1764.72	4.82E+01	17.18	1.35E+01	2.72

Analysis Report for 1510064-10

CP2211S13-14

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
41	1837.04	1831 -	1841	1836.49	1.84E+01	10.69	5.14E+00	3.17
42	1847.73	1844 -	1849	1847.17	1.00E+01	8.37	6.00E+00	1.38
43	1890.47	1885 -	1894	1889.90	1.00E+01	6.32	0.00E+00	3.25
44	2046.47	2042 -	2048	2045.85	5.21E+00	6.34	3.57E+00	1.90
45	2103.80	2099 -	2107	2103.16	1.21E+01	14.88	2.58E+01	1.50
46	2204.84	2200 -	2209	2204.17	9.06E+00	11.96	1.59E+01	1.23
47	2213.78	2209 -	2217	2213.11	7.50E+00	9.41	9.00E+00	6.49
48	2402.72	2397 -	2405	2402.00	7.00E+00	5.29	0.00E+00	1.00
49	2615.16	2609 -	2618	2614.38	6.40E+01	18.06	1.00E+01	1.85
50	3198.65	3193 -	3200	3197.75	8.00E+00	5.66	0.00E+00	1.25

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 : 11/3/2015 1:30:30PM

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	46.44	44 -	50	1.36E+02	89.15	1.36E+03	7.07E+01	
2	63.02	60 -	67	1.51E+02	115.95	2.15E+03	9.31E+01	
3	76.24	72 -	83	1.10E+03	177.46	3.33E+03	1.35E+02	
4	86.88	83 -	91	2.75E+02	126.92	2.32E+03	1.01E+02	
5	185.97	182 -	189	1.94E+02	75.18	8.13E+02	5.74E+01	
6	209.55	206 -	213	8.64E+01	69.71	7.45E+02	5.52E+01	
M	7	238.84	235 -	246	8.27E+02	70.99	4.04E+02	3.30E+01
m	8	241.73	235 -	246	2.42E+02	88.14	5.61E+02	3.90E+01
	9	270.57	267 -	274	8.97E+01	57.93	4.99E+02	4.50E+01
	10	295.43	292 -	299	1.86E+02	64.90	5.82E+02	4.84E+01
	11	300.80	299 -	304	4.05E+01	43.61	3.39E+02	3.43E+01
M	12	338.74	335 -	344	1.84E+02	43.46	2.34E+02	2.52E+01
m	13	341.75	335 -	344	4.04E+01	41.19	1.87E+02	2.25E+01
	14	352.09	348 -	355	3.98E+02	62.42	3.84E+02	3.95E+01
	15	409.80	408 -	413	2.83E+01	33.59	2.01E+02	2.62E+01
	16	463.24	459 -	467	7.46E+01	39.69	1.93E+02	2.94E+01
	17	511.00	505 -	514	1.61E+02	47.86	2.37E+02	3.34E+01

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Analysis Report for 1510064-10

CP2211S13-14

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	18	583.53	578 -	588	2.21E+02	55.04	2.85E+02	3.81E+01
M	19	597.98	596 -	614	2.43E+01	22.39	8.21E+01	1.49E+01
m	20	602.63	596 -	614	2.30E+01	29.62	1.20E+02	1.80E+01
m	21	609.62	596 -	614	3.00E+02	42.17	1.20E+02	1.80E+01
	22	725.85	714 -	731	7.43E+01	62.97	3.35E+02	2.05E+01
	23	769.23	766 -	773	4.35E+01	27.50	9.91E+01	1.98E+01
	24	833.86	830 -	838	3.28E+01	28.95	1.10E+02	2.19E+01
	25	841.17	838 -	846	2.55E+01	26.10	7.70E+01	1.98E+01
	26	860.88	857 -	865	3.84E+01	29.57	1.07E+02	2.21E+01
	27	902.86	900 -	904	1.96E+01	18.21	5.47E+01	1.31E+01
	28	911.27	906 -	915	1.58E+02	40.61	1.45E+02	2.62E+01
M	29	965.54	959 -	978	5.26E+01	30.99	8.47E+01	1.51E+01
m	30	969.23	959 -	978	8.60E+01	27.06	6.14E+01	1.29E+01
	31	1120.83	1116 -	1125	5.88E+01	31.13	1.04E+02	2.23E+01
	32	1237.71	1233 -	1241	3.75E+01	27.07	8.90E+01	1.98E+01
	33	1274.03	1268 -	1279	2.89E+01	27.20	7.82E+01	2.05E+01
	34	1299.30	1294 -	1303	2.50E+01	21.21	5.00E+01	1.54E+01
	35	1384.94	1382 -	1387	1.27E+01	12.96	2.27E+01	8.90E+00
	36	1408.37	1406 -	1412	1.35E+01	13.02	2.10E+01	8.83E+00
	37	1461.25	1455 -	1466	5.18E+02	51.46	7.20E+01	1.97E+01
	38	1612.25	1609 -	1614	8.00E+00	7.87	6.00E+00	4.50E+00
	39	1638.64	1636 -	1640	5.50E+00	6.67	5.00E+00	3.90E+00
	40	1765.25	1760 -	1769	4.82E+01	17.18	1.35E+01	8.30E+00
	41	1837.04	1831 -	1841	1.84E+01	10.69	5.14E+00	5.23E+00
	42	1847.73	1844 -	1849	1.00E+01	8.37	6.00E+00	4.50E+00
	43	1890.47	1885 -	1894	1.00E+01	6.32	0.00E+00	0.00E+00
	44	2046.47	2042 -	2048	5.21E+00	6.34	3.57E+00	3.62E+00
	45	2103.80	2099 -	2107	1.21E+01	14.88	2.58E+01	1.08E+01
	46	2204.84	2200 -	2209	9.06E+00	11.96	1.59E+01	8.49E+00
	47	2213.78	2209 -	2217	7.50E+00	9.41	9.00E+00	6.29E+00
	48	2402.72	2397 -	2405	7.00E+00	5.29	0.00E+00	0.00E+00
	49	2615.16	2609 -	2618	6.40E+01	18.06	1.00E+01	6.88E+00
	50	3198.65	3193 -	3200	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

Analysis Report for 1510064-10

CP2211S13-14

PEAK WITH NID REPORT

Peak Analysis Performed on : 11/3/2015 1:30:30PM

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	46.44	44 -	50	46.68	1.36E+02	89.15	1.36E+03	PB-210
2	63.02	60 -	67	63.24	1.51E+02	115.95	2.15E+03	TH-230 TH-234
3	76.24	72 -	83	76.46	1.10E+03	177.46	3.33E+03	.....
4	86.88	83 -	91	87.09	2.75E+02	126.92	2.32E+03	NP-237 EU-155 SN-126
5	185.97	182 -	189	186.12	1.94E+02	75.18	8.13E+02	RA-226
6	209.55	206 -	213	209.69	8.64E+01	69.71	7.45E+02	CM-243 GA-67
M m 7	238.84	235 -	246	238.97	8.27E+02	70.99	4.04E+02	PB-212
8	241.73	235 -	246	241.86	2.42E+02	88.14	5.61E+02	RA-224
9	270.57	267 -	274	270.69	8.97E+01	57.93	4.99E+02	.....
10	295.43	292 -	299	295.53	1.86E+02	64.90	5.82E+02	PB-214
11	300.80	299 -	304	300.90	4.05E+01	43.61	3.39E+02	GA-67 PB-212 BI-210M
M m 12	338.74	335 -	344	338.82	1.84E+02	43.46	2.34E+02	AC-228
13	341.75	335 -	344	341.83	4.04E+01	41.19	1.87E+02	.....
14	352.09	348 -	355	352.16	3.98E+02	62.42	3.84E+02	PB-214
15	409.80	408 -	413	409.84	2.83E+01	33.59	2.01E+02	.....
16	463.24	459 -	467	463.25	7.46E+01	39.69	1.93E+02	SB-125
17	511.00	505 -	514	511.00	1.61E+02	47.86	2.37E+02	.....
18	583.53	578 -	588	583.48	2.21E+02	55.04	2.85E+02	TL-208
M m 19	597.98	596 -	614	597.92	2.43E+01	22.39	8.21E+01	.....
20	602.63	596 -	614	602.58	2.30E+01	29.62	1.20E+02	SB-124
m 21	609.62	596 -	614	609.56	3.00E+02	42.17	1.20E+02	BI-214
22	725.85	714 -	731	725.74	7.43E+01	62.97	3.35E+02	.....
23	769.23	766 -	773	769.10	4.35E+01	27.50	9.91E+01	.....
24	833.86	830 -	838	833.70	3.28E+01	28.95	1.10E+02	MN-54
25	841.17	838 -	846	841.01	2.55E+01	26.10	7.70E+01	.....
26	860.88	857 -	865	860.71	3.84E+01	29.57	1.07E+02	TL-208
27	902.86	900 -	904	902.67	1.96E+01	18.21	5.47E+01	.....
28	911.27	906 -	915	911.07	1.58E+02	40.61	1.45E+02	AC-228 LU-172
M m 29	965.54	959 -	978	965.32	5.26E+01	30.99	8.47E+01	.....
30	969.23	959 -	978	969.01	8.60E+01	27.06	6.14E+01	AC-228
31	1120.83	1116 -	1125	1120.54	5.88E+01	31.13	1.04E+02	SC-46 TA-182 BI-214
32	1237.71	1233 -	1241	1237.38	3.75E+01	27.07	8.90E+01	CO-56

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Analysis Report for 1510064-10

CP2211S13-14

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
33	1274.03	1268 -	1279	1273.68	2.89E+01	27.20	7.82E+01	EU-154 NA-22
34	1299.30	1294 -	1303	1298.94	2.50E+01	21.21	5.00E+01	.....
35	1384.94	1382 -	1387	1384.55	1.27E+01	12.96	2.27E+01	AG-110M
36	1408.37	1406 -	1412	1407.97	1.35E+01	13.02	2.10E+01	EU-152
37	1461.25	1455 -	1466	1460.83	5.18E+02	51.46	7.20E+01	K-40
38	1612.25	1609 -	1614	1611.78	8.00E+00	7.87	6.00E+00	.....
39	1638.64	1636 -	1640	1638.15	5.50E+00	6.67	5.00E+00	.....
40	1765.25	1760 -	1769	1764.72	4.82E+01	17.18	1.35E+01	BI-214
41	1837.04	1831 -	1841	1836.49	1.84E+01	10.69	5.14E+00	.....
42	1847.73	1844 -	1849	1847.17	1.00E+01	8.37	6.00E+00	.....
43	1890.47	1885 -	1894	1889.90	1.00E+01	6.32	0.00E+00	.....
44	2046.47	2042 -	2048	2045.85	5.21E+00	6.34	3.57E+00	.....
45	2103.80	2099 -	2107	2103.16	1.21E+01	14.88	2.58E+01	.....
46	2204.84	2200 -	2209	2204.17	9.06E+00	11.96	1.59E+01	BI-214
47	2213.78	2209 -	2217	2213.11	7.50E+00	9.41	9.00E+00	.....
48	2402.72	2397 -	2405	2402.00	7.00E+00	5.29	0.00E+00	.....
49	2615.16	2609 -	2618	2614.38	6.40E+01	18.06	1.00E+01	TL-208
50	3198.65	3193 -	3200	3197.75	8.00E+00	5.66	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 : 11/3/2015 1:30:30PM

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty	
1	46.44	1.36E+02	89.15	1.50E-02	1.58E-03	
2	63.02	1.51E+02	115.95	2.15E-02	1.70E-03	
3	76.24	1.10E+03	177.46	2.38E-02	2.14E-03	
4	86.88	2.75E+02	126.92	2.44E-02	2.49E-03	
5	185.97	1.94E+02	75.18	1.83E-02	1.42E-03	
6	209.55	8.64E+01	69.71	1.68E-02	1.31E-03	
M	7	238.84	8.27E+02	70.99	1.52E-02	1.18E-03
m	8	241.73	2.42E+02	88.14	1.51E-02	1.17E-03
	9	270.57	8.97E+01	57.93	1.38E-02	1.04E-03
	10	295.43	1.86E+02	64.90	1.28E-02	9.74E-04
	11	300.80	4.05E+01	43.61	1.26E-02	9.66E-04

Analysis Report for 1510064-10

CP2211S13-14

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
M	12	338.74	1.84E+02	43.46	1.14E-02	9.12E-04
m	13	341.75	4.04E+01	41.19	1.13E-02	9.08E-04
	14	352.09	3.98E+02	62.42	1.11E-02	8.93E-04
	15	409.80	2.83E+01	33.59	9.70E-03	8.19E-04
	16	463.24	7.46E+01	39.69	8.73E-03	7.66E-04
	17	511.00	1.61E+02	47.86	8.01E-03	7.18E-04
	18	583.53	2.21E+02	55.04	7.14E-03	6.46E-04
M	19	597.98	2.43E+01	22.39	6.98E-03	6.31E-04
m	20	602.63	2.30E+01	29.62	6.94E-03	6.27E-04
m	21	609.62	3.00E+02	42.17	6.87E-03	6.20E-04
	22	725.85	7.43E+01	62.97	5.90E-03	5.15E-04
	23	769.23	4.35E+01	27.50	5.61E-03	4.80E-04
	24	833.86	3.28E+01	28.95	5.23E-03	4.27E-04
	25	841.17	2.55E+01	26.10	5.20E-03	4.21E-04
	26	860.88	3.84E+01	29.57	5.09E-03	4.05E-04
	27	902.86	1.96E+01	18.21	4.89E-03	3.74E-04
	28	911.27	1.58E+02	40.61	4.85E-03	3.72E-04
M	29	965.54	5.26E+01	30.99	4.62E-03	3.62E-04
m	30	969.23	8.60E+01	27.06	4.60E-03	3.61E-04
	31	1120.83	5.88E+01	31.13	4.08E-03	3.33E-04
	32	1237.71	3.75E+01	27.07	3.76E-03	3.09E-04
	33	1274.03	2.89E+01	27.20	3.67E-03	3.01E-04
	34	1299.30	2.50E+01	21.21	3.61E-03	2.96E-04
	35	1384.94	1.27E+01	12.96	3.43E-03	2.81E-04
	36	1408.37	1.35E+01	13.02	3.39E-03	2.77E-04
	37	1461.25	5.18E+02	51.46	3.29E-03	2.69E-04
	38	1612.25	8.00E+00	7.87	3.05E-03	2.47E-04
	39	1638.64	5.50E+00	6.67	3.02E-03	2.43E-04
	40	1765.25	4.82E+01	17.18	2.86E-03	2.24E-04
	41	1837.04	1.84E+01	10.69	2.78E-03	2.13E-04
	42	1847.73	1.00E+01	8.37	2.77E-03	2.13E-04
	43	1890.47	1.00E+01	6.32	2.72E-03	2.13E-04
	44	2046.47	5.21E+00	6.34	2.58E-03	2.13E-04
	45	2103.80	1.21E+01	14.88	2.54E-03	2.13E-04
	46	2204.84	9.06E+00	11.96	2.46E-03	2.13E-04
	47	2213.78	7.50E+00	9.41	2.46E-03	2.13E-04
	48	2402.72	7.00E+00	5.29	2.34E-03	2.13E-04
	49	2615.16	6.40E+01	18.06	2.24E-03	2.13E-04
	50	3198.65	8.00E+00	5.66	2.06E-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 : 11/3/2015 1:30:30PM

: 00602

Analysis Report for 1510064-10

CP2211S13-14

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000028943.CNF

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.	
1	46.44	1.36E+02	89.15	5.28E+01	1.09E+01	8.27E+01	8.98E+01	
2	63.02	1.51E+02	115.95	5.52E+01	2.05E+01	9.59E+01	1.18E+02	
3	76.24	1.10E+03	177.46			1.10E+03	1.77E+02	
4	86.88	2.75E+02	126.92			2.75E+02	1.27E+02	
5	185.97	1.94E+02	75.18	3.93E+01	6.56E+00	1.55E+02	7.55E+01	
6	209.55	8.64E+01	69.71			8.64E+01	6.97E+01	
M	7	238.84	8.27E+02	70.99	1.34E+01	2.14E+00	8.13E+02	7.10E+01
m	8	241.73	2.42E+02	88.14	2.69E+00	1.46E+00	2.39E+02	8.81E+01
	9	270.57	8.97E+01	57.93			8.97E+01	5.79E+01
	10	295.43	1.86E+02	64.90			1.86E+02	6.49E+01
	11	300.80	4.05E+01	43.61			4.05E+01	4.36E+01
M	12	338.74	1.84E+02	43.46			1.84E+02	4.35E+01
m	13	341.75	4.04E+01	41.19			4.04E+01	4.12E+01
	14	352.09	3.98E+02	62.42	3.99E+00	4.73E+00	3.94E+02	6.26E+01
	15	409.80	2.83E+01	33.59			2.83E+01	3.36E+01
	16	463.24	7.46E+01	39.69			7.46E+01	3.97E+01
	17	511.00	1.61E+02	47.86	5.78E+01	4.60E+00	1.03E+02	4.81E+01
	18	583.53	2.21E+02	55.04	5.96E+00	3.46E+00	2.16E+02	5.51E+01
M	19	597.98	2.43E+01	22.39			2.43E+01	2.24E+01
m	20	602.63	2.30E+01	29.62			2.30E+01	2.96E+01
m	21	609.62	3.00E+02	42.17	6.71E+00	3.44E+00	2.94E+02	4.23E+01
	22	725.85	7.43E+01	62.97			7.43E+01	6.30E+01
	23	769.23	4.35E+01	27.50			4.35E+01	2.75E+01
	24	833.86	3.28E+01	28.95			3.28E+01	2.89E+01
	25	841.17	2.55E+01	26.10			2.55E+01	2.61E+01
	26	860.88	3.84E+01	29.57			3.84E+01	2.96E+01
	27	902.86	1.96E+01	18.21			1.96E+01	1.82E+01
	28	911.27	1.58E+02	40.61	2.32E+00	2.73E+00	1.56E+02	4.07E+01
M	29	965.54	5.26E+01	30.99			5.26E+01	3.10E+01
m	30	969.23	8.60E+01	27.06			8.60E+01	2.71E+01
	31	1120.83	5.88E+01	31.13	2.00E+00	2.20E+00	5.68E+01	3.12E+01
	32	1237.71	3.75E+01	27.07			3.75E+01	2.71E+01
	33	1274.03	2.89E+01	27.20			2.89E+01	2.72E+01
	34	1299.30	2.50E+01	21.21			2.50E+01	2.12E+01
	35	1384.94	1.27E+01	12.96			1.27E+01	1.30E+01
	36	1408.37	1.35E+01	13.02			1.35E+01	1.30E+01
	37	1461.25	5.18E+02	51.46			5.18E+02	5.15E+01
	38	1612.25	8.00E+00	7.87			8.00E+00	7.87E+00
	39	1638.64	5.50E+00	6.67			5.50E+00	6.67E+00
	40	1765.25	4.82E+01	17.18	1.45E+00	1.16E+00	4.68E+01	1.72E+01
	41	1837.04	1.84E+01	10.69			1.84E+01	1.07E+01
	42	1847.73	1.00E+01	8.37			1.00E+01	8.37E+00
	43	1890.47	1.00E+01	6.32			1.00E+01	6.32E+00
	44	2046.47	5.21E+00	6.34			5.21E+00	6.34E+00
	45	2103.80	1.21E+01	14.88			1.21E+01	1.49E+01
	46	2204.84	9.06E+00	11.96			9.06E+00	1.20E+01
	47	2213.78	7.50E+00	9.41			7.50E+00	9.41E+00
	48	2402.72	7.00E+00	5.29			7.00E+00	5.29E+00
	49	2615.16	6.40E+01	18.06			6.40E+01	1.81E+01

Analysis Report for 1510064-10

CP2211S13-14

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
50	3198.65	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 : 11/3/2015 1:30:30PM
 Ref. Peak Energy : 0.00 Reference Date :
 Peak Ratio : 0.00 Uncertainty : 0.00
 Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000028943.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	46.44	1.36E+02	89.15	5.28E+01	1.09E+01	8.27E+01	8.98E+01
2	63.02	1.51E+02	115.95	5.52E+01	2.05E+01	9.59E+01	1.18E+02
3	76.24	1.10E+03	177.46			1.10E+03	1.77E+02
4	86.88	2.75E+02	126.92			2.75E+02	1.27E+02
5	185.97	1.94E+02	75.18	3.93E+01	6.56E+00	1.55E+02	7.55E+01
6	209.55	8.64E+01	69.71			8.64E+01	6.97E+01
M	7	238.84	8.27E+02	1.34E+01	2.14E+00	8.13E+02	7.10E+01
m	8	241.73	2.42E+02	2.69E+00	1.46E+00	2.39E+02	8.81E+01
	9	270.57	8.97E+01			8.97E+01	5.79E+01
	10	295.43	1.86E+02			1.86E+02	6.49E+01
	11	300.80	4.05E+01			4.05E+01	4.36E+01
M	12	338.74	1.84E+02			1.84E+02	4.35E+01
m	13	341.75	4.04E+01			4.04E+01	4.12E+01
	14	352.09	3.98E+02	3.99E+00	4.73E+00	3.94E+02	6.26E+01
	15	409.80	2.83E+01			2.83E+01	3.36E+01
	16	463.24	7.46E+01			7.46E+01	3.97E+01
	17	511.00	1.61E+02	5.78E+01	4.60E+00	1.03E+02	4.81E+01
	18	583.53	2.21E+02	5.96E+00	3.46E+00	2.16E+02	5.51E+01
M	19	597.98	2.43E+01			2.43E+01	2.24E+01
m	20	602.63	2.30E+01			2.30E+01	2.96E+01
m	21	609.62	3.00E+02	6.71E+00	3.44E+00	2.94E+02	4.23E+01
	22	725.85	7.43E+01			7.43E+01	6.30E+01
	23	769.23	4.35E+01			4.35E+01	2.75E+01
	24	833.86	3.28E+01			3.28E+01	2.89E+01
	25	841.17	2.55E+01			2.55E+01	2.61E+01
	26	860.88	3.84E+01			3.84E+01	2.96E+01
	27	902.86	1.96E+01			1.96E+01	1.82E+01

Analysis Report for 1510064-10

CP2211S13-14

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	28	911.27	1.58E+02	40.61	2.32E+00	2.73E+00	1.56E+02	4.07E+01
M	29	965.54	5.26E+01	30.99			5.26E+01	3.10E+01
m	30	969.23	8.60E+01	27.06			8.60E+01	2.71E+01
	31	1120.83	5.88E+01	31.13	2.00E+00	2.20E+00	5.68E+01	3.12E+01
	32	1237.71	3.75E+01	27.07			3.75E+01	2.71E+01
	33	1274.03	2.89E+01	27.20			2.89E+01	2.72E+01
	34	1299.30	2.50E+01	21.21			2.50E+01	2.12E+01
	35	1384.94	1.27E+01	12.96			1.27E+01	1.30E+01
	36	1408.37	1.35E+01	13.02			1.35E+01	1.30E+01
	37	1461.25	5.18E+02	51.46			5.18E+02	5.15E+01
	38	1612.25	8.00E+00	7.87			8.00E+00	7.87E+00
	39	1638.64	5.50E+00	6.67			5.50E+00	6.67E+00
	40	1765.25	4.82E+01	17.18	1.45E+00	1.16E+00	4.68E+01	1.72E+01
	41	1837.04	1.84E+01	10.69			1.84E+01	1.07E+01
	42	1847.73	1.00E+01	8.37			1.00E+01	8.37E+00
	43	1890.47	1.00E+01	6.32			1.00E+01	6.32E+00
	44	2046.47	5.21E+00	6.34			5.21E+00	6.34E+00
	45	2103.80	1.21E+01	14.88			1.21E+01	1.49E+01
	46	2204.84	9.06E+00	11.96			9.06E+00	1.20E+01
	47	2213.78	7.50E+00	9.41			7.50E+00	9.41E+00
	48	2402.72	7.00E+00	5.29			7.00E+00	5.29E+00
	49	2615.16	6.40E+01	18.06			6.40E+01	1.81E+01
	50	3198.65	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

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
NA-22	0.959	1274.54 *	99.94	1.00E-01	9.49E-02
K-40	0.969	1460.81 *	10.67	1.84E+01	2.40E+00
MN-54	0.861	834.83 *	99.97	8.33E-02	7.38E-02
SB-124	0.463	602.71 *	97.87	5.85E-02	7.56E-02
		645.85	7.26		
		722.78	11.10		
		1691.02	49.00		
SN-126	0.927	87.57 *	37.00	3.81E-01	1.80E-01

: 00605

Analysis Report for 1510064-10
 CP2211S13-14

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
EU-155	0.347	86.50 *	30.90	4.61E-01	2.18E-01
		105.30	20.70		
TL-208	0.967	583.14 *	30.22	1.25E+00	3.39E-01
		860.37 *	4.48	2.10E+00	1.63E+00
		2614.66 *	35.85	9.95E-01	2.96E-01
PB-210	1.000	46.50 *	4.25	1.63E+00	1.77E+00
PB-212	0.988	238.63 *	44.60	1.50E+00	1.75E-01
		300.09 *	3.41	1.17E+00	1.27E+00
BI-214	0.962	609.31 *	46.30	1.15E+00	1.96E-01
		1120.29 *	15.10	1.15E+00	6.40E-01
		1764.49 *	15.80	1.29E+00	4.87E-01
		2204.22 *	4.98	9.22E-01	1.22E+00
PB-214	0.994	295.21 *	19.19	9.44E-01	3.37E-01
		351.92 *	37.19	1.20E+00	2.13E-01
RA-224	0.914	240.98 *	3.95	5.02E+00	1.89E+00
RA-226	0.990	186.21 *	3.28	3.22E+00	6.11E+00
AC-228	0.990	338.32 *	11.40	1.76E+00	4.40E-01
		911.07 *	27.70	1.45E+00	3.94E-01
		969.11 *	16.60	1.40E+00	4.56E-01
TH-234	0.989	63.29 *	3.80	1.47E+00	1.80E+00
NP-237	0.977	86.50 *	12.60	1.12E+00	5.28E-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 : 11/3/2015 1:30:30PM
 Peak Locate From Channel : 1
 Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
3	76.24	3.06619E-01	8.04		
6	209.55	2.40060E-02	40.33	Tol.	CM-243
9	270.57	2.49029E-02	32.31		
m 13	341.75	1.12276E-02	50.96	Sum	
15	409.80	7.87037E-03	59.27		
16	463.24	2.07115E-02	26.61	Tol.	SB-125
17	511.00	2.85508E-02	23.39		

Analysis Report for 1510064-10
CP2211S13-14

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
M 19	597.98	6.75639E-03	46.04		
22	725.85	2.06480E-02	42.36		
23	769.23	1.20699E-02	31.64	Sum	
25	841.17	7.08767E-03	51.15	Sum	
27	902.86	5.45213E-03	46.40	Sum	
M 29	965.54	1.46127E-02	29.46		
32	1237.71	1.04167E-02	36.10		
34	1299.30	6.94444E-03	42.43		
35	1384.94	3.51852E-03	51.16	Tol.	AG-110M
36	1408.37	3.75000E-03	48.22	Tol.	EU-152
38	1612.25	2.22222E-03	49.21	Sum	
39	1638.64	1.52778E-03	60.64		
41	1837.04	5.11905E-03	29.00		
42	1847.73	2.77778E-03	41.83		
43	1890.47	2.77778E-03	31.62		
44	2046.47	1.44841E-03	60.84		
45	2103.80	3.35556E-03	61.60	S-Esc	
47	2213.78	2.08333E-03	62.72		
48	2402.72	1.94444E-03	37.80		
50	3198.65	2.22222E-03	35.36	Sum	

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

NUCLIDE IDENTIFICATION REPORT

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

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
NA-22	0.95	1274.54 *	99.94	1.00E-01	9.49E-02
K-40	0.96	1460.81 *	10.67	1.84E+01	2.40E+00
MN-54	0.86	834.83 *	99.97	8.33E-02	7.38E-02
SB-124	0.46	602.71 *	97.87	5.85E-02	7.56E-02
		645.85	7.26		
		722.78	11.10		
		1691.02	49.00		
SN-126	0.92	87.57 *	37.00	3.81E-01	1.80E-01

Analysis Report for 1510064-10
CP2211S13-14

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
EU-155	0.34	86.50 *	30.90	4.61E-01	2.18E-01
		105.30	20.70		
TL-208	0.96	583.14 *	30.22	1.25E+00	3.39E-01
		860.37 *	4.48	2.10E+00	1.63E+00
		2614.66 *	35.85	9.95E-01	2.96E-01
PB-210	1.00	46.50 *	4.25	1.63E+00	1.77E+00
PB-212	0.98	238.63 *	44.60	1.50E+00	1.75E-01
		300.09 *	3.41	1.17E+00	1.27E+00
BI-214	0.96	609.31 *	46.30	1.15E+00	1.96E-01
		1120.29 *	15.10	1.15E+00	6.40E-01
		1764.49 *	15.80	1.29E+00	4.87E-01
		2204.22 *	4.98	9.22E-01	1.22E+00
PB-214	0.99	295.21 *	19.19	9.44E-01	3.37E-01
		351.92 *	37.19	1.20E+00	2.13E-01
RA-224	0.91	240.98 *	3.95	5.02E+00	1.89E+00
RA-226	0.99	186.21 *	3.28	3.22E+00	6.11E+00
AC-228	0.99	338.32 *	11.40	1.76E+00	4.40E-01
		911.07 *	27.70	1.45E+00	3.94E-01
		969.11 *	16.60	1.40E+00	4.56E-01
TH-234	0.98	63.29 *	3.80	1.47E+00	1.80E+00
NP-237	0.97	86.50 *	12.60	1.12E+00	5.28E-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
NA-22	0.959	1.00E-01	9.49E-02	
K-40	0.969	1.84E+01	2.40E+00	
MN-54	0.861	8.33E-02	7.38E-02	
SB-124	0.463	5.85E-02	7.56E-02	
? SN-126	0.927	3.81E-01	1.80E-01	
? EU-155	0.347	4.61E-01	2.18E-01	

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Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
TL-208	0.967	1.12E+00	2.21E-01	
PB-210	1.000	1.63E+00	1.77E+00	
PB-212	0.988	1.49E+00	1.73E-01	
BI-214	0.962	1.17E+00	1.73E-01	
PB-214	0.994	1.12E+00	1.80E-01	
RA-224	0.914	5.02E+00	1.89E+00	
RA-226	0.990	3.22E+00	6.11E+00	
AC-228	0.990	1.54E+00	2.47E-01	
TH-234	0.989	1.47E+00	1.80E+00	
? NP-237	0.977	1.12E+00	5.28E-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 : 11/3/2015 1:30:30PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
3	76.24	3.06619E-01	8.04		
6	209.55	2.40060E-02	40.33	Tol.	CM-243
9	270.57	2.49029E-02	32.31		
m 13	341.75	1.12276E-02	50.96	Sum	
15	409.80	7.87037E-03	59.27		
16	463.24	2.07115E-02	26.61	Tol.	SB-125
17	511.00	2.85508E-02	23.39		
M 19	597.98	6.75639E-03	46.04		
22	725.85	2.06480E-02	42.36		
23	769.23	1.20699E-02	31.64	Sum	
25	841.17	7.08767E-03	51.15	Sum	
27	902.86	5.45213E-03	46.40	Sum	
M 29	965.54	1.46127E-02	29.46		
32	1237.71	1.04167E-02	36.10		
34	1299.30	6.94444E-03	42.43		
35	1384.94	3.51852E-03	51.16	Tol.	AG-110M
36	1408.37	3.75000E-03	48.22	Tol.	EU-152
38	1612.25	2.22222E-03	49.21	Sum	
39	1638.64	1.52778E-03	60.64		
41	1837.04	5.11905E-03	29.00		
42	1847.73	2.77778E-03	41.83		
43	1890.47	2.77778E-03	31.62		
44	2046.47	1.44841E-03	60.84		
45	2103.80	3.35556E-03	61.60	S-Esc	
47	2213.78	2.08333E-03	62.72		
48	2402.72	1.94444E-03	37.80		
50	3198.65	2.22222E-03	35.36	Sum	

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

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NUCLIDE MDA REPORT

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

Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+ BE-7	477.59	10.42	4.34E-01	1.02E+00	1.02E+00
+ NA-22	1274.54	* 99.94	1.00E-01	1.52E-01	1.52E-01
+ NA-24	1368.53	99.99	3.40E+11	2.09E+12	3.99E+12
	2754.09	99.86	1.12E+11		2.09E+12
+ AL-26	1808.65	99.76	-5.57E-03	5.35E-02	5.35E-02
+ K-40	1460.81	* 10.67	1.84E+01	1.50E+00	1.50E+00
+ @ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26
+ TI-44	67.88	94.40	-1.22E-02	7.45E-02	7.45E-02
	78.34	96.00	2.39E-01		9.24E-02
+ SC-46	889.25	99.98	1.79E-03	1.11E-01	1.11E-01
	1120.51	99.99	1.92E-01		1.83E-01
+ V-48	983.52	99.98	5.63E-02	2.86E-01	2.86E-01
	1312.10	97.50	1.25E-01		4.13E-01
+ CR-51	320.08	9.83	-6.01E-01	1.39E+00	1.39E+00
+ MN-54	834.83	* 99.97	8.33E-02	1.18E-01	1.18E-01
+ CO-56	846.75	99.96	2.90E-02	8.74E-02	8.74E-02
	1037.75	14.03	3.82E-01		8.90E-01
	1238.25	67.00	5.15E-02		2.59E-01
	1771.40	15.51	-1.75E-01		6.03E-01
	2598.48	16.90	-1.97E-01		3.91E-01
+ CO-57	122.06	85.51	-1.43E-02	6.21E-02	6.21E-02
	136.48	10.60	2.12E-01		5.40E-01
+ CO-58	810.76	99.40	8.34E-02	1.31E-01	1.31E-01
+ FE-59	1099.22	56.50	1.48E-02	2.92E-01	2.92E-01
	1291.56	43.20	8.45E-02		3.73E-01
+ CO-60	1173.22	100.00	-3.73E-02	1.10E-01	1.10E-01
	1332.49	100.00	2.49E-02		1.23E-01
+ ZN-65	1115.52	50.75	-1.98E-03	2.09E-01	2.09E-01
+ GA-67	93.31	35.70	9.17E+01	7.38E+01	7.38E+01
	208.95	2.24	7.44E+02		1.31E+03
	300.22	16.00	-5.65E+02		1.94E+02
+ SE-75	121.11	16.70	-3.24E-02	1.04E-01	3.54E-01
	136.00	59.20	-1.05E-02		1.04E-01
	264.65	59.80	-2.61E-02		1.26E-01
	279.53	25.20	1.42E-01		3.22E-01
	400.65	11.40	-4.17E-02		7.73E-01
+ RB-82	776.52	13.00	5.38E-01	1.40E+00	1.40E+00
+ RB-83	520.41	46.00	7.66E-02	2.06E-01	2.06E-01
	529.64	30.30	2.76E-03		3.18E-01
	552.65	16.40	-2.62E-01		5.45E-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>
+	KR-85	513.99	0.43	-3.51E+00	2.42E+01	2.42E+01
+	SR-85	513.99	99.27	-2.06E-02	1.43E-01	1.43E-01
+	Y-88	898.02	93.40	7.26E-03	1.14E-01	1.14E-01
		1836.01	99.38	5.35E-02		1.25E-01
+	NB-93M	16.57	9.43	-2.89E+01	8.01E+01	8.01E+01
+	NB-94	702.63	100.00	2.32E-03	8.40E-02	9.17E-02
		871.10	100.00	-2.30E-02		8.40E-02
+	NB-95	765.79	99.81	1.27E-02	1.70E-01	1.70E-01
+	NB-95M	235.69	25.00	1.22E+01	1.07E+02	1.07E+02
+	ZR-95	724.18	43.70	-1.00E-01	2.39E-01	3.38E-01
		756.72	55.30	8.65E-02		2.39E-01
+	MO-99	181.06	6.20	-6.22E+01	8.52E+02	1.04E+03
		739.58	12.80	1.47E+02		8.52E+02
		778.00	4.50	-1.00E+03		2.18E+03
+	RU-103	497.08	89.00	2.80E-02	1.31E-01	1.31E-01
+	RU-106	621.84	9.80	-1.76E-02	8.77E-01	8.77E-01
+	AG-108M	433.93	89.90	-2.89E-03	7.58E-02	7.58E-02
		614.37	90.40	-3.68E-03		1.06E-01
		722.95	90.50	-1.62E-01		1.11E-01
+	CD-109	88.03	3.72	1.64E+00	2.00E+00	2.00E+00
+	AG-110M	657.75	93.14	-3.81E-02	9.57E-02	9.57E-02
		677.61	10.53	2.24E-01		8.96E-01
		706.67	16.46	-3.01E-01		5.69E-01
		763.93	21.98	2.28E-03		4.41E-01
		884.67	71.63	1.30E-02		1.36E-01
		1384.27	23.94	-2.83E-01		4.56E-01
+	CD-113M	263.70	0.02	8.50E+00	2.86E+02	2.86E+02
+	SN-113	255.12	1.93	-1.26E+00	1.29E-01	4.08E+00
		391.69	64.90	3.39E-03		1.29E-01
+	TE123M	159.00	84.10	-2.98E-02	7.40E-02	7.40E-02
+	SB-124	602.71	* 97.87	5.85E-02	1.69E-01	2.60E-01
		645.85	7.26	-4.84E-02		1.49E+00
		722.78	11.10	-1.83E+00		1.25E+00
		1691.02	49.00	-2.66E-02		1.69E-01
+	I-125	35.49	6.49	-8.64E-01	3.09E+00	3.09E+00
+	SB-125	176.33	6.89	-4.55E-02	2.35E-01	7.95E-01
		427.89	29.33	-1.06E-01		2.35E-01
		463.38	10.35	1.11E+00		8.52E-01
		600.56	17.80	7.71E-02		5.11E-01
		635.90	11.32	1.05E-01		7.35E-01
+	SB-126	414.70	83.30	4.12E-02	3.98E-01	4.26E-01
		666.33	99.60	-2.14E-01		3.98E-01
		695.00	99.60	2.57E-01		4.52E-01
		720.50	53.80	4.66E-01		8.68E-01
+	SN-126	87.57	* 37.00	3.81E-01	2.83E-01	2.83E-01
+	SB-127	473.00	25.00	-2.20E+01	3.54E+01	4.49E+01
		685.20	35.70	-1.22E+01		3.54E+01
		783.80	14.70	7.97E+01		1.01E+02

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	I-129	29.78	57.00	1.61E-01	4.69E-01	4.69E-01
		33.60	13.20	1.07E-01		1.30E+00
		39.58	7.52	7.62E-01		1.56E+00
+	I-131	284.30	6.05	-1.24E+00	9.55E-01	1.23E+01
		364.48	81.20	2.47E-01		9.55E-01
		636.97	7.26	9.04E+00		1.34E+01
		722.89	1.80	-9.29E+01		6.35E+01
+	TE-132	49.72	13.10	7.89E+01	3.21E+01	2.49E+02
		228.16	88.00	-1.40E+01		3.21E+01
+	BA-133	81.00	33.00	-7.30E-01	1.55E-01	1.87E-01
		302.84	17.80	1.05E-02		4.14E-01
		356.01	60.00	1.79E-02		1.55E-01
+	I-133	529.87	86.30	4.92E+06	5.67E+08	5.67E+08
+	XE-133	81.00	38.00	-2.63E+01	6.73E+00	6.73E+00
+	CS-134	563.23	8.38	1.35E-01	9.77E-02	9.58E-01
		569.32	15.43	-2.99E-02		5.11E-01
		604.70	97.60	-8.28E-01		9.77E-02
		795.84	85.40	3.48E-02		1.15E-01
		801.93	8.73	-1.29E-01		1.03E+00
+	CS-135	268.24	16.00	6.16E-02	4.72E-01	4.72E-01
+	@ 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	-2.92E-01	3.53E-01	3.18E+00
		163.89	4.61	1.36E+00		5.27E+00
		176.55	13.56	2.75E-01		1.76E+00
		273.65	12.66	-4.22E-01		2.53E+00
		340.57	48.50	2.03E+00		8.74E-01
		818.50	99.70	-2.34E-01		3.53E-01
		1048.07	79.60	2.47E-02		5.51E-01
		1235.34	19.70	-1.42E-01		3.02E+00
+	CS-137	661.65	85.12	-9.92E-03	9.88E-02	9.88E-02
+	LA-138	788.74	34.00	-3.63E-02	1.52E-01	2.51E-01
		1435.80	66.00	4.80E-02		1.52E-01
+	CE-139	165.85	80.35	2.17E-02	7.72E-02	7.72E-02
+	BA-140	162.64	6.70	-4.53E-01	1.36E+00	3.69E+00
		304.84	4.50	-1.39E-01		6.86E+00
		423.70	3.20	-2.82E+00		1.03E+01
		437.55	2.00	-7.45E-01		1.60E+01
		537.32	25.00	-4.03E-01		1.36E+00
+	LA-140	328.77	20.50	8.92E-02	4.51E-01	1.65E+00
		487.03	45.50	-2.02E-01		7.25E-01
		815.85	23.50	5.25E-02		1.73E+00
		1596.49	95.49	1.19E-02		4.51E-01
+	CE-141	145.44	48.40	-4.65E-03	1.97E-01	1.97E-01
+	CE-143	57.36	11.80	-1.77E+04	3.45E+05	9.38E+05
		293.26	42.00	4.43E+03		3.45E+05
		664.55	5.20	8.13E+05		2.49E+06
+	CE-144	133.54	10.80	-1.61E-01	5.20E-01	5.20E-01

Analysis Report for 1510064-10
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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	1.29E-02	8.98E-02	1.80E-01
		618.01	98.60	-2.44E-03		8.98E-02
		696.49	99.49	-5.07E-03		9.54E-02
+	PM-145	36.85	21.70	-5.89E-02	3.27E-01	6.11E-01
		37.36	39.70	-2.61E-02		3.27E-01
		42.30	15.10	3.80E-02		6.66E-01
		72.40	2.31	-5.32E+00		3.66E+00
+	PM-146	453.90	39.94	7.35E-02	1.88E-01	1.88E-01
		735.90	14.01	-2.56E-02		6.38E-01
		747.13	13.10	-1.41E-01		6.22E-01
+	ND-147	91.11	28.90	4.55E-01	1.40E+00	1.40E+00
		531.02	13.10	5.72E-01		3.49E+00
+	PM-149	285.90	3.10	1.23E+03	1.49E+04	1.49E+04
+	EU-152	121.78	20.50	-5.57E-02	2.42E-01	2.42E-01
		244.69	5.40	1.62E-01		1.49E+00
		344.27	19.13	-6.52E-02		3.55E-01
		778.89	9.20	-2.88E-01		8.90E-01
		964.01	10.40	-2.19E+00		1.12E+00
		1085.78	7.22	-1.89E-01		1.22E+00
		1112.02	9.60	4.53E-02		1.01E+00
		1407.95	14.94	-1.73E-01		6.66E-01
+	GD-153	97.43	31.30	-1.19E-01	1.80E-01	1.80E-01
		103.18	22.20	-1.82E-01		2.37E-01
+	EU-154	123.07	40.50	1.60E-02	1.26E-01	1.26E-01
		723.30	19.70	-7.49E-01		5.12E-01
		873.19	11.50	4.14E-01		8.21E-01
		996.32	10.30	-2.87E-01		8.41E-01
		1004.76	17.90	2.76E-01		5.65E-01
		1274.45	35.50	2.85E-01		3.71E-01
+	EU-155	86.50	* 30.90	4.61E-01	2.48E-01	3.42E-01
		105.30	20.70	4.87E-02		2.48E-01
+	EU-156	811.77	10.40	8.14E-01	3.29E+00	3.29E+00
		1153.47	7.20	7.90E-01		5.88E+00
		1230.71	8.90	-3.58E-01		4.43E+00
+	HO-166M	184.41	72.60	1.66E-01	9.38E-02	9.38E-02
		280.45	29.60	6.71E-03		2.28E-01
		410.94	11.10	-2.14E-02		6.82E-01
		711.69	54.10	8.93E-03		1.62E-01
+	TM-171	66.72	0.14	2.09E+00	5.23E+01	5.23E+01
+	HF-172	81.75	4.52	-4.64E+00	4.63E-01	1.41E+00
		125.81	11.30	-3.87E-01		4.63E-01
+	LU-172	181.53	20.60	-4.06E-01	2.99E+00	4.73E+00
		810.06	16.63	-1.33E-02		1.07E+01
		912.12	15.25	4.30E+01		2.18E+01
		1093.66	62.50	1.88E-01		2.99E+00
+	LU-173	100.72	5.24	-2.79E-01	3.79E-01	9.82E-01
		272.11	21.20	4.17E-01		3.79E-01
+	HF-175	343.40	84.00	-1.55E-02	1.15E-01	1.15E-01
+	LU-176	88.34	13.30	3.09E-01	7.06E-02	5.45E-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	1.32E-02	7.06E-02	8.04E-02
		306.78	94.00	-1.18E-03		7.06E-02
+	TA-182	67.75	41.20	-3.32E-02	2.03E-01	2.03E-01
		1121.30	34.90	5.76E-01		4.96E-01
		1189.05	16.23	9.04E-02		8.21E-01
		1221.41	26.98	2.96E-02		4.70E-01
		1231.02	11.44	5.72E-03		1.20E+00
+	IR-192	308.46	29.68	-3.38E-02	1.89E-01	2.95E-01
		468.07	48.10	4.54E-02		1.89E-01
+	HG-203	279.19	77.30	1.91E-02	1.33E-01	1.33E-01
+	BI-207	569.67	97.72	-9.64E-04	7.87E-02	7.87E-02
		1063.62	74.90	-4.36E-02		1.14E-01
+	TL-208	583.14	* 30.22	1.25E+00	2.56E-01	4.60E-01
		860.37	* 4.48	2.10E+00		2.56E+00
		2614.66	* 35.85	9.95E-01		2.56E-01
+	BI-210M	262.00	45.00	3.18E-02	1.50E-01	1.50E-01
		300.00	23.00	-9.74E-01		3.35E-01
+	PB-210	46.50	* 4.25	1.63E+00	2.90E+00	2.90E+00
+	PB-211	404.84	2.90	-6.22E-01	2.58E+00	2.58E+00
		831.96	2.90	5.51E-01		3.28E+00
+	BI-212	727.17	11.80	8.01E-01	9.68E-01	9.68E-01
		1620.62	2.75	7.28E-01		2.81E+00
+	PB-212	238.63	* 44.60	1.50E+00	2.47E-01	2.47E-01
		300.09	* 3.41	1.17E+00		2.07E+00
+	BI-214	609.31	* 46.30	1.15E+00	4.04E-01	4.04E-01
		1120.29	* 15.10	1.15E+00		9.67E-01
		1764.49	* 15.80	1.29E+00		5.50E-01
		2204.22	* 4.98	9.22E-01		2.01E+00
+	PB-214	295.21	* 19.19	9.44E-01	2.50E-01	5.05E-01
		351.92	* 37.19	1.20E+00		2.50E-01
+	RN-219	401.80	6.50	-2.15E-01	1.15E+00	1.15E+00
+	RA-223	323.87	3.88	-1.90E-01	1.86E+00	1.86E+00
+	RA-224	240.98	* 3.95	5.02E+00	2.87E+00	2.87E+00
+	RA-225	40.00	31.00	6.77E-01	1.38E+00	1.38E+00
+	RA-226	186.21	* 3.28	3.22E+00	2.50E+00	2.50E+00
+	TH-227	50.10	8.40	3.00E-01	9.49E-01	9.49E-01
		236.00	11.50	1.17E-01		1.04E+00
		256.20	6.30	-6.68E-01		1.05E+00
+	AC-228	338.32	* 11.40	1.76E+00	5.16E-01	7.97E-01
		911.07	* 27.70	1.45E+00		5.16E-01
		969.11	* 16.60	1.40E+00		1.22E+00
+	TH-230	48.44	16.90	1.03E-01	5.44E-01	5.44E-01
		62.85	4.60	1.50E+00		1.71E+00
		67.67	0.37	-3.11E+00		1.90E+01
+	PA-231	283.67	1.60	-4.11E-01	3.19E+00	4.07E+00
		302.67	2.30	8.09E-02		3.19E+00
+	TH-231	25.64	14.70	-3.08E+00	9.92E-01	3.24E+00
		84.21	6.40	-1.86E+00		9.92E-01

Analysis Report for 1510064-10
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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	9.75E-02	3.72E-01	3.72E-01
+	PA-234	131.20	20.40	2.58E-01	2.80E-01	2.80E-01
		733.99	8.80	4.77E-01		1.02E+00
		946.00	12.00	1.16E-02		6.95E-01
+	PA-234M	1001.03	0.92	5.91E+00	1.09E+01	1.09E+01
+	TH-234	63.29	* 3.80	1.47E+00	2.96E+00	2.96E+00
+	U-235	143.76	10.50	2.08E-01	4.97E-01	4.97E-01
		163.35	4.70	3.00E-01		1.17E+00
		205.31	4.70	3.48E-01		1.46E+00
+	NP-237	86.50	* 12.60	1.12E+00	8.30E-01	8.30E-01
+	NP-239	106.10	22.70	3.49E+02	9.21E+02	9.21E+02
		228.18	10.70	-1.16E+03		2.64E+03
		277.60	14.10	7.19E+02		1.96E+03
+	AM-241	59.54	35.90	-6.68E-02	2.05E-01	2.05E-01
+	AM-243	74.67	66.00	3.38E-01	1.49E-01	1.49E-01
+	CM-243	209.75	3.29	1.69E+00	4.88E-01	2.22E+00
		228.14	10.60	-2.88E-01		6.59E-01
		277.60	14.00	1.79E-01		4.88E-01

- + = Nuclide identified during the nuclide identification
- * = Energy line found in the spectrum
- > = MDA value not calculated
- @ = Half-life too short to be able to perform the decay correction
- ? = 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	1.02E+00	1.02E+00	4.34E-01	4.85E-01
+	NA-22	1274.54	* 99.94	1.52E-01	1.52E-01	1.00E-01	7.14E-02
	NA-24	1368.53	99.99	3.99E+12	2.09E+12	3.40E+11	1.80E+12
		2754.09	99.86	2.09E+12		1.12E+11	7.40E+11

Analysis Report for 1510064-10

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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	5.35E-02	5.35E-02	-5.57E-03	2.07E-02
+ K-40	1460.81	* 10.67	1.50E+00	1.50E+00	1.84E+01	7.02E-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	7.45E-02	7.45E-02	-1.22E-02	3.65E-02
	78.34	96.00	9.24E-02		2.39E-01	4.55E-02
SC-46	889.25	99.98	1.11E-01	1.11E-01	1.79E-03	5.13E-02
	1120.51	99.99	1.83E-01		1.92E-01	8.63E-02
V-48	983.52	99.98	2.86E-01	2.86E-01	5.63E-02	1.30E-01
	1312.10	97.50	4.13E-01		1.25E-01	1.90E-01
CR-51	320.08	9.83	1.39E+00	1.39E+00	-6.01E-01	6.68E-01
+ MN-54	834.83	* 99.97	1.18E-01	1.18E-01	8.33E-02	5.55E-02
CO-56	846.75	99.96	8.74E-02	8.74E-02	2.90E-02	3.95E-02
	1037.75	14.03	8.90E-01		3.82E-01	4.10E-01
	1238.25	67.00	2.59E-01		5.15E-02	1.21E-01
	1771.40	15.51	6.03E-01		-1.75E-01	2.53E-01
	2598.48	16.90	3.91E-01		-1.97E-01	1.39E-01
CO-57	122.06	85.51	6.21E-02	6.21E-02	-1.43E-02	3.01E-02
	136.48	10.60	5.40E-01		2.12E-01	2.62E-01
CO-58	810.76	99.40	1.31E-01	1.31E-01	8.34E-02	6.14E-02
FE-59	1099.22	56.50	2.92E-01	2.92E-01	1.48E-02	1.35E-01
	1291.56	43.20	3.73E-01		8.45E-02	1.70E-01
CO-60	1173.22	100.00	1.10E-01	1.10E-01	-3.73E-02	5.07E-02
	1332.49	100.00	1.23E-01		2.49E-02	5.68E-02
ZN-65	1115.52	50.75	2.09E-01	2.09E-01	-1.98E-03	9.58E-02
GA-67	93.31	35.70	7.38E+01	7.38E+01	9.17E+01	3.61E+01
	208.95	2.24	1.31E+03		7.44E+02	6.36E+02
	300.22	16.00	1.94E+02		-5.65E+02	9.38E+01
SE-75	121.11	16.70	3.54E-01	1.04E-01	-3.24E-02	1.72E-01
	136.00	59.20	1.04E-01		-1.05E-02	5.04E-02
	264.65	59.80	1.26E-01		-2.61E-02	6.06E-02
	279.53	25.20	3.22E-01		1.42E-01	1.55E-01
	400.65	11.40	7.73E-01		-4.17E-02	3.69E-01
RB-82	776.52	13.00	1.40E+00	1.40E+00	5.38E-01	6.52E-01
RB-83	520.41	46.00	2.06E-01	2.06E-01	7.66E-02	9.74E-02
	529.64	30.30	3.18E-01		2.76E-03	1.50E-01
	552.65	16.40	5.45E-01		-2.62E-01	2.55E-01
KR-85	513.99	0.43	2.42E+01	2.42E+01	-3.51E+00	1.16E+01
SR-85	513.99	99.27	1.43E-01	1.43E-01	-2.06E-02	6.84E-02
Y-88	898.02	93.40	1.14E-01	1.14E-01	7.26E-03	5.27E-02
	1836.01	99.38	1.25E-01		5.35E-02	5.51E-02
NB-93M	16.57	9.43	8.01E+01	8.01E+01	-2.89E+01	3.90E+01
NB-94	702.63	100.00	9.17E-02	8.40E-02	2.32E-03	4.31E-02
	871.10	100.00	8.40E-02		-2.30E-02	3.86E-02
NB-95	765.79	99.81	1.70E-01	1.70E-01	1.27E-02	7.97E-02
NB-95M	235.69	25.00	1.07E+02	1.07E+02	1.22E+01	5.27E+01
ZR-95	724.18	43.70	3.38E-01	2.39E-01	-1.00E-01	1.60E-01
	756.72	55.30	2.39E-01		8.65E-02	1.12E-01
MO-99	181.06	6.20	1.04E+03	8.52E+02	-6.22E+01	5.00E+02
	739.58	12.80	8.52E+02		1.47E+02	3.98E+02
	778.00	4.50	2.18E+03		-1.00E+03	1.01E+03
RU-103	497.08	89.00	1.31E-01	1.31E-01	2.80E-02	6.17E-02
RU-106	621.84	9.80	8.77E-01	8.77E-01	-1.76E-02	4.11E-01
AG-108M	433.93	89.90	7.58E-02	7.58E-02	-2.89E-03	3.59E-02

Analysis Report for 1510064-10

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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	1.06E-01	7.58E-02	-3.68E-03	5.01E-02
	722.95	90.50	1.11E-01		-1.62E-01	5.23E-02
CD-109	88.03	3.72	2.00E+00	2.00E+00	1.64E+00	9.80E-01
AG-110M	657.75	93.14	9.57E-02	9.57E-02	-3.81E-02	4.48E-02
	677.61	10.53	8.96E-01		2.24E-01	4.20E-01
	706.67	16.46	5.69E-01		-3.01E-01	2.66E-01
	763.93	21.98	4.41E-01		2.28E-03	2.06E-01
	884.67	71.63	1.36E-01		1.30E-02	6.29E-02
	1384.27	23.94	4.56E-01		-2.83E-01	2.06E-01
CD-113M	263.70	0.02	2.86E+02	2.86E+02	8.50E+00	1.38E+02
SN-113	255.12	1.93	4.08E+00	1.29E-01	-1.26E+00	1.97E+00
	391.69	64.90	1.29E-01		3.39E-03	6.13E-02
TE123M	159.00	84.10	7.40E-02	7.40E-02	-2.98E-02	3.59E-02
+ SB-124	602.71	* 97.87	2.60E-01	1.69E-01	5.85E-02	1.27E-01
	645.85	7.26	1.49E+00		-4.84E-02	6.94E-01
	722.78	11.10	1.25E+00		-1.83E+00	5.90E-01
	1691.02	49.00	1.69E-01		-2.66E-02	6.82E-02
I-125	35.49	6.49	3.09E+00	3.09E+00	-8.64E-01	1.50E+00
SB-125	176.33	6.89	7.95E-01	2.35E-01	-4.55E-02	3.84E-01
	427.89	29.33	2.35E-01		-1.06E-01	1.11E-01
	463.38	10.35	8.52E-01		1.11E+00	4.07E-01
	600.56	17.80	5.11E-01		7.71E-02	2.41E-01
	635.90	11.32	7.35E-01		1.05E-01	3.44E-01
SB-126	414.70	83.30	4.26E-01	3.98E-01	4.12E-02	2.03E-01
	666.33	99.60	3.98E-01		-2.14E-01	1.86E-01
	695.00	99.60	4.52E-01		2.57E-01	2.12E-01
	720.50	53.80	8.68E-01		4.66E-01	4.08E-01
+ SN-126	87.57	* 37.00	2.83E-01	2.83E-01	3.81E-01	1.39E-01
SB-127	473.00	25.00	4.49E+01	3.54E+01	-2.20E+01	2.12E+01
	685.20	35.70	3.54E+01		-1.22E+01	1.65E+01
	783.80	14.70	1.01E+02		7.97E+01	4.72E+01
I-129	29.78	57.00	4.69E-01	4.69E-01	1.61E-01	2.28E-01
	33.60	13.20	1.30E+00		1.07E-01	6.30E-01
	39.58	7.52	1.56E+00		7.62E-01	7.58E-01
I-131	284.30	6.05	1.23E+01	9.55E-01	-1.24E+00	5.91E+00
	364.48	81.20	9.55E-01		2.47E-01	4.56E-01
	636.97	7.26	1.34E+01		9.04E+00	6.28E+00
	722.89	1.80	6.35E+01		-9.29E+01	2.99E+01
TE-132	49.72	13.10	2.49E+02	3.21E+01	7.89E+01	1.21E+02
	228.16	88.00	3.21E+01		-1.40E+01	1.56E+01
BA-133	81.00	33.00	1.87E-01	1.55E-01	-7.30E-01	9.12E-02
	302.84	17.80	4.14E-01		1.05E-02	1.99E-01
	356.01	60.00	1.55E-01		1.79E-02	7.51E-02
I-133	529.87	86.30	5.67E+08	5.67E+08	4.92E+06	2.67E+08
XE-133	81.00	38.00	6.73E+00	6.73E+00	-2.63E+01	3.29E+00
CS-134	563.23	8.38	9.58E-01	9.77E-02	1.35E-01	4.51E-01
	569.32	15.43	5.11E-01		-2.99E-02	2.40E-01
	604.70	97.60	9.77E-02		-8.28E-01	4.63E-02
	795.84	85.40	1.15E-01		3.48E-02	5.36E-02
	801.93	8.73	1.03E+00		-1.29E-01	4.80E-01
CS-135	268.24	16.00	4.72E-01	4.72E-01	6.16E-02	2.28E-01
@ I-135	1131.51	22.50	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	1260.41	28.60	1.00E+26		1.00E+26	1.00E+20

Analysis Report for 1510064-10

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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	1.00E+26	1.00E+26	1.00E+26	1.00E+20
CS-136	153.22	7.46	3.18E+00	3.53E-01	-2.92E-01	1.54E+00
	163.89	4.61	5.27E+00		1.36E+00	2.55E+00
	176.55	13.56	1.76E+00		2.75E-01	8.49E-01
	273.65	12.66	2.53E+00		-4.22E-01	1.22E+00
	340.57	48.50	8.74E-01		2.03E+00	4.24E-01
	818.50	99.70	3.53E-01		-2.34E-01	1.62E-01
	1048.07	79.60	5.51E-01		2.47E-02	2.54E-01
	1235.34	19.70	3.02E+00		-1.42E-01	1.41E+00
CS-137	661.65	85.12	9.88E-02	9.88E-02	-9.92E-03	4.63E-02
LA-138	788.74	34.00	2.51E-01	1.52E-01	-3.63E-02	1.16E-01
	1435.80	66.00	1.52E-01		4.80E-02	6.85E-02
CE-139	165.85	80.35	7.72E-02	7.72E-02	2.17E-02	3.74E-02
BA-140	162.64	6.70	3.69E+00	1.36E+00	-4.53E-01	1.79E+00
	304.84	4.50	6.86E+00		-1.39E-01	3.29E+00
	423.70	3.20	1.03E+01		-2.82E+00	4.89E+00
	437.55	2.00	1.60E+01		-7.45E-01	7.56E+00
	537.32	25.00	1.36E+00		-4.03E-01	6.41E-01
LA-140	328.77	20.50	1.65E+00	4.51E-01	8.92E-02	7.91E-01
	487.03	45.50	7.25E-01		-2.02E-01	3.42E-01
	815.85	23.50	1.73E+00		5.25E-02	8.00E-01
	1596.49	95.49	4.51E-01		1.19E-02	1.99E-01
CE-141	145.44	48.40	1.97E-01	1.97E-01	-4.65E-03	9.54E-02
CE-143	57.36	11.80	9.38E+05	3.45E+05	-1.77E+04	4.58E+05
	293.26	42.00	3.45E+05		4.43E+03	1.68E+05
	664.55	5.20	2.49E+06		8.13E+05	1.17E+06
CE-144	133.54	10.80	5.20E-01	5.20E-01	-1.61E-01	2.52E-01
PM-144	476.78	42.00	1.80E-01	8.98E-02	1.29E-02	8.49E-02
	618.01	98.60	8.98E-02		-2.44E-03	4.22E-02
	696.49	99.49	9.54E-02		-5.07E-03	4.48E-02
PM-145	36.85	21.70	6.11E-01	3.27E-01	-5.89E-02	2.97E-01
	37.36	39.70	3.27E-01		-2.61E-02	1.59E-01
	42.30	15.10	6.66E-01		3.80E-02	3.24E-01
	72.40	2.31	3.66E+00		-5.32E+00	1.80E+00
PM-146	453.90	39.94	1.88E-01	1.88E-01	7.35E-02	8.90E-02
	735.90	14.01	6.38E-01		-2.56E-02	2.98E-01
	747.13	13.10	6.22E-01		-1.41E-01	2.88E-01
ND-147	91.11	28.90	1.40E+00	1.40E+00	4.55E-01	6.88E-01
	531.02	13.10	3.49E+00		5.72E-01	1.65E+00
PM-149	285.90	3.10	1.49E+04	1.49E+04	1.23E+03	7.14E+03
EU-152	121.78	20.50	2.42E-01	2.42E-01	-5.57E-02	1.17E-01
	244.69	5.40	1.49E+00		1.62E-01	7.26E-01
	344.27	19.13	3.55E-01		-6.52E-02	1.69E-01
	778.89	9.20	8.90E-01		-2.88E-01	4.12E-01
	964.01	10.40	1.12E+00		-2.19E+00	5.25E-01
	1085.78	7.22	1.22E+00		-1.89E-01	5.54E-01
	1112.02	9.60	1.01E+00		4.53E-02	4.62E-01
	1407.95	14.94	6.66E-01		-1.73E-01	2.99E-01
GD-153	97.43	31.30	1.80E-01	1.80E-01	-1.19E-01	8.77E-02
	103.18	22.20	2.37E-01		-1.82E-01	1.15E-01
EU-154	123.07	40.50	1.26E-01	1.26E-01	1.60E-02	6.14E-02
	723.30	19.70	5.12E-01		-7.49E-01	2.42E-01
	873.19	11.50	8.21E-01		4.14E-01	3.81E-01

Analysis Report for 1510064-10

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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	8.41E-01	1.26E-01	-2.87E-01	3.84E-01
	1004.76	17.90	5.65E-01		2.76E-01	2.61E-01
	1274.45	35.50	3.71E-01		2.85E-01	1.72E-01
+ EU-155	86.50 *	30.90	3.42E-01	2.48E-01	4.61E-01	1.69E-01
	105.30	20.70	2.48E-01		4.87E-02	1.21E-01
EU-156	811.77	10.40	3.29E+00	3.29E+00	8.14E-01	1.54E+00
	1153.47	7.20	5.88E+00		7.90E-01	2.72E+00
	1230.71	8.90	4.43E+00		-3.58E-01	2.03E+00
HO-166M	184.41	72.60	9.38E-02	9.38E-02	1.66E-01	4.56E-02
	280.45	29.60	2.28E-01		6.71E-03	1.10E-01
	410.94	11.10	6.82E-01		-2.14E-02	3.25E-01
	711.69	54.10	1.62E-01		8.93E-03	7.59E-02
TM-171	66.72	0.14	5.23E+01	5.23E+01	2.09E+00	2.56E+01
HF-172	81.75	4.52	1.41E+00	4.63E-01	-4.64E+00	6.87E-01
	125.81	11.30	4.63E-01		-3.87E-01	2.25E-01
LU-172	181.53	20.60	4.73E+00	2.99E+00	-4.06E-01	2.28E+00
	810.06	16.63	1.07E+01		-1.33E-02	4.97E+00
	912.12	15.25	2.18E+01		4.30E+01	1.05E+01
	1093.66	62.50	2.99E+00		1.88E-01	1.37E+00
LU-173	100.72	5.24	9.82E-01	3.79E-01	-2.79E-01	4.77E-01
	272.11	21.20	3.79E-01		4.17E-01	1.83E-01
HF-175	343.40	84.00	1.15E-01	1.15E-01	-1.55E-02	5.49E-02
LU-176	88.34	13.30	5.45E-01	7.06E-02	3.09E-01	2.67E-01
	201.83	86.00	8.04E-02		1.32E-02	3.91E-02
	306.78	94.00	7.06E-02		-1.18E-03	3.38E-02
TA-182	67.75	41.20	2.03E-01	2.03E-01	-3.32E-02	9.92E-02
	1121.30	34.90	4.96E-01		5.76E-01	2.34E-01
	1189.05	16.23	8.21E-01		9.04E-02	3.79E-01
	1221.41	26.98	4.70E-01		2.96E-02	2.15E-01
	1231.02	11.44	1.20E+00		5.72E-03	5.53E-01
IR-192	308.46	29.68	2.95E-01	1.89E-01	-3.38E-02	1.41E-01
	468.07	48.10	1.89E-01		4.54E-02	8.91E-02
HG-203	279.19	77.30	1.33E-01	1.33E-01	1.91E-02	6.40E-02
BI-207	569.67	97.72	7.87E-02	7.87E-02	-9.64E-04	3.70E-02
	1063.62	74.90	1.14E-01		-4.36E-02	5.16E-02
+ TL-208	583.14 *	30.22	4.60E-01	2.56E-01	1.25E+00	2.22E-01
	860.37 *	4.48	2.56E+00		2.10E+00	1.21E+00
	2614.66 *	35.85	2.56E-01		9.95E-01	1.07E-01
BI-210M	262.00	45.00	1.50E-01	1.50E-01	3.18E-02	7.22E-02
	300.00	23.00	3.35E-01		-9.74E-01	1.62E-01
+ PB-210	46.50 *	4.25	2.90E+00	2.90E+00	1.63E+00	1.42E+00
	PB-211	404.84	2.90		2.58E+00	-6.22E-01	1.23E+00
BI-212	831.96	2.90	3.28E+00	9.68E-01	5.51E-01	1.53E+00
	727.17	11.80	9.68E-01		8.01E-01	4.59E-01
	1620.62	2.75	2.81E+00		7.28E-01	1.20E+00
+ PB-212	238.63 *	44.60	2.47E-01	2.47E-01	1.50E+00	1.21E-01
	300.09 *	3.41	2.07E+00		1.17E+00	9.95E-01
+ BI-214	609.31 *	46.30	4.04E-01	4.04E-01	1.15E+00	1.97E-01
	1120.29 *	15.10	9.67E-01		1.15E+00	4.56E-01
	1764.49 *	15.80	5.50E-01		1.29E+00	2.38E-01
	2204.22 *	4.98	2.01E+00		9.22E-01	8.65E-01
+ PB-214	295.21 *	19.19	5.05E-01	2.50E-01	9.44E-01	2.46E-01
	351.92 *	37.19	2.50E-01		1.20E+00	1.21E-01

Analysis Report for 1510064-10

CP2211S13-14

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	1.15E+00	1.15E+00	-2.15E-01	5.51E-01
RA-223	323.87	3.88	1.86E+00	1.86E+00	-1.90E-01	8.92E-01
+ RA-224	240.98 *	3.95	2.87E+00	2.87E+00	5.02E+00	1.41E+00
RA-225	40.00	31.00	1.38E+00	1.38E+00	6.77E-01	6.73E-01
+ RA-226	186.21 *	3.28	2.50E+00	2.50E+00	3.22E+00	1.22E+00
TH-227	50.10	8.40	9.49E-01	9.49E-01	3.00E-01	4.63E-01
	236.00	11.50	1.04E+00		1.17E-01	5.08E-01
	256.20	6.30	1.05E+00		-6.68E-01	5.06E-01
+ AC-228	338.32 *	11.40	7.97E-01	5.16E-01	1.76E+00	3.86E-01
	911.07 *	27.70	5.16E-01		1.45E+00	2.45E-01
	969.11 *	16.60	1.22E+00		1.40E+00	5.89E-01
TH-230	48.44	16.90	5.44E-01	5.44E-01	1.03E-01	2.66E-01
	62.85	4.60	1.71E+00		1.50E+00	8.38E-01
	67.67	0.37	1.90E+01		-3.11E+00	9.31E+00
PA-231	283.67	1.60	4.07E+00	3.19E+00	-4.11E-01	1.96E+00
	302.67	2.30	3.19E+00		8.09E-02	1.53E+00
TH-231	25.64	14.70	3.24E+00	9.92E-01	-3.08E+00	1.57E+00
	84.21	6.40	9.92E-01		-1.86E+00	4.85E-01
PA-233	311.98	38.60	3.72E-01	3.72E-01	9.75E-02	1.78E-01
PA-234	131.20	20.40	2.80E-01	2.80E-01	2.58E-01	1.36E-01
	733.99	8.80	1.02E+00		4.77E-01	4.76E-01
	946.00	12.00	6.95E-01		1.16E-02	3.17E-01
PA-234M	1001.03	0.92	1.09E+01	1.09E+01	5.91E+00	5.03E+00
+ TH-234	63.29 *	3.80	2.96E+00	2.96E+00	1.47E+00	1.46E+00
U-235	143.76	10.50	4.97E-01	4.97E-01	2.08E-01	2.41E-01
	163.35	4.70	1.17E+00		3.00E-01	5.65E-01
	205.31	4.70	1.46E+00		3.48E-01	7.10E-01
+ NP-237	86.50 *	12.60	8.30E-01	8.30E-01	1.12E+00	4.09E-01
NP-239	106.10	22.70	9.21E+02	9.21E+02	3.49E+02	4.48E+02
	228.18	10.70	2.64E+03		-1.16E+03	1.28E+03
	277.60	14.10	1.96E+03		7.19E+02	9.45E+02
AM-241	59.54	35.90	2.05E-01	2.05E-01	-6.68E-02	1.00E-01
AM-243	74.67	66.00	1.49E-01	1.49E-01	3.38E-01	7.35E-02
CM-243	209.75	3.29	2.22E+00	4.88E-01	1.69E+00	1.08E+00
	228.14	10.60	6.59E-01		-2.88E-01	3.19E-01
	277.60	14.00	4.88E-01		1.79E-01	2.35E-01

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

No Action Level results available for reporting purposes.

Analysis Report for 1510064-10
CP2211S13-14

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: CP2211S13-14

Elapsed Live time: 3600
 Elapsed Real Time: 3619

Channel	1	2	3	4	5	6	7	8	9
1:	0	0	0	0	0	0	0	0	0
9:	8	187	179	147	140	121	98	102	
17:	101	77	84	87	63	79	84	70	
25:	81	91	77	88	111	75	80	90	
33:	85	80	74	79	80	91	87	87	
41:	95	99	83	92	80	139	214	98	
49:	94	97	111	108	91	114	83	99	
57:	131	111	119	136	153	129	177	202	
65:	152	141	135	144	149	147	163	151	
73:	190	215	387	300	465	442	142	127	
81:	120	132	99	154	172	118	202	242	
89:	132	169	147	134	210	201	93	85	
97:	83	96	82	105	67	78	71	77	
105:	91	98	81	84	86	77	63	70	
113:	67	67	81	90	75	66	86	68	
121:	85	70	66	73	88	66	78	70	
129:	117	93	89	73	86	67	77	75	
137:	72	78	80	66	62	79	46	74	
145:	79	69	51	70	80	66	66	75	
153:	62	61	78	63	73	51	70	67	
161:	57	70	71	54	65	71	56	67	
169:	49	49	56	60	68	57	51	63	
177:	62	54	58	51	49	50	55	59	
185:	77	137	112	64	47	57	46	56	
193:	49	71	57	57	62	62	50	73	
201:	43	46	59	63	65	40	58	53	
209:	74	88	55	51	40	44	50	56	
217:	46	41	45	49	36	54	53	66	
225:	48	42	52	55	40	57	42	45	
233:	53	46	43	38	58	210	506	209	
241:	110	133	84	36	42	31	33	44	
249:	28	36	41	42	43	31	34	33	
257:	36	35	38	43	44	28	36	27	
265:	34	37	27	32	35	69	70	46	
273:	30	30	31	25	39	46	33	29	
281:	30	24	34	28	31	32	25	26	
289:	33	28	33	32	28	36	130	141	
297:	41	37	32	47	48	27	31	25	
305:	24	31	19	33	25	28	24	28	
313:	22	39	32	26	25	30	22	24	
321:	26	26	26	29	31	28	34	42	
329:	28	21	19	29	32	22	27	15	
337:	23	80	103	50	28	35	22	13	
345:	15	21	23	26	28	24	70	257	
353:	130	34	21	26	31	24	20	20	
361:	21	23	27	18	20	18	17	21	

369: 16 18 16 13 15 23 14 16

Sample Title: CP2211S13-14

Channel	-----	-----	-----	-----	-----	-----	-----	-----
377:	24	18	21	17	18	19	18	16
385:	16	24	17	18	22	16	24	18
393:	14	18	24	15	26	20	18	16
401:	30	19	20	25	20	25	20	16
409:	33	22	24	18	16	16	22	18
417:	17	26	25	15	21	14	21	20
425:	20	10	15	21	17	13	10	20
433:	14	15	11	16	19	15	16	15
441:	15	19	14	15	16	16	20	23
449:	11	18	18	18	17	16	16	17
457:	14	14	12	14	22	21	32	35
465:	14	16	5	13	17	16	15	14
473:	13	8	15	13	17	19	15	11
481:	15	12	14	14	16	11	18	10
489:	8	17	20	14	11	20	11	8
497:	16	12	8	14	10	11	13	15
505:	12	15	15	15	25	41	59	66
513:	21	10	10	10	14	17	11	17
521:	13	8	14	8	15	14	16	9
529:	14	12	14	17	12	16	9	11
537:	14	9	14	11	11	16	13	13
545:	5	17	15	15	12	10	10	7
553:	12	8	14	13	16	11	12	8
561:	7	15	20	14	13	10	11	12
569:	16	10	11	12	10	12	12	10
577:	14	14	11	11	11	31	122	100
585:	30	9	14	11	13	9	15	6
593:	12	14	7	9	18	10	12	17
601:	20	13	21	9	11	16	8	32
609:	128	137	44	10	14	7	15	11
617:	12	16	13	9	9	15	12	11
625:	10	11	8	4	13	11	8	10
633:	5	8	11	11	10	16	15	12
641:	10	5	12	19	6	8	7	7
649:	8	9	13	11	14	10	7	12
657:	12	14	6	11	11	16	11	12
665:	8	9	11	10	9	11	15	7
673:	12	12	12	13	14	8	13	9
681:	9	9	7	12	3	8	10	12
689:	14	10	8	11	13	10	13	14
697:	10	14	5	11	15	17	19	2
705:	10	7	11	14	11	16	5	11
713:	11	10	8	9	11	7	11	16
721:	12	18	11	6	12	18	33	34
729:	11	7	8	8	11	10	10	11
737:	13	5	9	11	12	8	9	7
745:	7	12	4	8	9	8	7	12
753:	3	10	7	18	6	12	16	11
761:	10	11	13	12	4	5	11	14
769:	19	17	9	11	7	8	9	8
777:	13	9	3	2	6	11	10	9
785:	11	11	9	6	8	8	9	5
793:	6	10	17	13	11	8	5	9

801: 9 10 3 11 11 9 8 13

Sample Title: CP2211S13-14

Channel	-----	-----	-----	-----	-----	-----	-----	-----
809:	10	8	5	10	14	13	6	4
817:	8	7	4	12	4	6	7	6
825:	8	10	10	5	3	5	5	16
833:	9	11	15	11	7	9	7	14
841:	13	7	5	5	3	1	4	6
849:	6	5	4	3	12	5	8	12
857:	4	9	10	23	20	7	7	7
865:	5	4	8	4	3	6	9	8
873:	7	8	12	7	7	7	7	9
881:	11	7	2	13	4	8	6	8
889:	4	7	9	6	2	9	8	5
897:	3	10	8	7	7	11	18	4
905:	4	8	7	9	7	33	81	57
913:	13	9	7	10	12	6	5	5
921:	8	6	11	5	5	7	2	5
929:	12	8	10	10	11	9	8	3
937:	4	8	3	1	6	2	6	4
945:	7	2	6	4	9	8	5	9
953:	9	11	7	10	6	5	5	4
961:	9	10	5	10	28	9	4	21
969:	53	33	4	4	8	6	4	8
977:	7	3	5	3	9	4	4	5
985:	5	6	5	4	5	8	6	7
993:	7	6	5	5	4	3	7	7
1001:	7	13	9	5	6	3	9	6
1009:	5	2	8	5	6	7	6	6
1017:	6	8	10	5	9	3	3	6
1025:	5	13	5	6	4	4	5	6
1033:	4	3	6	3	11	4	11	4
1041:	6	4	6	5	6	7	4	9
1049:	8	7	5	7	7	3	9	2
1057:	6	7	2	4	4	4	5	7
1065:	3	5	10	5	5	7	8	5
1073:	8	7	8	6	3	6	7	16
1081:	6	7	7	6	2	3	2	5
1089:	8	2	7	4	10	7	8	6
1097:	7	4	5	7	8	12	4	8
1105:	6	10	4	5	5	8	3	5
1113:	9	4	5	6	6	5	15	27
1121:	22	10	7	7	6	4	9	6
1129:	4	4	5	5	6	4	3	7
1137:	7	6	9	10	13	9	10	4
1145:	9	6	3	6	6	10	9	4
1153:	6	9	8	9	10	6	3	7
1161:	6	4	5	5	5	9	7	8
1169:	6	8	7	5	10	7	5	4
1177:	8	10	5	6	8	8	4	7
1185:	5	13	7	5	3	4	9	7
1193:	7	6	8	6	4	10	7	7
1201:	5	10	11	3	5	11	8	6
1209:	5	8	7	6	7	7	5	6
1217:	4	6	3	6	9	7	5	5
1225:	6	6	5	3	6	8	9	7

1233: 4 11 10 7 6 21 15 7

Sample Title: CP2211S13-14

Channel	1	2	3	4	5	6	7	8	9
1241:	1	8	10	5	5	4	8	8	
1249:	9	6	4	5	4	6	9	7	
1257:	4	7	5	5	7	3	3	8	
1265:	3	4	5	1	5	5	4	7	
1273:	8	9	10	5	7	4	3	4	
1281:	4	7	8	3	4	3	7	5	
1289:	3	6	4	2	2	3	3	4	
1297:	7	6	10	3	4	8	2	3	
1305:	4	3	7	7	5	5	4	5	
1313:	5	3	5	6	5	1	4	4	
1321:	7	3	5	2	4	1	4	3	
1329:	4	6	10	7	4	1	8	4	
1337:	4	8	4	2	2	1	3	5	
1345:	4	2	5	8	2	2	3	3	
1353:	2	2	2	2	1	4	4	2	
1361:	3	1	3	4	1	3	7	2	
1369:	0	6	2	5	3	5	3	3	
1377:	3	7	7	1	2	3	3	6	
1385:	8	3	1	2	4	3	3	4	
1393:	3	4	4	2	1	3	2	6	
1401:	2	4	7	3	0	3	7	5	
1409:	5	1	3	0	3	3	3	2	
1417:	2	1	0	1	4	1	0	3	
1425:	6	2	2	3	1	2	3	3	
1433:	3	4	1	4	3	4	2	2	
1441:	3	2	3	0	5	0	2	1	
1449:	2	4	4	0	3	2	4	3	
1457:	5	5	36	140	233	103	18	1	
1465:	4	2	4	2	1	1	2	3	
1473:	1	3	2	0	4	1	2	2	
1481:	1	0	1	2	1	1	3	1	
1489:	3	2	2	1	0	2	0	9	
1497:	3	2	1	4	3	1	2	2	
1505:	2	1	3	3	6	1	3	3	
1513:	7	2	2	1	2	1	2	2	
1521:	2	3	1	3	5	3	1	1	
1529:	2	2	0	1	2	1	2	1	
1537:	3	3	1	0	2	3	1	2	
1545:	4	2	2	2	1	1	0	2	
1553:	0	0	0	0	1	0	0	3	
1561:	1	1	2	2	1	1	2	4	
1569:	2	1	1	3	1	2	0	0	
1577:	2	2	3	2	4	2	4	2	
1585:	0	1	4	7	4	1	5	1	
1593:	6	0	6	1	0	2	2	1	
1601:	2	1	2	0	5	2	0	1	
1609:	0	1	4	3	3	0	1	2	
1617:	2	0	2	0	2	1	3	0	
1625:	1	1	2	1	2	2	2	4	
1633:	2	0	1	0	2	3	3	0	
1641:	1	0	3	0	1	2	2	1	
1649:	2	0	0	1	0	2	0	0	
1657:	0	0	0	1	2	1	2	1	

1665: 2 2 1 3 0 1 1 1

Sample Title: CP2211S13-14

Channel	1	2	3	4	5	6	7	8	9
1673:	1	0	0	1	0	1	1	0	
1681:	0	0	2	2	1	1	0	1	
1689:	1	2	0	1	1	0	0	1	
1697:	1	0	1	2	1	0	1	2	
1705:	0	0	2	0	1	0	1	1	
1713:	1	0	1	1	6	0	1	0	
1721:	2	1	1	1	2	1	1	3	
1729:	2	3	3	2	1	3	2	0	
1737:	1	1	0	0	0	1	1	0	
1745:	1	0	0	1	0	0	0	1	
1753:	1	1	1	1	1	3	1	2	
1761:	0	1	9	17	14	7	1	4	
1769:	0	0	0	0	1	1	2	1	
1777:	0	2	1	1	0	1	1	1	
1785:	0	1	0	2	1	0	0	2	
1793:	0	0	1	0	0	1	1	0	
1801:	0	0	0	0	1	0	1	0	
1809:	1	1	0	0	0	2	1	0	
1817:	0	1	0	2	2	0	0	1	
1825:	0	1	0	1	3	0	1	2	
1833:	1	1	2	3	4	4	1	2	
1841:	0	0	0	1	0	0	8	4	
1849:	0	1	0	1	1	1	0	0	
1857:	1	2	1	1	1	1	1	0	
1865:	2	3	1	2	1	0	0	1	
1873:	1	2	1	1	0	0	2	2	
1881:	0	1	1	0	0	0	0	3	
1889:	1	3	1	1	1	0	0	0	
1897:	0	0	1	0	0	2	1	1	
1905:	0	1	0	3	2	1	0	1	
1913:	0	0	0	1	0	0	2	2	
1921:	0	2	2	2	1	2	0	2	
1929:	0	0	1	1	1	0	0	1	
1937:	2	1	1	1	1	2	0	2	
1945:	1	0	1	1	0	1	1	1	
1953:	1	0	0	0	2	2	1	1	
1961:	1	1	1	1	2	2	0	2	
1969:	1	1	0	1	0	2	1	1	
1977:	1	2	1	1	0	0	0	0	
1985:	0	0	0	1	2	0	3	2	
1993:	2	0	2	0	0	1	1	2	
2001:	0	0	0	0	1	0	0	1	
2009:	0	0	2	0	0	0	2	0	
2017:	1	2	1	2	1	2	0	0	
2025:	2	0	0	0	1	1	1	0	
2033:	1	0	3	1	0	1	0	1	
2041:	0	1	0	0	1	3	2	0	
2049:	0	0	2	0	2	0	3	1	
2057:	0	1	0	4	0	1	2	1	
2065:	2	1	2	1	1	2	2	1	
2073:	2	2	0	1	0	0	2	0	
2081:	1	0	0	0	2	2	0	1	
2089:	1	0	1	0	0	1	1	0	

2097: 4 3 1 3 3 2 7 4

Sample Title: CP2211S13-14

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

2529: 0 0 0 0 0 0 0 0 0

Sample Title: CP2211S13-14

Channel	-----	-----	-----	-----	-----	-----	-----	-----
2537:	0	0	0	0	0	0	0	0
2545:	1	0	0	2	0	0	0	0
2553:	0	1	0	0	2	0	0	0
2561:	0	0	1	0	0	0	1	0
2569:	0	0	0	0	1	0	0	0
2577:	1	1	1	0	0	0	0	0
2585:	0	0	0	0	0	1	2	1
2593:	0	0	0	0	1	0	0	0
2601:	0	1	1	0	0	0	0	1
2609:	0	1	2	3	11	14	27	10
2617:	1	0	1	2	0	1	0	1
2625:	0	1	0	0	1	0	1	0
2633:	0	0	1	0	0	0	0	1
2641:	0	1	1	0	0	1	0	1
2649:	0	0	1	2	1	0	0	0
2657:	1	0	0	0	0	0	0	0
2665:	0	0	0	0	0	0	0	0
2673:	0	0	2	1	1	0	0	0
2681:	0	0	0	0	1	0	1	1
2689:	0	0	1	0	0	0	0	0
2697:	0	0	0	2	2	1	0	1
2705:	0	0	0	0	0	1	0	0
2713:	0	0	1	0	0	0	0	0
2721:	0	0	0	1	0	0	0	0
2729:	1	1	0	2	0	0	0	0
2737:	0	1	0	0	0	1	0	0
2745:	1	0	0	0	0	0	0	1
2753:	0	0	1	0	0	0	0	1
2761:	0	0	0	0	0	0	1	0
2769:	0	1	0	0	0	0	0	0
2777:	0	0	1	0	0	0	0	0
2785:	0	0	1	0	0	0	0	1
2793:	0	0	0	0	0	0	0	0
2801:	1	1	0	1	0	0	0	0
2809:	0	0	0	0	0	0	1	1
2817:	0	0	0	0	0	0	0	0
2825:	0	0	0	1	0	0	1	0
2833:	0	1	0	0	0	0	0	0
2841:	0	0	0	0	1	0	0	0
2849:	0	0	0	1	0	0	0	0
2857:	0	0	2	1	0	0	0	0
2865:	0	1	0	1	0	0	0	0
2873:	0	0	0	0	0	0	1	2
2881:	0	0	0	1	0	0	1	1
2889:	0	0	0	0	0	1	0	0
2897:	0	0	0	0	0	0	0	0
2905:	0	1	0	0	0	0	0	0
2913:	0	1	0	0	0	1	0	1
2921:	0	0	0	0	0	0	0	0
2929:	1	0	1	0	0	0	0	0
2937:	0	0	0	0	1	0	0	0
2945:	0	0	1	0	0	0	0	0
2953:	0	0	0	1	0	0	1	0

2961: 0 0 1 0 0 0 0 0

Sample Title: CP2211S13-14

Channel	1	0	0	0	0	0	0	0
2969:	1	0	0	0	0	0	0	0
2977:	0	0	1	0	1	0	0	0
2985:	1	1	0	0	0	0	1	0
2993:	0	1	0	0	0	0	1	0
3001:	0	1	0	0	1	0	0	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	0	0
3033:	1	0	0	0	0	0	0	0
3041:	0	0	1	0	1	0	0	0
3049:	0	0	0	0	1	0	0	0
3057:	0	0	0	0	0	0	0	0
3065:	0	1	0	0	0	0	0	1
3073:	0	0	0	0	1	0	0	0
3081:	0	0	0	0	0	0	0	1
3089:	0	0	0	0	0	0	0	0
3097:	0	0	0	1	0	1	0	0
3105:	0	0	0	0	0	0	2	0
3113:	0	0	0	0	1	0	1	0
3121:	1	0	1	1	1	0	0	0
3129:	0	0	0	0	0	0	0	0
3137:	0	0	0	1	0	0	0	0
3145:	1	0	0	0	0	0	0	0
3153:	0	0	0	0	0	0	0	0
3161:	0	0	0	0	0	0	0	0
3169:	0	0	0	0	0	0	0	0
3177:	0	1	1	0	0	0	0	0
3185:	0	0	0	0	0	0	0	0
3193:	0	0	0	1	1	5	1	0
3201:	0	0	0	0	0	0	0	0
3209:	0	0	1	0	0	0	0	0
3217:	0	0	0	0	0	0	0	0
3225:	0	1	0	0	0	0	0	0
3233:	1	0	0	0	0	0	0	0
3241:	0	0	0	1	0	0	0	1
3249:	1	0	0	0	0	0	0	0
3257:	0	0	0	0	0	0	0	0
3265:	0	0	1	0	0	0	0	0
3273:	0	0	0	1	0	0	0	0
3281:	0	0	0	0	0	0	0	0
3289:	0	0	0	0	0	0	0	0
3297:	0	1	0	0	0	0	0	0
3305:	0	0	0	1	0	0	0	0
3313:	1	0	0	0	0	0	0	0
3321:	0	0	0	1	0	0	0	0
3329:	0	0	1	0	1	0	0	1
3337:	0	0	0	0	0	0	1	0
3345:	0	0	0	0	0	1	1	0
3353:	0	0	0	1	0	0	0	0
3361:	0	0	0	0	0	0	0	0
3369:	0	0	0	0	1	0	0	0
3377:	0	0	0	0	0	0	0	0
3385:	0	1	0	0	0	0	1	1

3393: 0 0 0 0 0 0 0 0 0

Sample Title: CP2211S13-14

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

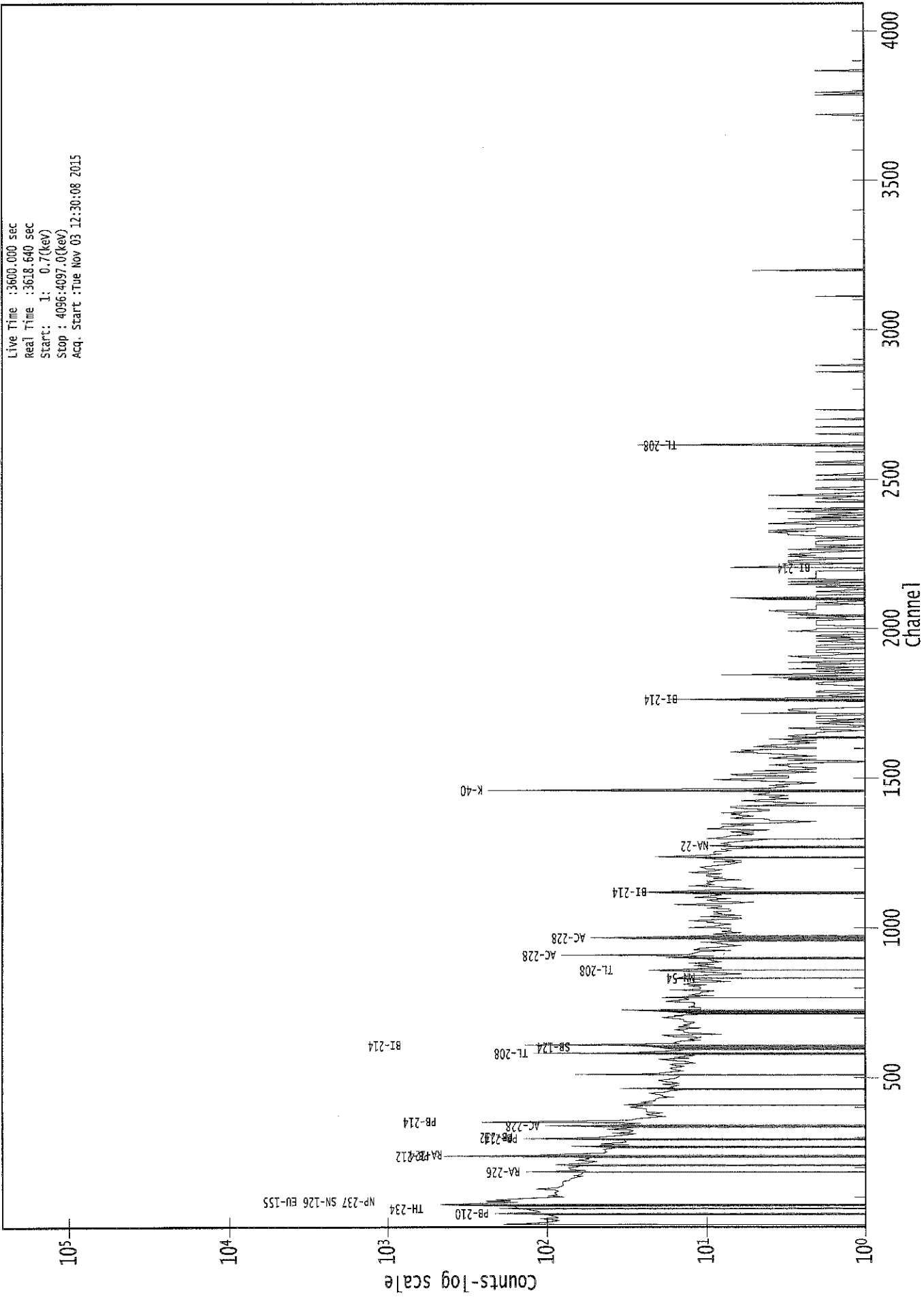
3825: 0 0 0 0 0 0 0 0

Sample Title: CP2211S13-14

Channel	-----	-----	-----	-----	-----	-----	-----	-----
3833:	0	0	0	0	1	1	0	0
3841:	0	0	0	0	0	0	0	0
3849:	0	0	0	0	0	0	0	0
3857:	1	1	0	0	0	0	1	0
3865:	0	0	2	1	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	1	0	0	0	0	0
3897:	0	0	1	0	1	0	1	0
3905:	0	0	0	0	0	0	0	0
3913:	0	0	0	1	0	0	1	0
3921:	0	0	0	0	0	0	0	0
3929:	0	0	1	0	0	0	0	0
3937:	0	1	0	0	0	1	0	0
3945:	0	0	0	0	0	0	0	1
3953:	0	0	0	1	0	0	0	0
3961:	0	0	0	0	0	0	0	0
3969:	0	0	0	0	0	0	0	0
3977:	0	0	0	0	0	0	0	0
3985:	0	0	0	0	0	0	0	0
3993:	0	0	0	0	1	0	1	0
4001:	0	1	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	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	1	1	1	1	0	0	1
4081:	0	0	0	0	0	0	0	0
4089:	0	0	0	0	0	0	0	1

0000029031.CNF

Live Time :3600.000 sec
Real Time :3618.640 sec
Start: 1: 0.7(keV)
Stop : 4096.4097.0(keV)
Acq. Start :Tue Nov 03 12:30:08 2015



KB
11/3/15Analysis Report for 1510064-11
CP2211S16-17

GAMMA SPECTRUM ANALYSIS

Sample Identification : 1510064-11
Sample Description : CP2211S16-17
Sample Type : SOIL

Sample Size : 4.409E+02 grams
Facility : Countroom

Sample Taken On : 10/6/2015 7:37:08AM
Acquisition Started : 11/3/2015 12:30:17PM

Procedure : GAS-1402 pCi
Operator : Administrator
Detector Name : GE4
Geometry : GAS-1402
Live Time : 3600.0 seconds
Real Time : 3671.6 seconds

Dead Time : 1.95 %

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 : 29032

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
11/3/15

Analysis Report for 1510064-11
CP2211S16-17

PEAK LOCATE REPORT

Peak Locate Performed on : 11/3/2015 1:31:30PM
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	76.24	75.51	0.0000	0.00
2	87.29	86.56	0.0000	0.00
3	92.64	91.92	0.0000	0.00
4	185.80	185.11	0.0000	0.00
5	209.23	208.56	0.0000	0.00
6	238.85	238.18	0.0000	0.00
7	270.35	269.70	0.0000	0.00
8	279.00	278.35	0.0000	0.00
9	295.43	294.80	0.0000	0.00
10	339.17	338.55	0.0000	0.00
11	351.97	351.36	0.0000	0.00
12	360.45	359.84	0.0000	0.00
13	379.25	378.65	0.0000	0.00
14	463.52	462.95	0.0000	0.00
15	473.29	472.74	0.0000	0.00
16	480.87	480.32	0.0000	0.00
17	511.14	510.60	0.0000	0.00
18	523.83	523.29	0.0000	0.00
19	583.05	582.54	0.0000	0.00
20	609.40	608.90	0.0000	0.00
21	727.15	726.72	0.0000	0.00
22	794.80	794.40	0.0000	0.00
23	863.91	863.54	0.0000	0.00
24	911.21	910.86	0.0000	0.00
25	919.30	918.96	0.0000	0.00
26	942.29	941.97	0.0000	0.00
27	1036.16	1035.89	0.0000	0.00
28	1120.39	1120.17	0.0000	0.00
29	1238.97	1238.81	0.0000	0.00
30	1379.11	1379.03	0.0000	0.00
31	1460.99	1460.96	0.0000	0.00
32	1536.60	1536.62	0.0000	0.00
33	1542.31	1542.33	0.0000	0.00
34	1589.42	1589.47	0.0000	0.00
35	1623.97	1624.05	0.0000	0.00
36	1651.43	1651.52	0.0000	0.00
37	1723.86	1724.00	0.0000	0.00
38	1735.11	1735.25	0.0000	0.00
39	1764.58	1764.75	0.0000	0.00
40	2614.67	2615.44	0.0000	0.00

Analysis Report for 1510064-11
CP2211S16-17

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1510064-11
CP2211S16-17

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/3/2015 1:31:30PM

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	76.24	70 - 79	75.51	6.24E+02	126.87	1.94E+03	4.03
m	2	87.29	81 - 97	86.56	2.05E+02	115.62	1.68E+03	3.78
	3	92.64	81 - 97	91.92	2.08E+02	113.65	1.40E+03	3.53
	4	185.80	180 - 189	185.11	1.70E+02	73.73	6.79E+02	2.55
	5	209.23	206 - 211	208.56	6.27E+01	44.61	3.39E+02	3.32
	6	238.85	231 - 245	238.18	5.53E+02	97.39	7.68E+02	2.82
	7	270.35	267 - 275	269.70	4.48E+01	49.68	3.44E+02	3.74
	8	279.00	275 - 283	278.35	4.19E+01	45.83	2.98E+02	2.05
	9	295.43	286 - 302	294.80	1.57E+02	83.46	6.03E+02	3.08
	10	339.17	332 - 345	338.55	1.30E+02	64.10	3.98E+02	2.42
	11	351.97	347 - 356	351.36	2.31E+02	49.48	2.12E+02	2.15
	12	360.45	357 - 363	359.84	5.55E+01	29.61	1.19E+02	4.42
	13	379.25	375 - 382	378.65	3.76E+01	33.17	1.55E+02	4.96
	14	463.52	459 - 467	462.95	3.75E+01	33.41	1.49E+02	1.75
	15	473.29	470 - 475	472.74	1.67E+01	21.00	7.46E+01	2.95
	16	480.87	477 - 485	480.32	2.82E+01	29.02	1.12E+02	3.77
	17	511.14	505 - 517	510.60	1.08E+02	43.20	1.69E+02	2.95
	18	523.83	518 - 528	523.29	3.56E+01	33.62	1.31E+02	6.42
	19	583.05	577 - 589	582.54	1.32E+02	42.47	1.53E+02	2.43
	20	609.40	603 - 613	608.90	1.55E+02	40.12	1.32E+02	2.00
	21	727.15	722 - 731	726.72	2.91E+01	30.38	1.16E+02	1.66
	22	794.80	792 - 797	794.40	1.98E+01	14.59	2.64E+01	3.08
	23	863.91	859 - 870	863.54	2.41E+01	25.85	6.97E+01	1.18
M	24	911.21	906 - 927	910.86	7.16E+01	25.44	6.53E+01	3.14
m	25	919.30	906 - 927	918.96	1.31E+01	19.77	3.21E+01	3.14
	26	942.29	940 - 946	941.97	1.91E+01	15.30	2.99E+01	1.84
	27	1036.16	1033 - 1043	1035.89	1.87E+01	20.35	4.86E+01	1.59
	28	1120.39	1115 - 1123	1120.17	3.40E+01	22.07	5.41E+01	2.15
	29	1238.97	1232 - 1245	1238.81	3.87E+01	26.85	6.26E+01	5.10
	30	1379.11	1376 - 1383	1379.03	1.46E+01	13.42	2.08E+01	2.14
	31	1460.99	1455 - 1465	1460.96	2.45E+02	33.21	1.50E+01	2.97
M	32	1536.60	1535 - 1544	1536.62	9.07E+00	5.29	1.00E+00	3.36
m	33	1542.31	1535 - 1544	1542.33	9.35E+00	6.71	4.27E+00	3.24
	34	1589.42	1584 - 1595	1589.47	1.70E+01	8.25	0.00E+00	2.97
	35	1623.97	1620 - 1628	1624.05	9.15E+00	9.62	7.69E+00	5.82
	36	1651.43	1648 - 1655	1651.52	7.90E+00	7.48	4.20E+00	2.66
	37	1723.86	1719 - 1726	1724.00	7.00E+00	5.29	0.00E+00	1.16
	38	1735.11	1732 - 1738	1735.25	8.00E+00	5.66	0.00E+00	3.25
	39	1764.58	1760 - 1767	1764.75	2.04E+01	10.20	3.23E+00	1.63
	40	2614.67	2610 - 2620	2615.44	2.73E+01	12.26	5.33E+00	3.53

Analysis Report for 1510064-11
CP2211S16-17

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 : 11/3/2015 1:31:30PM

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	76.24	70 - 79	6.24E+02	126.87	1.94E+03	9.59E+01
M	2	87.29	81 - 97	2.05E+02	115.62	1.68E+03	6.74E+01
m	3	92.64	81 - 97	2.08E+02	113.65	1.40E+03	6.15E+01
	4	185.80	180 - 189	1.70E+02	73.73	6.79E+02	5.67E+01
	5	209.23	206 - 211	6.27E+01	44.61	3.39E+02	3.43E+01
	6	238.85	231 - 245	5.53E+02	97.39	7.68E+02	7.01E+01
	7	270.35	267 - 275	4.48E+01	49.68	3.44E+02	3.93E+01
	8	279.00	275 - 283	4.19E+01	45.83	2.98E+02	3.61E+01
	9	295.43	286 - 302	1.57E+02	83.46	6.03E+02	6.54E+01
	10	339.17	332 - 345	1.30E+02	64.10	3.98E+02	4.93E+01
	11	351.97	347 - 356	2.31E+02	49.48	2.12E+02	3.21E+01
	12	360.45	357 - 363	5.55E+01	29.61	1.19E+02	2.10E+01
	13	379.25	375 - 382	3.76E+01	33.17	1.55E+02	2.53E+01
	14	463.52	459 - 467	3.75E+01	33.41	1.49E+02	2.56E+01
	15	473.29	470 - 475	1.67E+01	21.00	7.46E+01	1.59E+01
	16	480.87	477 - 485	2.82E+01	29.02	1.12E+02	2.22E+01
	17	511.14	505 - 517	1.08E+02	43.20	1.69E+02	3.12E+01
	18	523.83	518 - 528	3.56E+01	33.62	1.31E+02	2.58E+01
	19	583.05	577 - 589	1.32E+02	42.47	1.53E+02	2.94E+01
	20	609.40	603 - 613	1.55E+02	40.12	1.32E+02	2.59E+01
	21	727.15	722 - 731	2.91E+01	30.38	1.16E+02	2.33E+01
	22	794.80	792 - 797	1.98E+01	14.59	2.64E+01	9.51E+00
	23	863.91	859 - 870	2.41E+01	25.85	6.97E+01	1.97E+01
M	24	911.21	906 - 927	7.16E+01	25.44	6.53E+01	1.33E+01
m	25	919.30	906 - 927	1.31E+01	19.77	3.21E+01	9.31E+00
	26	942.29	940 - 946	1.91E+01	15.30	2.99E+01	1.03E+01
	27	1036.16	1033 - 1043	1.87E+01	20.35	4.86E+01	1.51E+01
	28	1120.39	1115 - 1123	3.40E+01	22.07	5.41E+01	1.54E+01
	29	1238.97	1232 - 1245	3.87E+01	26.85	6.26E+01	1.96E+01
	30	1379.11	1376 - 1383	1.46E+01	13.42	2.08E+01	9.06E+00
	31	1460.99	1455 - 1465	2.45E+02	33.21	1.50E+01	9.03E+00

Analysis Report for 1510064-11

CP2211S16-17

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
M	32	1536.60	1535 -	1544	9.07E+00	5.29	1.00E+00	1.64E+00
m	33	1542.31	1535 -	1544	9.35E+00	6.71	4.27E+00	3.40E+00
	34	1589.42	1584 -	1595	1.70E+01	8.25	0.00E+00	0.00E+00
	35	1623.97	1620 -	1628	9.15E+00	9.62	7.69E+00	6.15E+00
	36	1651.43	1648 -	1655	7.90E+00	7.48	4.20E+00	4.06E+00
	37	1723.86	1719 -	1726	7.00E+00	5.29	0.00E+00	0.00E+00
	38	1735.11	1732 -	1738	8.00E+00	5.66	0.00E+00	0.00E+00
	39	1764.58	1760 -	1767	2.04E+01	10.20	3.23E+00	3.90E+00
	40	2614.67	2610 -	2620	2.73E+01	12.26	5.33E+00	5.26E+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 : 11/3/2015 1:31:30PM

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	76.24	70 -	79	75.51	6.24E+02	126.87	1.94E+03	.....
M	2	87.29	81 -	97	86.56	2.05E+02	115.62	1.68E+03	SN-126 CD-109 NP-237 EU-155
m	3	92.64	81 -	97	91.92	2.08E+02	113.65	1.40E+03	GA-67
	4	185.80	180 -	189	185.11	1.70E+02	73.73	6.79E+02	RA-226
	5	209.23	206 -	211	208.56	6.27E+01	44.61	3.39E+02	GA-67 CM-243
	6	238.85	231 -	245	238.18	5.53E+02	97.39	7.68E+02	PB-212
	7	270.35	267 -	275	269.70	4.48E+01	49.68	3.44E+02	.....
	8	279.00	275 -	283	278.35	4.19E+01	45.83	2.98E+02	HG-203 SE-75
	9	295.43	286 -	302	294.80	1.57E+02	83.46	6.03E+02	PB-214
	10	339.17	332 -	345	338.55	1.30E+02	64.10	3.98E+02	AC-228
	11	351.97	347 -	356	351.36	2.31E+02	49.48	2.12E+02	PB-214
	12	360.45	357 -	363	359.84	5.55E+01	29.61	1.19E+02	.....

Analysis Report for 1510064-11

CP2211S16-17

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
13	379.25	375 -	382	378.65	3.76E+01	33.17	1.55E+02	.....
14	463.52	459 -	467	462.95	3.75E+01	33.41	1.49E+02	SB-125
15	473.29	470 -	475	472.74	1.67E+01	21.00	7.46E+01	SB-127
16	480.87	477 -	485	480.32	2.82E+01	29.02	1.12E+02	.....
17	511.14	505 -	517	510.60	1.08E+02	43.20	1.69E+02	.....
18	523.83	518 -	528	523.29	3.56E+01	33.62	1.31E+02	.....
19	583.05	577 -	589	582.54	1.32E+02	42.47	1.53E+02	TL-208
20	609.40	603 -	613	608.90	1.55E+02	40.12	1.32E+02	BI-214
21	727.15	722 -	731	726.72	2.91E+01	30.38	1.16E+02	BI-212
22	794.80	792 -	797	794.40	1.98E+01	14.59	2.64E+01	.....
23	863.91	859 -	870	863.54	2.41E+01	25.85	6.97E+01	.....
M 24	911.21	906 -	927	910.86	7.16E+01	25.44	6.53E+01	AC-228 LU-172
m 25	919.30	906 -	927	918.96	1.31E+01	19.77	3.21E+01	.....
26	942.29	940 -	946	941.97	1.91E+01	15.30	2.99E+01	.....
27	1036.16	1033 -	1043	1035.89	1.87E+01	20.35	4.86E+01	.....
28	1120.39	1115 -	1123	1120.17	3.40E+01	22.07	5.41E+01	BI-214 SC-46 TA-182
29	1238.97	1232 -	1245	1238.81	3.87E+01	26.85	6.26E+01	CO-56
30	1379.11	1376 -	1383	1379.03	1.46E+01	13.42	2.08E+01	.....
31	1460.99	1455 -	1465	1460.96	2.45E+02	33.21	1.50E+01	K-40
M 32	1536.60	1535 -	1544	1536.62	9.07E+00	5.29	1.00E+00	.....
m 33	1542.31	1535 -	1544	1542.33	9.35E+00	6.71	4.27E+00	.....
34	1589.42	1584 -	1595	1589.47	1.70E+01	8.25	0.00E+00	.....
35	1623.97	1620 -	1628	1624.05	9.15E+00	9.62	7.69E+00	.....
36	1651.43	1648 -	1655	1651.52	7.90E+00	7.48	4.20E+00	.....
37	1723.86	1719 -	1726	1724.00	7.00E+00	5.29	0.00E+00	.....
38	1735.11	1732 -	1738	1735.25	8.00E+00	5.66	0.00E+00	.....
39	1764.58	1760 -	1767	1764.75	2.04E+01	10.20	3.23E+00	BI-214
40	2614.67	2610 -	2620	2615.44	2.73E+01	12.26	5.33E+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 : 11/3/2015 1:31:30PM

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
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Analysis Report for 1510064-11

CP2211S16-17

	1	76.24	6.24E+02	126.87	2.12E-02	1.69E-03
M	2	87.29	2.05E+02	115.62	1.97E-02	1.64E-03
m	3	92.64	2.08E+02	113.65	1.90E-02	1.62E-03
	4	185.80	1.70E+02	73.73	1.16E-02	1.15E-03
	5	209.23	6.27E+01	44.61	1.05E-02	1.08E-03
	6	238.85	5.53E+02	97.39	9.41E-03	9.86E-04
	7	270.35	4.48E+01	49.68	8.43E-03	8.88E-04
	8	279.00	4.19E+01	45.83	8.20E-03	8.62E-04
	9	295.43	1.57E+02	83.46	7.78E-03	8.43E-04
	10	339.17	1.30E+02	64.10	6.84E-03	7.94E-04
	11	351.97	2.31E+02	49.48	6.61E-03	7.80E-04
	12	360.45	5.55E+01	29.61	6.46E-03	7.71E-04
	13	379.25	3.76E+01	33.17	6.16E-03	7.50E-04
	14	463.52	3.75E+01	33.41	5.07E-03	6.31E-04
	15	473.29	1.67E+01	21.00	4.97E-03	6.16E-04
	16	480.87	2.82E+01	29.02	4.89E-03	6.05E-04
	17	511.14	1.08E+02	43.20	4.61E-03	5.61E-04
	18	523.83	3.56E+01	33.62	4.50E-03	5.42E-04
	19	583.05	1.32E+02	42.47	4.05E-03	4.56E-04
	20	609.40	1.55E+02	40.12	3.87E-03	4.17E-04
	21	727.15	2.91E+01	30.38	3.25E-03	3.04E-04
	22	794.80	1.98E+01	14.59	2.98E-03	2.66E-04
	23	863.91	2.41E+01	25.85	2.75E-03	2.27E-04
M	24	911.21	7.16E+01	25.44	2.61E-03	2.06E-04
m	25	919.30	1.31E+01	19.77	2.59E-03	2.05E-04
	26	942.29	1.91E+01	15.30	2.53E-03	2.02E-04
	27	1036.16	1.87E+01	20.35	2.31E-03	1.90E-04
	28	1120.39	3.40E+01	22.07	2.14E-03	1.79E-04
	29	1238.97	3.87E+01	26.85	1.95E-03	1.90E-04
	30	1379.11	1.46E+01	13.42	1.77E-03	2.06E-04
	31	1460.99	2.45E+02	33.21	1.68E-03	1.89E-04
M	32	1536.60	9.07E+00	5.29	1.61E-03	1.73E-04
m	33	1542.31	9.35E+00	6.71	1.61E-03	1.72E-04
	34	1589.42	1.70E+01	8.25	1.57E-03	1.62E-04
	35	1623.97	9.15E+00	9.62	1.54E-03	1.55E-04
	36	1651.43	7.90E+00	7.48	1.52E-03	1.49E-04
	37	1723.86	7.00E+00	5.29	1.46E-03	1.34E-04
	38	1735.11	8.00E+00	5.66	1.45E-03	1.32E-04
	39	1764.58	2.04E+01	10.20	1.43E-03	1.26E-04
	40	2614.67	2.73E+01	12.26	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 : 11/3/2015 1:31:30PM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000028944.CNF

: 00641

Analysis Report for 1510064-11

CP2211S16-17

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	1	76.24	6.24E+02	126.87			6.24E+02	1.27E+02
M	2	87.29	2.05E+02	115.62			2.05E+02	1.16E+02
m	3	92.64	2.08E+02	113.65	5.44E+01	8.36E+00	1.54E+02	1.14E+02
	4	185.80	1.70E+02	73.73	1.43E+01	7.33E+00	1.55E+02	7.41E+01
	5	209.23	6.27E+01	44.61			6.27E+01	4.46E+01
	6	238.85	5.53E+02	97.39	1.09E+01	6.39E+00	5.42E+02	9.76E+01
	7	270.35	4.48E+01	49.68			4.48E+01	4.97E+01
	8	279.00	4.19E+01	45.83			4.19E+01	4.58E+01
	9	295.43	1.57E+02	83.46			1.57E+02	8.35E+01
	10	339.17	1.30E+02	64.10			1.30E+02	6.41E+01
	11	351.97	2.31E+02	49.48	8.07E+00	5.01E+00	2.23E+02	4.97E+01
	12	360.45	5.55E+01	29.61			5.55E+01	2.96E+01
	13	379.25	3.76E+01	33.17			3.76E+01	3.32E+01
	14	463.52	3.75E+01	33.41			3.75E+01	3.34E+01
	15	473.29	1.67E+01	21.00			1.67E+01	2.10E+01
	16	480.87	2.82E+01	29.02			2.82E+01	2.90E+01
	17	511.14	1.08E+02	43.20	4.21E+01	4.92E+00	6.54E+01	4.35E+01
	18	523.83	3.56E+01	33.62			3.56E+01	3.36E+01
	19	583.05	1.32E+02	42.47			1.32E+02	4.25E+01
	20	609.40	1.55E+02	40.12	5.16E+00	1.63E+00	1.50E+02	4.02E+01
	21	727.15	2.91E+01	30.38			2.91E+01	3.04E+01
	22	794.80	1.98E+01	14.59			1.98E+01	1.46E+01
	23	863.91	2.41E+01	25.85			2.41E+01	2.58E+01
M	24	911.21	7.16E+01	25.44	1.01E+00	2.85E+00	7.06E+01	2.56E+01
m	25	919.30	1.31E+01	19.77			1.31E+01	1.98E+01
	26	942.29	1.91E+01	15.30			1.91E+01	1.53E+01
	27	1036.16	1.87E+01	20.35			1.87E+01	2.03E+01
	28	1120.39	3.40E+01	22.07			3.40E+01	2.21E+01
	29	1238.97	3.87E+01	26.85			3.87E+01	2.69E+01
	30	1379.11	1.46E+01	13.42			1.46E+01	1.34E+01
	31	1460.99	2.45E+02	33.21			2.45E+02	3.32E+01
M	32	1536.60	9.07E+00	5.29			9.07E+00	5.29E+00
m	33	1542.31	9.35E+00	6.71			9.35E+00	6.71E+00
	34	1589.42	1.70E+01	8.25			1.70E+01	8.25E+00
	35	1623.97	9.15E+00	9.62			9.15E+00	9.62E+00
	36	1651.43	7.90E+00	7.48			7.90E+00	7.48E+00
	37	1723.86	7.00E+00	5.29			7.00E+00	5.29E+00
	38	1735.11	8.00E+00	5.66			8.00E+00	5.66E+00
	39	1764.58	2.04E+01	10.20	1.11E-01	9.77E-01	2.03E+01	1.02E+01
	40	2614.67	2.73E+01	12.26	1.20E+00	1.02E+00	2.61E+01	1.23E+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 1510064-11

CP2211S16-17

AREA CORRECTION REPORT REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 11/3/2015 1:31:30PM

Ref. Peak Energy : 0.00 Reference Date :
 Peak Ratio : 0.00 Uncertainty : 0.00
 Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000028944.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	76.24	6.24E+02	126.87		6.24E+02	1.27E+02	
M	2	87.29	2.05E+02	115.62		2.05E+02	1.16E+02	
m	3	92.64	2.08E+02	113.65	5.44E+01	8.36E+00	1.54E+02	1.14E+02
	4	185.80	1.70E+02	73.73	1.43E+01	7.33E+00	1.55E+02	7.41E+01
	5	209.23	6.27E+01	44.61			6.27E+01	4.46E+01
	6	238.85	5.53E+02	97.39	1.09E+01	6.39E+00	5.42E+02	9.76E+01
	7	270.35	4.48E+01	49.68			4.48E+01	4.97E+01
	8	279.00	4.19E+01	45.83			4.19E+01	4.58E+01
	9	295.43	1.57E+02	83.46			1.57E+02	8.35E+01
	10	339.17	1.30E+02	64.10			1.30E+02	6.41E+01
	11	351.97	2.31E+02	49.48	8.07E+00	5.01E+00	2.23E+02	4.97E+01
	12	360.45	5.55E+01	29.61			5.55E+01	2.96E+01
	13	379.25	3.76E+01	33.17			3.76E+01	3.32E+01
	14	463.52	3.75E+01	33.41			3.75E+01	3.34E+01
	15	473.29	1.67E+01	21.00			1.67E+01	2.10E+01
	16	480.87	2.82E+01	29.02			2.82E+01	2.90E+01
	17	511.14	1.08E+02	43.20	4.21E+01	4.92E+00	6.54E+01	4.35E+01
	18	523.83	3.56E+01	33.62			3.56E+01	3.36E+01
	19	583.05	1.32E+02	42.47			1.32E+02	4.25E+01
	20	609.40	1.55E+02	40.12	5.16E+00	1.63E+00	1.50E+02	4.02E+01
	21	727.15	2.91E+01	30.38			2.91E+01	3.04E+01
	22	794.80	1.98E+01	14.59			1.98E+01	1.46E+01
	23	863.91	2.41E+01	25.85			2.41E+01	2.58E+01
M	24	911.21	7.16E+01	25.44	1.01E+00	2.85E+00	7.06E+01	2.56E+01
m	25	919.30	1.31E+01	19.77			1.31E+01	1.98E+01
	26	942.29	1.91E+01	15.30			1.91E+01	1.53E+01
	27	1036.16	1.87E+01	20.35			1.87E+01	2.03E+01
	28	1120.39	3.40E+01	22.07			3.40E+01	2.21E+01
	29	1238.97	3.87E+01	26.85			3.87E+01	2.69E+01
	30	1379.11	1.46E+01	13.42			1.46E+01	1.34E+01
	31	1460.99	2.45E+02	33.21			2.45E+02	3.32E+01
M	32	1536.60	9.07E+00	5.29			9.07E+00	5.29E+00
m	33	1542.31	9.35E+00	6.71			9.35E+00	6.71E+00
	34	1589.42	1.70E+01	8.25			1.70E+01	8.25E+00
	35	1623.97	9.15E+00	9.62			9.15E+00	9.62E+00
	36	1651.43	7.90E+00	7.48			7.90E+00	7.48E+00
	37	1723.86	7.00E+00	5.29			7.00E+00	5.29E+00
	38	1735.11	8.00E+00	5.66			8.00E+00	5.66E+00
	39	1764.58	2.04E+01	10.20	1.11E-01	9.77E-01	2.03E+01	1.02E+01
	40	2614.67	2.73E+01	12.26	1.20E+00	1.02E+00	2.61E+01	1.23E+01

Analysis Report for 1510064-11
CP2211S16-17

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	0.995	1460.81 *	10.67	2.33E+01	4.12E+00
GA-67	0.420	93.31 *	35.70	1.55E+02	6.08E+02
		208.95 *	2.24	1.82E+03	6.83E+03
		300.22	16.00		
CD-109	0.915	88.03 *	3.72	4.97E+00	2.85E+00
SN-126	0.987	87.57 *	37.00	4.79E-01	2.73E-01
EU-155	0.323	86.50 *	30.90	5.80E-01	3.30E-01
		105.30	20.70		
HG-203	0.992	279.19 *	77.30	1.71E-01	1.88E-01
TL-208	0.886	583.14 *	30.22	1.83E+00	6.26E-01
		860.37	4.48		
		2614.66 *	35.85	1.16E+00	5.58E-01
BI-212	0.779	727.17 *	11.80	1.29E+00	1.35E+00
		1620.62	2.75		
PB-212	0.890	238.63 *	44.60	2.20E+00	4.58E-01
		300.09	3.41		
BI-214	0.935	609.31 *	46.30	1.42E+00	4.11E-01
		1120.29 *	15.10	1.79E+00	1.17E+00
		1764.49 *	15.80	1.52E+00	7.81E-01
		2204.22	4.98		
PB-214	0.997	295.21 *	19.19	1.80E+00	9.72E-01
		351.92 *	37.19	1.55E+00	3.90E-01
RA-226	0.973	186.21 *	3.28	6.94E+00	1.31E+01
AC-228	0.561	338.32 *	11.40	2.83E+00	1.44E+00
		911.07 *	27.70	1.66E+00	6.17E-01
		969.11	16.60		
NP-237	0.906	86.50 *	12.60	1.41E+00	8.01E-01

Analysis Report for 1510064-11
CP2211S16-17

* = 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 : 11/3/2015 1:31:30PM
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	76.24	1.73221E-01	10.17		
7	270.35	1.24341E-02	55.49		
12	360.45	1.54167E-02	26.67		
13	379.25	1.04469E-02	44.09		
14	463.52	1.04191E-02	44.54	Tol.	SB-125
15	473.29	4.64506E-03	62.79	Tol.	SB-127
16	480.87	7.82242E-03	51.53	Sum	
17	511.14	1.81558E-02	33.26		
18	523.83	9.89961E-03	47.16		
22	794.80	5.49663E-03	36.88	Sum	
23	863.91	6.70433E-03	53.54		
m 25	919.30	3.63420E-03	75.57		
26	942.29	5.29412E-03	40.13		
27	1036.16	5.19380E-03	54.41		
29	1238.97	1.07520E-02	34.69	Tol.	CO-56
30	1379.11	4.06111E-03	45.88		
M 32	1536.60	2.52070E-03	29.16		
m 33	1542.31	2.59808E-03	35.86		
34	1589.42	4.72222E-03	24.25		
35	1623.97	2.54274E-03	52.53		
36	1651.43	2.19444E-03	47.36		
37	1723.86	1.94444E-03	37.80		
38	1735.11	2.22222E-03	35.36		

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

Analysis Report for 1510064-11

CP2211S16-17

NUCLIDE IDENTIFICATION REPORT

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

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.99	1460.81 *	10.67	2.33E+01	4.12E+00
GA-67	0.42	93.31 *	35.70	1.55E+02	6.08E+02
		208.95 *	2.24	1.82E+03	6.83E+03
		300.22	16.00		
		88.03 *	3.72	4.97E+00	2.85E+00
SN-126	0.98	87.57 *	37.00	4.79E-01	2.73E-01
EU-155	0.32	86.50 *	30.90	5.80E-01	3.30E-01
		105.30	20.70		
HG-203	0.99	279.19 *	77.30	1.71E-01	1.88E-01
TL-208	0.88	583.14 *	30.22	1.83E+00	6.26E-01
		860.37	4.48		
		2614.66 *	35.85	1.16E+00	5.58E-01
BI-212	0.77	727.17 *	11.80	1.29E+00	1.35E+00
		1620.62	2.75		
PB-212	0.89	238.63 *	44.60	2.20E+00	4.58E-01
		300.09	3.41		
BI-214	0.93	609.31 *	46.30	1.42E+00	4.11E-01
		1120.29 *	15.10	1.79E+00	1.17E+00
		1764.49 *	15.80	1.52E+00	7.81E-01
		2204.22	4.98		
PB-214	0.99	295.21 *	19.19	1.80E+00	9.72E-01
		351.92 *	37.19	1.55E+00	3.90E-01
RA-226	0.97	186.21 *	3.28	6.94E+00	1.31E+01
AC-228	0.56	338.32 *	11.40	2.83E+00	1.44E+00
		911.07 *	27.70	1.66E+00	6.17E-01
		969.11	16.60		
NP-237	0.90	86.50 *	12.60	1.41E+00	8.01E-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 1510064-11

CP2211S16-17

INTERFERENCE CORRECTED REPORT

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
K-40	0.995	2.33E+01	4.12E+00	
GA-67	0.420	1.97E+02	7.52E+02	
? CD-109	0.915	4.97E+00	2.85E+00	
? SN-126	0.987	4.79E-01	2.73E-01	
? EU-155	0.323	5.80E-01	3.30E-01	
HG-203	0.992	1.71E-01	1.88E-01	
TL-208	0.886	1.46E+00	4.17E-01	
BI-212	0.779	1.29E+00	1.35E+00	
PB-212	0.890	2.20E+00	4.58E-01	
BI-214	0.935	1.47E+00	3.47E-01	
PB-214	0.997	1.58E+00	3.62E-01	
RA-226	0.973	6.94E+00	1.31E+01	
AC-228	0.561	1.85E+00	5.67E-01	
? NP-237	0.906	1.41E+00	8.01E-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 1510064-11
CP2211S16-17

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/3/2015 1:31:30PM
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	76.24	1.73221E-01	10.17		
7	270.35	1.24341E-02	55.49		
12	360.45	1.54167E-02	26.67		
13	379.25	1.04469E-02	44.09		
14	463.52	1.04191E-02	44.54	Tol.	SB-125
15	473.29	4.64506E-03	62.79	Tol.	SB-127
16	480.87	7.82242E-03	51.53	Sum	
17	511.14	1.81558E-02	33.26		
18	523.83	9.89961E-03	47.16		
22	794.80	5.49663E-03	36.88	Sum	
23	863.91	6.70433E-03	53.54		
m 25	919.30	3.63420E-03	75.57		
26	942.29	5.29412E-03	40.13		
27	1036.16	5.19380E-03	54.41		
29	1238.97	1.07520E-02	34.69	Tol.	CO-56
30	1379.11	4.06111E-03	45.88		
M 32	1536.60	2.52070E-03	29.16		
m 33	1542.31	2.59808E-03	35.86		
34	1589.42	4.72222E-03	24.25		
35	1623.97	2.54274E-03	52.53		
36	1651.43	2.19444E-03	47.36		
37	1723.86	1.94444E-03	37.80		
38	1735.11	2.22222E-03	35.36		

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

Analysis Report for 1510064-11
CP2211S16-17

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	6.71E-01	2.23E+00	2.23E+00
+	NA-22	1274.54	99.94	5.56E-02	2.76E-01	2.76E-01
+	NA-24	1368.53	99.99	-6.91E+11	4.76E+12	8.62E+12
		2754.09	99.86	-1.72E+12		4.76E+12
+	AL-26	1808.65	99.76	2.98E-02	1.93E-01	1.93E-01
+	K-40	1460.81	* 10.67	2.33E+01	1.97E+00	1.97E+00
+	@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88	94.40	5.11E-03	1.15E-01	1.15E-01
		78.34	96.00	3.47E-01		1.50E-01
+	SC-46	889.25	99.98	-6.33E-02	2.46E-01	2.46E-01
		1120.51	99.99	2.05E-01		3.89E-01
+	V-48	983.52	99.98	-9.56E-02	6.84E-01	6.84E-01
		1312.10	97.50	-3.25E-02		8.33E-01
+	CR-51	320.08	9.83	1.87E-02	3.04E+00	3.04E+00
+	MN-54	834.83	99.97	5.26E-02	2.19E-01	2.19E-01
+	CO-56	846.75	99.96	-1.05E-02	2.39E-01	2.39E-01
		1037.75	14.03	9.09E-01		2.12E+00
		1238.25	67.00	3.35E-01		6.05E-01
		1771.40	15.51	-1.57E+00		1.64E+00
		2598.48	16.90	6.00E-01		1.57E+00
+	CO-57	122.06	85.51	-4.05E-02	1.41E-01	1.41E-01
		136.48	10.60	-8.01E-01		1.15E+00
+	CO-58	810.76	99.40	1.45E-01	2.85E-01	2.85E-01
+	FE-59	1099.22	56.50	-9.95E-03	6.72E-01	6.72E-01
		1291.56	43.20	-1.63E-01		8.44E-01
+	CO-60	1173.22	100.00	-6.82E-02	2.31E-01	2.53E-01
		1332.49	100.00	1.21E-01		2.31E-01
+	ZN-65	1115.52	50.75	-1.41E-02	5.43E-01	5.43E-01
+	GA-67	93.31	* 35.70	1.55E+02	2.60E+02	2.60E+02
		208.95	* 2.24	1.82E+03		2.07E+03
		300.22	16.00	4.25E+01		3.95E+02
+	SE-75	121.11	16.70	-1.97E-01	2.31E-01	7.84E-01
		136.00	59.20	-4.61E-02		2.31E-01
		264.65	59.80	-7.49E-02		2.81E-01
		279.53	25.20	3.52E-01		6.52E-01
		400.65	11.40	-2.35E-02		1.55E+00
+	RB-82	776.52	13.00	1.72E+00	3.71E+00	3.71E+00
+	RB-83	520.41	46.00	-9.11E-02	4.63E-01	4.63E-01
		529.64	30.30	1.64E-01		6.86E-01
		552.65	16.40	-3.68E-01		1.38E+00
+	KR-85	513.99	0.43	6.94E+01	5.23E+01	5.23E+01
+	SR-85	513.99	99.27	4.08E-01	3.08E-01	3.08E-01

Analysis Report for 1510064-11

CP2211S16-17

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	Y-88	898.02	93.40	5.71E-02	2.09E-01	2.92E-01
		1836.01	99.38	-1.05E-01		2.09E-01
+	NB-93M	16.57	9.43	1.37E+00	5.74E-01	5.74E-01
+	NB-94	702.63	100.00	4.89E-02	1.84E-01	2.16E-01
		871.10	100.00	-1.13E-02		1.84E-01
+	NB-95	765.79	99.81	3.11E-02	3.99E-01	3.99E-01
+	NB-95M	235.69	25.00	4.38E+02	1.98E+02	1.98E+02
+	ZR-95	724.18	43.70	-5.18E-02	4.89E-01	6.78E-01
		756.72	55.30	1.19E-01		4.89E-01
+	MO-99	181.06	6.20	-4.55E+02	1.94E+03	2.56E+03
		739.58	12.80	3.69E+02		1.94E+03
		778.00	4.50	-1.33E+03		5.62E+03
+	RU-103	497.08	89.00	-4.82E-02	2.94E-01	2.94E-01
+	RU-106	621.84	9.80	2.62E-01	1.75E+00	1.75E+00
+	AG-108M	433.93	89.90	-2.79E-02	1.74E-01	1.74E-01
		614.37	90.40	-6.52E-02		2.28E-01
		722.95	90.50	-1.83E-02		2.36E-01
+	CD-109	88.03	* 3.72	4.97E+00	6.26E+00	6.26E+00
+	AG-110M	657.75	93.14	-2.46E-02	2.10E-01	2.10E-01
		677.61	10.53	-4.06E-01		1.91E+00
		706.67	16.46	3.47E-01		1.36E+00
		763.93	21.98	6.35E-01		1.13E+00
		884.67	71.63	1.10E-02		3.04E-01
		1384.27	23.94	-1.03E-01		9.53E-01
+	CD-113M	263.70	0.02	-1.75E+02	6.09E+02	6.09E+02
+	SN-113	255.12	1.93	4.17E-01	2.71E-01	8.13E+00
		391.69	64.90	3.21E-02		2.71E-01
+	TE123M	159.00	84.10	-5.83E-02	1.73E-01	1.73E-01
+	SB-124	602.71	97.87	-4.16E-02	2.56E-01	2.56E-01
		645.85	7.26	1.37E+00		3.86E+00
		722.78	11.10	-4.07E-01		2.41E+00
		1691.02	49.00	6.47E-02		4.86E-01
+	I-125	35.49	6.49	-5.97E-01	1.35E+00	1.35E+00
+	SB-125	176.33	6.89	-2.48E-01	5.49E-01	1.86E+00
		427.89	29.33	-1.43E-01		5.49E-01
		463.38	10.35	1.23E+00		1.72E+00
		600.56	17.80	2.13E-01		1.03E+00
		635.90	11.32	3.14E-03		1.56E+00
+	SB-126	414.70	83.30	-6.41E-01	8.90E-01	9.14E-01
		666.33	99.60	8.43E-02		8.90E-01
		695.00	99.60	-3.08E-01		1.00E+00
		720.50	53.80	-9.34E-02		1.75E+00
+	SN-126	87.57	* 37.00	4.79E-01	6.03E-01	6.03E-01
+	SB-127	473.00	25.00	-3.46E+01	8.82E+01	9.31E+01
		685.20	35.70	-4.42E+00		8.82E+01
		783.80	14.70	-9.86E+01		2.24E+02
+	I-129	29.78	57.00	-1.57E-02	1.05E-01	1.05E-01
		33.60	13.20	1.01E-01		4.74E-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	-7.12E-01	1.05E-01	8.87E-01
+	I-131	284.30	6.05	-1.59E+00	2.17E+00	2.49E+01
		364.48	81.20	6.52E-01		2.17E+00
		636.97	7.26	-2.20E+00		2.73E+01
		722.89	1.80	-2.07E+01		1.23E+02
+	TE-132	49.72	13.10	2.43E+00	6.41E+01	2.42E+02
		228.16	88.00	2.75E+01		6.41E+01
+	BA-133	81.00	33.00	-2.61E-01	3.60E-01	4.11E-01
		302.84	17.80	1.00E-01		8.28E-01
		356.01	60.00	4.59E-01		3.60E-01
+	I-133	529.87	86.30	2.92E+08	1.22E+09	1.22E+09
+	XE-133	81.00	38.00	-9.42E+00	1.48E+01	1.48E+01
+	CS-134	563.23	8.38	-8.39E-02	2.33E-01	2.30E+00
		569.32	15.43	2.58E-01		1.16E+00
		604.70	97.60	-7.35E-03		2.33E-01
		795.84	85.40	-9.54E-02		2.38E-01
		801.93	8.73	-3.15E-01		2.37E+00
+	CS-135	268.24	16.00	-1.54E-02	9.47E-01	9.47E-01
+	@ 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	-3.03E-02	8.08E-01	7.33E+00
		163.89	4.61	-1.55E+00		1.21E+01
		176.55	13.56	-5.47E-01		4.10E+00
		273.65	12.66	-1.60E-01		5.06E+00
		340.57	48.50	2.77E+00		1.74E+00
		818.50	99.70	-4.19E-01		8.08E-01
		1048.07	79.60	1.61E-01		1.20E+00
		1235.34	19.70	-4.17E-01		6.55E+00
+	CS-137	661.65	85.12	6.49E-02	2.22E-01	2.22E-01
+	LA-138	788.74	34.00	2.10E-01	2.74E-01	6.15E-01
		1435.80	66.00	2.61E-02		2.74E-01
+	CE-139	165.85	80.35	-2.88E-02	1.82E-01	1.82E-01
+	BA-140	162.64	6.70	-2.81E+00	3.00E+00	8.60E+00
		304.84	4.50	-1.05E+00		1.46E+01
		423.70	3.20	1.72E+01		2.48E+01
		437.55	2.00	1.79E+01		3.77E+01
		537.32	25.00	-1.69E+00		3.00E+00
+	LA-140	328.77	20.50	2.18E-01	7.44E-01	3.27E+00
		487.03	45.50	3.29E-01		1.57E+00
		815.85	23.50	1.15E+00		3.98E+00
		1596.49	95.49	-5.72E-02		7.44E-01
+	CE-141	145.44	48.40	1.22E-01	4.55E-01	4.55E-01
+	CE-143	57.36	11.80	-8.51E+05	6.46E+05	1.14E+06
		293.26	42.00	8.34E+05		6.46E+05
		664.55	5.20	-1.62E+06		5.26E+06
+	CE-144	133.54	10.80	1.80E-01	1.17E+00	1.17E+00
+	PM-144	476.78	42.00	3.81E-02	1.58E-01	3.95E-01
		618.01	98.60	-1.65E-01		1.58E-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>
	PM-144	696.49	99.49	-9.35E-02	1.58E-01	2.15E-01
+	PM-145	36.85	21.70	-1.67E-01	1.65E-01	2.94E-01
		37.36	39.70	-5.06E-02		1.65E-01
		42.30	15.10	3.27E-01		4.86E-01
		72.40	2.31	1.19E-01		5.89E+00
+	PM-146	453.90	39.94	1.07E-01	3.92E-01	3.92E-01
		735.90	14.01	-8.03E-01		1.36E+00
		747.13	13.10	-2.67E-01		1.51E+00
+	ND-147	91.11	28.90	4.66E+00	2.70E+00	2.70E+00
		531.02	13.10	1.62E-01		7.34E+00
+	PM-149	285.90	3.10	-1.90E+03	2.97E+04	2.97E+04
+	EU-152	121.78	20.50	-1.57E-01	5.48E-01	5.48E-01
		244.69	5.40	5.92E-01		3.09E+00
		344.27	19.13	-3.74E+00		8.03E-01
		778.89	9.20	-5.34E-01		2.25E+00
		964.01	10.40	9.17E-01		2.80E+00
		1085.78	7.22	-1.16E+00		3.41E+00
		1112.02	9.60	1.31E+00		2.62E+00
		1407.95	14.94	-6.45E-01		1.40E+00
+	GD-153	97.43	31.30	-2.11E-02	3.71E-01	3.71E-01
		103.18	22.20	-1.88E-01		4.97E-01
+	EU-154	123.07	40.50	-1.45E-01	2.77E-01	2.77E-01
		723.30	19.70	-8.44E-02		1.09E+00
		873.19	11.50	-1.18E-01		1.66E+00
		996.32	10.30	-4.59E-01		1.90E+00
		1004.76	17.90	4.97E-01		1.25E+00
		1274.45	35.50	1.54E-01		7.67E-01
+	EU-155	86.50	* 30.90	5.80E-01	5.12E-01	7.30E-01
		105.30	20.70	3.40E-01		5.12E-01
+	EU-156	811.77	10.40	1.99E+00	7.37E+00	7.37E+00
		1153.47	7.20	3.43E+00		1.32E+01
		1230.71	8.90	-2.60E+00		1.04E+01
+	HO-166M	184.41	72.60	3.19E-01	2.10E-01	2.10E-01
		280.45	29.60	1.02E-01		4.71E-01
		410.94	11.10	1.93E-01		1.46E+00
		711.69	54.10	-8.91E-02		3.34E-01
+	TM-171	66.72	0.14	3.80E+01	7.98E+01	7.98E+01
+	HF-172	81.75	4.52	-7.38E+00	1.07E+00	2.88E+00
		125.81	11.30	1.37E-01		1.07E+00
+	LU-172	181.53	20.60	-7.81E-01	7.23E+00	1.26E+01
		810.06	16.63	1.22E+01		2.39E+01
		912.12	15.25	4.45E+01		3.93E+01
		1093.66	62.50	-1.18E+00		7.23E+00
+	LU-173	100.72	5.24	-9.94E-01	7.10E-01	2.00E+00
		272.11	21.20	1.74E-01		7.10E-01
+	HF-175	343.40	84.00	-4.48E-01	2.55E-01	2.55E-01
+	LU-176	88.34	13.30	1.48E+00	1.44E-01	9.83E-01
		201.83	86.00	1.70E-03		1.60E-01
		306.78	94.00	-5.36E-02		1.44E-01

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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	1.39E-02	3.13E-01	3.13E-01
		1121.30	34.90	-1.22E-01		1.07E+00
		1189.05	16.23	2.83E-01		2.10E+00
		1221.41	26.98	1.14E-01		1.28E+00
		1231.02	11.44	-6.63E-01		2.65E+00
+	IR-192	308.46	29.68	-3.72E-01	4.14E-01	6.00E-01
		468.07	48.10	-6.27E-02		4.14E-01
+	HG-203	279.19	* 77.30	1.71E-01	3.07E-01	3.07E-01
+	BI-207	569.67	97.72	3.98E-02	1.79E-01	1.79E-01
		1063.62	74.90	-1.47E-01		3.14E-01
+	TL-208	583.14	* 30.22	1.83E+00	6.18E-01	8.56E-01
		860.37	4.48	1.58E-01		5.04E+00
		2614.66	* 35.85	1.16E+00		6.18E-01
+	BI-210M	262.00	45.00	1.45E-02	3.14E-01	3.14E-01
		300.00	23.00	2.60E-01		7.38E-01
+	PB-210	46.50	4.25	4.66E-01	1.79E+00	1.79E+00
+	PB-211	404.84	2.90	5.09E-01	5.47E+00	5.47E+00
		831.96	2.90	2.38E+00		7.19E+00
+	BI-212	727.17	* 11.80	1.29E+00	2.19E+00	2.19E+00
		1620.62	2.75	-8.04E-02		7.57E+00
+	PB-212	238.63	* 44.60	2.20E+00	5.83E-01	5.83E-01
		300.09	3.41	1.75E+00		4.98E+00
+	BI-214	609.31	* 46.30	1.42E+00	5.23E-01	5.23E-01
		1120.29	* 15.10	1.79E+00		1.76E+00
		1764.49	* 15.80	1.52E+00		8.07E-01
		2204.22	4.98	2.83E+00		5.33E+00
+	PB-214	295.21	* 19.19	1.80E+00	4.72E-01	1.52E+00
		351.92	* 37.19	1.55E+00		4.72E-01
+	RN-219	401.80	6.50	-3.12E-01	2.35E+00	2.35E+00
+	RA-223	323.87	3.88	-7.37E-01	3.74E+00	3.74E+00
+	RA-224	240.98	3.95	2.33E+01	6.08E+00	6.08E+00
+	RA-225	40.00	31.00	-6.50E-01	8.10E-01	8.10E-01
+	RA-226	186.21	* 3.28	6.94E+00	5.24E+00	5.24E+00
+	TH-227	50.10	8.40	9.38E-03	9.34E-01	9.34E-01
		236.00	11.50	4.22E+00		1.91E+00
		256.20	6.30	1.09E+00		2.18E+00
+	AC-228	338.32	* 11.40	2.83E+00	1.61E+00	2.21E+00
		911.07	* 27.70	1.66E+00		1.61E+00
		969.11	16.60	1.52E+00		1.91E+00
+	TH-230	48.44	16.90	8.55E-02	4.60E-01	4.60E-01
		62.85	4.60	3.54E-01		2.20E+00
		67.67	0.37	1.30E+00		2.94E+01
+	PA-231	283.67	1.60	-5.27E-01	6.37E+00	8.38E+00
		302.67	2.30	7.72E-01		6.37E+00
+	TH-231	25.64	14.70	-4.20E-01	4.02E-01	4.02E-01
		84.21	6.40	-6.22E+00		1.90E+00
+	PA-233	311.98	38.60	5.20E-02	7.69E-01	7.69E-01
+	PA-234	131.20	20.40	3.15E-01	5.91E-01	5.91E-01

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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	-7.06E-01	5.91E-01	2.23E+00
	946.00	12.00	1.63E-01		1.68E+00
+ PA-234M	1001.03	0.92	5.43E+00	2.41E+01	2.41E+01
+ TH-234	63.29	3.80	3.20E-01	2.69E+00	2.69E+00
+ U-235	143.76	10.50	2.44E-04	1.12E+00	1.12E+00
	163.35	4.70	-3.44E-01		2.69E+00
	205.31	4.70	3.67E-01		3.15E+00
+ NP-237	86.50	* 12.60	1.41E+00	1.77E+00	1.77E+00
+ NP-239	106.10	22.70	1.25E+03	1.88E+03	1.88E+03
	228.18	10.70	2.25E+03		5.33E+03
	277.60	14.10	-1.20E+02		3.98E+03
+ AM-241	59.54	35.90	5.76E-02	2.65E-01	2.65E-01
+ AM-243	74.67	66.00	7.84E-01	2.21E-01	2.21E-01
+ CM-243	209.75	3.29	2.94E-01	9.92E-01	4.32E+00
	228.14	10.60	5.63E-01		1.31E+00
	277.60	14.00	-2.98E-02		9.92E-01

- + = Nuclide identified during the nuclide identification
- * = Energy line found in the spectrum
- > = MDA value not calculated
- @ = Half-life too short to be able to perform the decay correction
- ? = CAUTION: MDA value is inconsistent with Currie MDA at 95% confidence level

NUCLIDE MDA REPORT

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

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
BE-7	477.59	10.42	2.23E+00	2.23E+00	6.71E-01	1.05E+00
NA-22	1274.54	99.94	2.76E-01	2.76E-01	5.56E-02	1.26E-01
NA-24	1368.53	99.99	8.62E+12	4.76E+12	-6.91E+11	3.80E+12
	2754.09	99.86	4.76E+12		-1.72E+12	1.50E+12
AL-26	1808.65	99.76	1.93E-01	1.93E-01	2.98E-02	7.99E-02
+ K-40	1460.81	* 10.67	1.97E+00	1.97E+00	2.33E+01	8.57E-01

Analysis Report for 1510064-11

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26	1.00E+20
TI-44	67.88	94.40	1.15E-01	1.15E-01	5.11E-03	5.66E-02
	78.34	96.00	1.50E-01		3.47E-01	7.38E-02
SC-46	889.25	99.98	2.46E-01	2.46E-01	-6.33E-02	1.12E-01
	1120.51	99.99	3.89E-01		2.05E-01	1.81E-01
V-48	983.52	99.98	6.84E-01	6.84E-01	-9.56E-02	3.10E-01
	1312.10	97.50	8.33E-01		-3.25E-02	3.73E-01
CR-51	320.08	9.83	3.04E+00	3.04E+00	1.87E-02	1.46E+00
MN-54	834.83	99.97	2.19E-01	2.19E-01	5.26E-02	1.01E-01
CO-56	846.75	99.96	2.39E-01	2.39E-01	-1.05E-02	1.09E-01
	1037.75	14.03	2.12E+00		9.09E-01	9.68E-01
	1238.25	67.00	6.05E-01		3.35E-01	2.80E-01
	1771.40	15.51	1.64E+00		-1.57E+00	6.87E-01
	2598.48	16.90	1.57E+00		6.00E-01	6.24E-01
CO-57	122.06	85.51	1.41E-01	1.41E-01	-4.05E-02	6.87E-02
	136.48	10.60	1.15E+00		-8.01E-01	5.61E-01
CO-58	810.76	99.40	2.85E-01	2.85E-01	1.45E-01	1.32E-01
FE-59	1099.22	56.50	6.72E-01	6.72E-01	-9.95E-03	3.07E-01
	1291.56	43.20	8.44E-01		-1.63E-01	3.78E-01
CO-60	1173.22	100.00	2.53E-01	2.31E-01	-6.82E-02	1.15E-01
	1332.49	100.00	2.31E-01		1.21E-01	1.03E-01
ZN-65	1115.52	50.75	5.43E-01	5.43E-01	-1.41E-02	2.48E-01
+ GA-67	93.31	*	2.60E+02	2.60E+02	1.55E+02	1.28E+02
	208.95	*	2.07E+03		1.82E+03	9.97E+02
	300.22		3.95E+02		4.25E+01	1.90E+02
SE-75	121.11	16.70	7.84E-01	2.31E-01	-1.97E-01	3.82E-01
	136.00	59.20	2.31E-01		-4.61E-02	1.13E-01
	264.65	59.80	2.81E-01		-7.49E-02	1.35E-01
	279.53	25.20	6.52E-01		3.52E-01	3.13E-01
	400.65	11.40	1.55E+00		-2.35E-02	7.35E-01
RB-82	776.52	13.00	3.71E+00	3.71E+00	1.72E+00	1.73E+00
RB-83	520.41	46.00	4.63E-01	4.63E-01	-9.11E-02	2.17E-01
	529.64	30.30	6.86E-01		1.64E-01	3.21E-01
	552.65	16.40	1.38E+00		-3.68E-01	6.47E-01
KR-85	513.99	0.43	5.23E+01	5.23E+01	6.94E+01	2.50E+01
SR-85	513.99	99.27	3.08E-01	3.08E-01	4.08E-01	1.47E-01
Y-88	898.02	93.40	2.92E-01	2.09E-01	5.71E-02	1.35E-01
	1836.01	99.38	2.09E-01		-1.05E-01	8.45E-02
NB-93M	16.57	9.43	5.74E-01	5.74E-01	1.37E+00	2.79E-01
NB-94	702.63	100.00	2.16E-01	1.84E-01	4.89E-02	1.01E-01
	871.10	100.00	1.84E-01		-1.13E-02	8.34E-02
NB-95	765.79	99.81	3.99E-01	3.99E-01	3.11E-02	1.86E-01
NB-95M	235.69	25.00	1.98E+02	1.98E+02	4.38E+02	9.68E+01
ZR-95	724.18	43.70	6.78E-01	4.89E-01	-5.18E-02	3.17E-01
	756.72	55.30	4.89E-01		1.19E-01	2.26E-01
MO-99	181.06	6.20	2.56E+03	1.94E+03	-4.55E+02	1.24E+03
	739.58	12.80	1.94E+03		3.69E+02	9.03E+02
	778.00	4.50	5.62E+03		-1.33E+03	2.61E+03
RU-103	497.08	89.00	2.94E-01	2.94E-01	-4.82E-02	1.38E-01
RU-106	621.84	9.80	1.75E+00	1.75E+00	2.62E-01	8.09E-01
AG-108M	433.93	89.90	1.74E-01	1.74E-01	-2.79E-02	8.23E-02
	614.37	90.40	2.28E-01		-6.52E-02	1.08E-01
	722.95	90.50	2.36E-01		-1.83E-02	1.10E-01

Analysis Report for 1510064-11

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	Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
+	CD-109	88.03	*	3.72	6.26E+00	6.26E+00	4.97E+00
	AG-110M	657.75		93.14	2.10E-01	2.10E-01	-2.46E-02
		677.61		10.53	1.91E+00		-4.06E-01
		706.67		16.46	1.36E+00		3.47E-01
		763.93		21.98	1.13E+00		6.35E-01
		884.67		71.63	3.04E-01		1.10E-02
		1384.27		23.94	9.53E-01		-1.03E-01
	CD-113M	263.70		0.02	6.09E+02	6.09E+02	-1.75E+02
	SN-113	255.12		1.93	8.13E+00	2.71E-01	4.17E-01
		391.69		64.90	2.71E-01		3.21E-02
	TE123M	159.00		84.10	1.73E-01	1.73E-01	-5.83E-02
	SB-124	602.71		97.87	2.56E-01	2.56E-01	-4.16E-02
		645.85		7.26	3.86E+00		1.37E+00
		722.78		11.10	2.41E+00		-4.07E-01
		1691.02		49.00	4.86E-01		6.47E-02
	I-125	35.49		6.49	1.35E+00	1.35E+00	-5.97E-01
	SB-125	176.33		6.89	1.86E+00	5.49E-01	-2.48E-01
		427.89		29.33	5.49E-01		-1.43E-01
		463.38		10.35	1.72E+00		1.23E+00
		600.56		17.80	1.03E+00		2.13E-01
		635.90		11.32	1.56E+00		3.14E-03
	SB-126	414.70		83.30	9.14E-01	8.90E-01	-6.41E-01
		666.33		99.60	8.90E-01		8.43E-02
		695.00		99.60	1.00E+00		-3.08E-01
		720.50		53.80	1.75E+00		-9.34E-02
+	SN-126	87.57	*	37.00	6.03E-01	6.03E-01	4.79E-01
	SB-127	473.00		25.00	9.31E+01	8.82E+01	-3.46E+01
		685.20		35.70	8.82E+01		-4.42E+00
		783.80		14.70	2.24E+02		-9.86E+01
	I-129	29.78		57.00	1.05E-01	1.05E-01	-1.57E-02
		33.60		13.20	4.74E-01		1.01E-01
		39.58		7.52	8.87E-01		-7.12E-01
	I-131	284.30		6.05	2.49E+01	2.17E+00	-1.59E+00
		364.48		81.20	2.17E+00		6.52E-01
		636.97		7.26	2.73E+01		-2.20E+00
		722.89		1.80	1.23E+02		-2.07E+01
	TE-132	49.72		13.10	2.42E+02	6.41E+01	2.43E+00
		228.16		88.00	6.41E+01		2.75E+01
	BA-133	81.00		33.00	4.11E-01	3.60E-01	-2.61E-01
		302.84		17.80	8.28E-01		1.00E-01
		356.01		60.00	3.60E-01		4.59E-01
	I-133	529.87		86.30	1.22E+09	1.22E+09	2.92E+08
	XE-133	81.00		38.00	1.48E+01	1.48E+01	-9.42E+00
	CS-134	563.23		8.38	2.30E+00	2.33E-01	-8.39E-02
		569.32		15.43	1.16E+00		2.58E-01
		604.70		97.60	2.33E-01		-7.35E-03
		795.84		85.40	2.38E-01		-9.54E-02
		801.93		8.73	2.37E+00		-3.15E-01
	CS-135	268.24		16.00	9.47E-01	9.47E-01	-1.54E-02
@	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	7.33E+00	8.08E-01	-3.03E-02

Analysis Report for 1510064-11

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
CS-136	163.89	4.61	1.21E+01	8.08E-01	-1.55E+00	5.90E+00
	176.55	13.56	4.10E+00		-5.47E-01	1.99E+00
	273.65	12.66	5.06E+00		-1.60E-01	2.43E+00
	340.57	48.50	1.74E+00		2.77E+00	8.41E-01
	818.50	99.70	8.08E-01		-4.19E-01	3.69E-01
	1048.07	79.60	1.20E+00		1.61E-01	5.45E-01
	1235.34	19.70	6.55E+00		-4.17E-01	3.01E+00
CS-137	661.65	85.12	2.22E-01	2.22E-01	6.49E-02	1.04E-01
LA-138	788.74	34.00	6.15E-01	2.74E-01	2.10E-01	2.85E-01
	1435.80	66.00	2.74E-01		2.61E-02	1.16E-01
CE-139	165.85	80.35	1.82E-01	1.82E-01	-2.88E-02	8.86E-02
BA-140	162.64	6.70	8.60E+00	3.00E+00	-2.81E+00	4.18E+00
	304.84	4.50	1.46E+01		-1.05E+00	6.97E+00
	423.70	3.20	2.48E+01		1.72E+01	1.18E+01
	437.55	2.00	3.77E+01		1.79E+01	1.79E+01
	537.32	25.00	3.00E+00		-1.69E+00	1.41E+00
LA-140	328.77	20.50	3.27E+00	7.44E-01	2.18E-01	1.56E+00
	487.03	45.50	1.57E+00		3.29E-01	7.35E-01
	815.85	23.50	3.98E+00		1.15E+00	1.84E+00
	1596.49	95.49	7.44E-01		-5.72E-02	3.01E-01
CE-141	145.44	48.40	4.55E-01	4.55E-01	1.22E-01	2.21E-01
CE-143	57.36	11.80	1.14E+06	6.46E+05	-8.51E+05	5.56E+05
	293.26	42.00	6.46E+05		8.34E+05	3.13E+05
	664.55	5.20	5.26E+06		-1.62E+06	2.44E+06
CE-144	133.54	10.80	1.17E+00	1.17E+00	1.80E-01	5.71E-01
PM-144	476.78	42.00	3.95E-01	1.58E-01	3.81E-02	1.86E-01
	618.01	98.60	1.58E-01		-1.65E-01	7.28E-02
	696.49	99.49	2.15E-01		-9.35E-02	1.01E-01
PM-145	36.85	21.70	2.94E-01	1.65E-01	-1.67E-01	1.43E-01
	37.36	39.70	1.65E-01		-5.06E-02	8.02E-02
	42.30	15.10	4.86E-01		3.27E-01	2.37E-01
	72.40	2.31	5.89E+00		1.19E-01	2.90E+00
PM-146	453.90	39.94	3.92E-01	3.92E-01	1.07E-01	1.85E-01
	735.90	14.01	1.36E+00		-8.03E-01	6.28E-01
	747.13	13.10	1.51E+00		-2.67E-01	7.01E-01
ND-147	91.11	28.90	2.70E+00	2.70E+00	4.66E+00	1.33E+00
	531.02	13.10	7.34E+00		1.62E-01	3.43E+00
PM-149	285.90	3.10	2.97E+04	2.97E+04	-1.90E+03	1.42E+04
EU-152	121.78	20.50	5.48E-01	5.48E-01	-1.57E-01	2.67E-01
	244.69	5.40	3.09E+00		5.92E-01	1.50E+00
	344.27	19.13	8.03E-01		-3.74E+00	3.84E-01
	778.89	9.20	2.25E+00		-5.34E-01	1.04E+00
	964.01	10.40	2.80E+00		9.17E-01	1.31E+00
	1085.78	7.22	3.41E+00		-1.16E+00	1.56E+00
	1112.02	9.60	2.62E+00		1.31E+00	1.20E+00
	1407.95	14.94	1.40E+00		-6.45E-01	6.12E-01
GD-153	97.43	31.30	3.71E-01	3.71E-01	-2.11E-02	1.81E-01
	103.18	22.20	4.97E-01		-1.88E-01	2.42E-01
EU-154	123.07	40.50	2.77E-01	2.77E-01	-1.45E-01	1.35E-01
	723.30	19.70	1.09E+00		-8.44E-02	5.10E-01
	873.19	11.50	1.66E+00		-1.18E-01	7.54E-01
	996.32	10.30	1.90E+00		-4.59E-01	8.55E-01
	1004.76	17.90	1.25E+00		4.97E-01	5.70E-01

Analysis Report for 1510064-11

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)	
	EU-154	1274.45	35.50	7.67E-01	2.77E-01	1.54E-01	3.49E-01
+	EU-155	86.50	* 30.90	7.30E-01	5.12E-01	5.80E-01	3.61E-01
		105.30	20.70	5.12E-01		3.40E-01	2.50E-01
	EU-156	811.77	10.40	7.37E+00	7.37E+00	1.99E+00	3.41E+00
		1153.47	7.20	1.32E+01		3.43E+00	6.05E+00
		1230.71	8.90	1.04E+01		-2.60E+00	4.72E+00
	HO-166M	184.41	72.60	2.10E-01	2.10E-01	3.19E-01	1.02E-01
		280.45	29.60	4.71E-01		1.02E-01	2.26E-01
		410.94	11.10	1.46E+00		1.93E-01	6.92E-01
		711.69	54.10	3.34E-01		-8.91E-02	1.54E-01
	TM-171	66.72	0.14	7.98E+01	7.98E+01	3.80E+01	3.92E+01
	HF-172	81.75	4.52	2.88E+00	1.07E+00	-7.38E+00	1.42E+00
		125.81	11.30	1.07E+00		1.37E-01	5.20E-01
	LU-172	181.53	20.60	1.26E+01	7.23E+00	-7.81E-01	6.11E+00
		810.06	16.63	2.39E+01		1.22E+01	1.11E+01
		912.12	15.25	3.93E+01		4.45E+01	1.86E+01
		1093.66	62.50	7.23E+00		-1.18E+00	3.30E+00
	LU-173	100.72	5.24	2.00E+00	7.10E-01	-9.94E-01	9.76E-01
		272.11	21.20	7.10E-01		1.74E-01	3.41E-01
	HF-175	343.40	84.00	2.55E-01	2.55E-01	-4.48E-01	1.22E-01
	LU-176	88.34	13.30	9.83E-01	1.44E-01	1.48E+00	4.83E-01
		201.83	86.00	1.60E-01		1.70E-03	7.77E-02
		306.78	94.00	1.44E-01		-5.36E-02	6.89E-02
	TA-182	67.75	41.20	3.13E-01	3.13E-01	1.39E-02	1.54E-01
		1121.30	34.90	1.07E+00		-1.22E-01	4.99E-01
		1189.05	16.23	2.10E+00		2.83E-01	9.68E-01
		1221.41	26.98	1.28E+00		1.14E-01	5.91E-01
		1231.02	11.44	2.65E+00		-6.63E-01	1.20E+00
	IR-192	308.46	29.68	6.00E-01	4.14E-01	-3.72E-01	2.87E-01
		468.07	48.10	4.14E-01		-6.27E-02	1.95E-01
+	HG-203	279.19	* 77.30	3.07E-01	3.07E-01	1.71E-01	1.48E-01
	BI-207	569.67	97.72	1.79E-01	1.79E-01	3.98E-02	8.38E-02
		1063.62	74.90	3.14E-01		-1.47E-01	1.43E-01
+	TL-208	583.14	* 30.22	8.56E-01	6.18E-01	1.83E+00	4.09E-01
		860.37	4.48	5.04E+00		1.58E-01	2.33E+00
		2614.66	* 35.85	6.18E-01		1.16E+00	2.49E-01
	BI-210M	262.00	45.00	3.14E-01	3.14E-01	1.45E-02	1.51E-01
		300.00	23.00	7.38E-01		2.60E-01	3.56E-01
	PB-210	46.50	4.25	1.79E+00	1.79E+00	4.66E-01	8.74E-01
	PB-211	404.84	2.90	5.47E+00	5.47E+00	5.09E-01	2.60E+00
		831.96	2.90	7.19E+00		2.38E+00	3.32E+00
+	BI-212	727.17	* 11.80	2.19E+00	2.19E+00	1.29E+00	1.04E+00
		1620.62	2.75	7.57E+00		-8.04E-02	3.24E+00
+	PB-212	238.63	* 44.60	5.83E-01	5.83E-01	2.20E+00	2.86E-01
		300.09	3.41	4.98E+00		1.75E+00	2.40E+00
+	BI-214	609.31	* 46.30	5.23E-01	5.23E-01	1.42E+00	2.49E-01
		1120.29	* 15.10	1.76E+00		1.79E+00	8.11E-01
		1764.49	* 15.80	8.07E-01		1.52E+00	3.02E-01
		2204.22	4.98	5.33E+00		2.83E+00	2.28E+00
+	PB-214	295.21	* 19.19	1.52E+00	4.72E-01	1.80E+00	7.47E-01
		351.92	* 37.19	4.72E-01		1.55E+00	2.27E-01
	RN-219	401.80	6.50	2.35E+00	2.35E+00	-3.12E-01	1.11E+00
	RA-223	323.87	3.88	3.74E+00	3.74E+00	-7.37E-01	1.78E+00

Analysis Report for 1510064-11
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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
RA-224	240.98	3.95	6.08E+00	6.08E+00	2.33E+01	2.98E+00
RA-225	40.00	31.00	8.10E-01	8.10E-01	-6.50E-01	3.95E-01
+ RA-226	186.21 *	3.28	5.24E+00	5.24E+00	6.94E+00	2.56E+00
TH-227	50.10	8.40	9.34E-01	9.34E-01	9.38E-03	4.57E-01
	236.00	11.50	1.91E+00		4.22E+00	9.33E-01
	256.20	6.30	2.18E+00		1.09E+00	1.05E+00
+ AC-228	338.32 *	11.40	2.21E+00	1.61E+00	2.83E+00	1.08E+00
	911.07 *	27.70	1.61E+00		1.66E+00	7.73E-01
	969.11	16.60	1.91E+00		1.52E+00	9.00E-01
TH-230	48.44	16.90	4.60E-01	4.60E-01	8.55E-02	2.25E-01
	62.85	4.60	2.20E+00		3.54E-01	1.08E+00
	67.67	0.37	2.94E+01		1.30E+00	1.44E+01
PA-231	283.67	1.60	8.38E+00	6.37E+00	-5.27E-01	4.01E+00
	302.67	2.30	6.37E+00		7.72E-01	3.05E+00
TH-231	25.64	14.70	4.02E-01	4.02E-01	-4.20E-01	1.96E-01
	84.21	6.40	1.90E+00		-6.22E+00	9.33E-01
PA-233	311.98	38.60	7.69E-01	7.69E-01	5.20E-02	3.68E-01
PA-234	131.20	20.40	5.91E-01	5.91E-01	3.15E-01	2.88E-01
	733.99	8.80	2.23E+00		-7.06E-01	1.04E+00
	946.00	12.00	1.68E+00		1.63E-01	7.64E-01
PA-234M	1001.03	0.92	2.41E+01	2.41E+01	5.43E+00	1.10E+01
TH-234	63.29	3.80	2.69E+00	2.69E+00	3.20E-01	1.32E+00
U-235	143.76	10.50	1.12E+00	1.12E+00	2.44E-04	5.46E-01
	163.35	4.70	2.69E+00		-3.44E-01	1.31E+00
	205.31	4.70	3.15E+00		3.67E-01	1.53E+00
+ NP-237	86.50 *	12.60	1.77E+00	1.77E+00	1.41E+00	8.77E-01
NP-239	106.10	22.70	1.88E+03	1.88E+03	1.25E+03	9.17E+02
	228.18	10.70	5.33E+03		2.25E+03	2.57E+03
	277.60	14.10	3.98E+03		-1.20E+02	1.91E+03
AM-241	59.54	35.90	2.65E-01	2.65E-01	5.76E-02	1.30E-01
AM-243	74.67	66.00	2.21E-01	2.21E-01	7.84E-01	1.09E-01
CM-243	209.75	3.29	4.32E+00	9.92E-01	2.94E-01	2.10E+00
	228.14	10.60	1.31E+00		5.63E-01	6.35E-01
	277.60	14.00	9.92E-01		-2.98E-02	4.76E-01

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

No Action Level results available for reporting purposes.

Analysis Report for 1510064-11
CP2211S16-17

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: CP2211S16-17

Elapsed Live time: 3600
 Elapsed Real Time: 3672

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	1	21	75
17:	80	88	61	81	65	46	56	62	62
25:	56	39	44	48	61	62	56	51	51
33:	53	53	46	61	48	61	57	57	57
41:	70	56	59	74	77	87	79	59	59
49:	52	63	65	63	70	72	67	77	77
57:	94	82	78	76	92	118	106	110	110
65:	88	101	100	101	109	101	104	112	112
73:	147	215	204	258	249	120	83	96	96
81:	82	90	104	105	103	122	135	92	92
89:	101	116	114	119	114	69	64	71	71
97:	56	54	48	49	70	40	59	58	58
105:	57	62	61	47	61	60	44	41	41
113:	52	63	58	47	67	53	47	46	46
121:	54	57	62	48	50	56	60	58	58
129:	61	64	63	52	50	42	54	44	44
137:	44	51	46	41	43	51	52	61	61
145:	39	42	47	54	45	43	39	52	52
153:	60	44	44	50	45	45	47	47	47
161:	32	43	35	53	49	40	52	44	44
169:	46	44	38	52	40	41	38	32	32
177:	37	37	35	35	39	43	47	50	50
185:	89	84	60	33	29	37	39	28	28
193:	39	32	35	27	36	32	32	33	33
201:	45	41	33	47	37	33	44	50	50
209:	48	40	17	31	34	33	38	30	30
217:	26	39	42	25	17	32	26	27	27
225:	33	30	40	40	34	25	21	32	32
233:	37	27	29	65	131	188	134	74	74
241:	63	50	36	27	23	33	29	17	17
249:	21	13	19	22	26	26	24	19	19
257:	24	30	22	25	19	32	16	27	27
265:	27	24	21	31	33	31	32	19	19
273:	18	18	14	20	30	33	19	18	18
281:	21	15	21	13	21	15	28	14	14
289:	17	20	20	25	36	57	55	42	42
297:	23	20	25	24	27	11	24	17	17
305:	14	20	13	18	13	21	17	19	19
313:	24	19	21	19	22	15	19	16	16
321:	15	18	21	11	17	22	17	20	20
329:	23	13	13	16	15	15	16	19	19
337:	42	57	38	22	14	23	22	15	15
345:	15	13	14	17	23	44	85	101	101
353:	20	17	12	4	13	17	25	17	17
361:	15	24	4	13	24	14	13	17	17

369: 15 9 11 18 17 12 12 12

Sample Title: CP2211S16-17

Channel	1	2	3	4	5	6	7	8
377:	23	20	11	8	20	9	7	10
385:	20	9	11	9	13	7	19	15
393:	12	15	11	9	16	7	13	13
401:	15	9	15	13	12	9	15	20
409:	16	12	13	15	13	9	22	8
417:	7	14	9	22	18	16	16	11
425:	13	11	15	8	15	9	9	12
433:	11	6	8	11	21	10	8	21
441:	14	9	12	6	6	12	7	5
449:	5	8	11	11	8	12	13	14
457:	9	8	8	12	12	15	21	11
465:	11	12	10	7	5	8	6	13
473:	8	13	6	6	7	13	6	13
481:	17	8	8	7	5	7	10	11
489:	10	12	13	9	6	8	8	7
497:	18	7	13	7	6	13	5	7
505:	6	11	8	11	21	35	33	21
513:	11	14	9	6	6	7	9	7
521:	11	12	15	10	8	5	14	3
529:	8	9	13	9	7	4	6	11
537:	9	9	9	7	9	11	10	11
545:	9	11	8	4	14	9	6	12
553:	6	9	12	11	10	16	9	12
561:	12	5	8	14	13	8	6	3
569:	11	10	9	6	7	5	4	8
577:	1	10	13	8	17	36	51	29
585:	14	10	10	5	4	10	6	10
593:	3	5	5	10	10	8	4	6
601:	5	10	5	11	7	14	14	35
609:	69	39	13	10	4	5	7	4
617:	3	4	6	6	7	1	6	11
625:	8	2	11	2	9	12	5	7
633:	8	9	8	4	3	6	7	5
641:	4	7	5	8	12	13	11	10
649:	7	8	7	8	6	7	4	5
657:	8	11	5	5	7	8	3	8
665:	8	8	6	4	6	7	9	4
673:	6	3	5	2	15	7	4	9
681:	7	10	5	9	3	6	5	10
689:	8	6	8	9	7	8	9	7
697:	6	8	6	6	14	9	9	7
705:	8	7	9	7	5	6	5	3
713:	6	8	0	10	6	2	7	6
721:	4	5	9	7	6	9	15	10
729:	9	8	9	5	3	2	9	8
737:	4	7	3	9	5	7	6	7
745:	8	7	4	8	3	4	6	7
753:	7	5	8	5	1	5	7	8
761:	3	7	6	6	2	15	14	10
769:	6	7	6	11	10	5	4	10
777:	5	6	6	8	4	6	3	7
785:	6	4	8	13	8	3	3	2
793:	8	6	10	5	2	2	9	6

801: 4 7 3 6 5 6 7 3

Sample Title: CP2211S16-17

Channel	1	2	3	4	5	6	7	8
809:	8	5	10	8	2	5	4	5
817:	1	6	6	4	2	4	5	7
825:	4	3	3	4	5	7	1	7
833:	6	8	7	3	3	4	7	3
841:	3	4	3	7	3	3	2	5
849:	4	5	2	5	5	1	4	4
857:	11	3	4	4	12	5	5	5
865:	6	4	2	4	5	3	2	0
873:	6	7	4	1	7	5	4	4
881:	6	5	2	6	4	2	5	5
889:	4	3	3	7	3	1	5	10
897:	5	7	3	6	2	10	5	3
905:	7	3	3	8	6	24	27	23
913:	3	4	2	4	4	6	6	6
921:	3	2	3	1	4	4	0	2
929:	1	4	2	7	7	13	5	4
937:	3	2	2	1	11	9	4	2
945:	4	3	2	3	2	5	2	2
953:	1	6	2	6	5	2	3	5
961:	2	5	6	12	10	1	11	20
969:	20	5	7	8	4	5	3	4
977:	1	5	1	6	4	2	3	5
985:	5	3	2	7	2	4	4	4
993:	1	1	5	3	3	2	6	3
1001:	3	3	7	6	4	5	4	2
1009:	1	5	0	4	4	4	6	2
1017:	2	3	1	5	4	1	1	3
1025:	4	3	6	4	4	3	2	2
1033:	0	9	6	4	6	4	2	5
1041:	2	3	2	4	3	6	3	3
1049:	5	2	4	2	4	3	4	5
1057:	5	5	3	6	6	1	3	5
1065:	4	3	6	5	7	7	7	3
1073:	4	4	2	7	2	2	5	5
1081:	4	1	4	5	5	5	6	4
1089:	6	3	4	5	10	3	3	2
1097:	2	4	5	5	7	4	6	4
1105:	0	3	1	7	3	8	6	3
1113:	3	4	4	1	5	6	8	14
1121:	17	5	1	3	4	7	4	4
1129:	3	3	2	4	3	5	1	7
1137:	3	2	3	6	3	3	3	6
1145:	7	3	4	5	2	4	4	2
1153:	4	6	6	10	2	3	6	0
1161:	7	4	3	4	2	12	2	4
1169:	5	5	3	4	5	4	3	4
1177:	2	3	5	4	2	3	7	5
1185:	7	6	7	2	4	7	5	6
1193:	2	4	5	4	8	6	3	2
1201:	6	4	5	5	3	9	6	3
1209:	6	3	5	5	6	2	8	5
1217:	3	7	6	3	2	3	5	7
1225:	9	5	1	7	2	5	3	2

1233: 4 5 4 6 6 5 9 9

Sample Title: CP2211S16-17

Channel	1	2	3	4	5	6	7	8	9
1241:	6	2	5	4	3	1	5	6	
1249:	6	0	4	4	2	6	6	6	
1257:	3	3	4	7	3	0	5	1	
1265:	5	2	1	3	2	6	6	6	
1273:	2	2	0	4	4	5	3	7	
1281:	2	4	3	7	2	2	1	3	
1289:	2	1	4	4	6	1	3	5	
1297:	1	3	5	4	5	2	2	4	
1305:	0	3	8	3	4	1	2	4	
1313:	5	2	3	1	5	2	0	0	
1321:	4	1	3	3	1	1	0	1	
1329:	3	1	6	2	1	1	5	2	
1337:	0	3	1	5	2	1	3	1	
1345:	1	2	2	2	0	4	3	2	
1353:	0	2	0	0	2	2	1	2	
1361:	0	1	3	1	0	3	2	1	
1369:	6	3	1	2	7	1	2	0	
1377:	3	7	6	2	4	3	0	3	
1385:	3	1	0	1	2	2	2	0	
1393:	1	2	2	4	6	1	1	1	
1401:	3	3	1	1	2	2	1	3	
1409:	2	1	2	2	3	5	2	0	
1417:	4	2	2	2	3	2	1	3	
1425:	3	1	0	1	1	1	0	1	
1433:	2	1	1	0	2	2	0	2	
1441:	1	3	0	2	3	2	6	2	
1449:	2	4	2	1	5	0	0	3	
1457:	1	8	15	55	71	77	20	3	
1465:	0	3	0	0	1	0	1	1	
1473:	1	0	1	2	0	0	1	2	
1481:	0	2	1	2	1	1	2	1	
1489:	1	1	0	0	2	0	0	1	
1497:	3	0	0	0	2	0	1	1	
1505:	1	1	1	2	1	1	1	2	
1513:	1	0	3	1	0	1	1	1	
1521:	0	1	3	1	1	3	1	1	
1529:	1	2	3	0	1	0	0	3	
1537:	3	0	1	1	0	3	4	0	
1545:	1	0	2	2	0	1	0	0	
1553:	0	1	0	0	2	1	1	1	
1561:	2	0	1	0	0	0	1	1	
1569:	2	1	0	0	0	2	0	4	
1577:	0	2	0	2	1	0	0	0	
1585:	1	0	2	3	4	2	1	2	
1593:	1	1	0	0	1	1	1	0	
1601:	1	1	0	2	0	1	1	0	
1609:	1	0	1	1	0	0	1	2	
1617:	3	0	2	0	4	2	0	0	
1625:	1	5	1	0	0	1	1	0	
1633:	1	0	2	0	1	0	3	1	
1641:	1	0	0	1	1	0	0	0	
1649:	0	2	3	3	0	1	1	0	
1657:	2	1	0	1	1	0	1	0	

1665: 0 1 0 0 0 0 1 1

Sample Title: CP2211S16-17

Channel	1	2	3	4	5	6	7	8	9
1673:	1	1	3	0	0	2	0	0	
1681:	1	1	0	1	0	2	1	0	
1689:	3	1	0	1	0	1	0	0	
1697:	0	1	0	1	1	0	0	1	
1705:	2	0	0	0	1	1	0	0	
1713:	0	1	1	1	1	0	0	0	
1721:	1	0	1	1	4	0	0	1	
1729:	1	3	0	0	0	3	1	3	
1737:	1	0	0	1	0	0	0	0	
1745:	1	3	1	0	1	1	0	0	
1753:	1	2	1	0	0	0	0	0	
1761:	0	0	1	6	12	3	0	1	
1769:	0	2	0	3	0	1	1	0	
1777:	1	1	1	0	1	0	0	1	
1785:	1	1	0	1	1	1	0	1	
1793:	1	0	0	2	0	1	2	2	
1801:	1	0	1	1	1	0	1	0	
1809:	0	0	2	1	1	1	0	1	
1817:	0	0	0	0	2	0	0	1	
1825:	0	1	0	0	2	1	0	0	
1833:	1	2	0	0	1	2	0	0	
1841:	0	2	2	0	1	2	1	2	
1849:	1	0	0	0	1	0	0	1	
1857:	0	3	0	0	0	3	0	0	
1865:	1	0	0	1	0	0	0	0	
1873:	2	0	1	0	1	1	0	1	
1881:	1	0	0	0	1	0	0	1	
1889:	0	0	1	2	0	0	0	0	
1897:	1	0	2	0	1	0	0	1	
1905:	0	1	1	1	0	0	0	1	
1913:	0	0	1	1	0	1	0	0	
1921:	3	2	0	1	0	1	1	0	
1929:	0	1	1	0	2	1	0	0	
1937:	0	0	0	0	2	2	0	0	
1945:	1	0	0	1	0	0	0	2	
1953:	1	2	2	0	1	2	0	0	
1961:	0	0	1	0	1	1	0	0	
1969:	0	0	0	0	1	0	0	0	
1977:	2	2	0	0	0	1	0	0	
1985:	0	0	0	0	0	1	0	0	
1993:	0	0	0	1	2	1	0	0	
2001:	0	1	0	0	1	0	0	0	
2009:	3	0	1	0	0	2	1	1	
2017:	0	0	1	0	0	0	0	0	
2025:	0	1	0	0	2	0	0	1	
2033:	0	0	1	1	0	1	0	0	
2041:	0	3	1	0	2	2	0	4	
2049:	1	0	0	0	1	0	0	0	
2057:	0	1	0	0	0	0	2	0	
2065:	0	1	0	0	0	0	0	0	
2073:	1	0	0	0	1	2	1	0	
2081:	0	1	0	1	0	1	2	2	
2089:	0	0	0	0	0	2	1	1	

2097: 1 1 0 0 1 0 3 2

Sample Title: CP2211S16-17

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

2529: 1 0 0 0 0 0 0 0 1

Sample Title: CP2211S16-17

Channel								
2537:	0	0	0	0	0	0	0	2
2545:	0	0	0	0	0	0	0	1
2553:	0	1	1	0	1	0	1	0
2561:	0	0	0	0	0	0	0	0
2569:	0	0	0	0	1	1	2	0
2577:	0	0	0	0	0	0	0	0
2585:	1	0	0	0	0	0	0	0
2593:	0	1	0	0	0	0	0	0
2601:	0	3	1	0	0	0	0	1
2609:	1	0	0	1	3	5	9	3
2617:	7	1	1	0	0	0	0	0
2625:	0	0	0	0	0	0	0	1
2633:	0	0	0	0	1	0	1	0
2641:	1	0	0	0	0	0	0	1
2649:	0	0	0	1	0	0	0	0
2657:	0	0	0	0	0	0	0	0
2665:	0	1	0	0	0	0	0	0
2673:	0	0	0	0	1	0	0	0
2681:	0	0	1	0	0	0	0	0
2689:	1	0	0	0	0	0	0	0
2697:	1	0	0	0	0	0	0	1
2705:	0	0	0	0	0	0	1	0
2713:	0	0	0	2	1	1	0	1
2721:	0	0	0	0	0	0	0	0
2729:	0	0	0	0	0	0	0	0
2737:	1	0	0	0	0	0	0	1
2745:	0	1	0	0	1	0	0	0
2753:	0	1	0	0	0	0	0	0
2761:	0	0	1	0	0	0	0	0
2769:	0	0	0	0	1	0	0	0
2777:	0	1	0	1	0	0	0	0
2785:	0	0	0	0	0	0	0	0
2793:	0	1	1	0	1	0	0	0
2801:	0	0	0	0	0	1	1	0
2809:	0	0	0	0	0	1	0	1
2817:	0	0	0	0	0	0	0	0
2825:	1	0	0	0	0	0	0	0
2833:	0	0	0	0	0	0	1	0
2841:	1	0	0	0	0	0	0	2
2849:	0	0	0	0	0	0	0	0
2857:	0	0	1	0	0	0	0	0
2865:	0	0	0	2	2	0	0	0
2873:	0	0	0	0	0	0	0	1
2881:	0	0	0	1	1	0	0	0
2889:	0	1	1	0	0	0	0	0
2897:	0	0	0	0	0	1	1	0
2905:	0	0	0	0	0	0	1	0
2913:	0	0	0	0	0	0	0	0
2921:	0	0	1	1	0	0	0	0
2929:	1	0	1	0	0	1	0	0
2937:	0	1	0	0	0	1	0	1
2945:	0	0	0	0	0	0	0	1
2953:	0	0	0	0	0	1	0	1

2961: 0 0 0 0 0 1 0 0

Sample Title: CP2211S16-17

Channel	-----	-----	-----	-----	-----	-----	-----	-----
2969:	0	0	0	0	0	0	0	0
2977:	0	0	0	0	0	1	0	0
2985:	0	0	0	0	1	0	0	0
2993:	0	0	0	1	0	1	0	0
3001:	0	0	0	0	0	1	0	0
3009:	0	1	0	0	0	0	1	0
3017:	0	0	0	0	0	0	0	0
3025:	0	0	0	0	0	0	0	0
3033:	0	0	0	0	0	1	0	3
3041:	1	0	0	0	0	1	0	0
3049:	0	0	0	0	1	0	1	1
3057:	0	0	1	0	0	1	0	0
3065:	0	0	0	0	0	0	0	0
3073:	0	0	0	0	0	0	0	0
3081:	0	0	0	1	0	0	0	1
3089:	0	0	0	0	0	0	0	0
3097:	0	1	0	0	0	0	0	0
3105:	0	0	0	0	0	2	1	0
3113:	0	0	1	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	1	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	1	0	0	0	0
3177:	0	0	1	0	1	0	0	2
3185:	0	0	0	0	0	0	0	0
3193:	0	0	0	0	0	0	0	0
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	0	0	0	0	0
3241:	0	0	0	0	0	0	0	0
3249:	0	0	0	0	0	0	0	0
3257:	1	0	0	1	0	0	0	0
3265:	0	0	1	1	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	0	1	0	0	0	0
3297:	1	0	0	0	0	0	0	0
3305:	0	0	0	0	0	1	0	1
3313:	1	0	0	0	0	0	0	0
3321:	0	1	0	0	0	0	0	0
3329:	0	0	0	0	0	1	0	0
3337:	0	0	0	0	0	0	0	0
3345:	0	0	0	0	0	0	0	0
3353:	0	1	0	0	1	0	0	0
3361:	0	0	0	0	0	0	1	0
3369:	0	0	0	1	0	0	0	0
3377:	1	0	0	0	0	0	0	0
3385:	0	0	0	0	0	0	0	0

3393: 0 0 0 0 0 0 0 0 0

Sample Title: CP2211S16-17

Channel	1	2	3	4	5	6	7	8	9
3401:	0	0	0	0	1	0	0	0	0
3409:	0	0	0	0	0	0	0	0	0
3417:	0	0	1	0	0	0	0	0	0
3425:	0	1	0	0	0	2	0	0	0
3433:	0	0	0	1	0	0	1	0	0
3441:	0	0	0	0	0	0	0	0	0
3449:	0	1	0	0	0	1	0	0	0
3457:	0	0	0	0	0	0	0	0	0
3465:	0	0	1	0	0	1	0	0	0
3473:	0	0	0	0	0	1	0	0	0
3481:	0	0	0	0	0	0	0	0	0
3489:	1	0	0	0	0	0	0	0	0
3497:	0	1	0	0	0	0	0	0	0
3505:	0	0	0	0	0	0	1	0	0
3513:	0	0	0	1	1	1	0	0	0
3521:	0	0	0	0	0	0	0	0	0
3529:	0	0	0	0	0	0	1	0	0
3537:	0	0	0	0	0	0	0	0	0
3545:	0	0	0	0	0	0	0	0	0
3553:	0	0	0	0	0	0	0	0	0
3561:	0	0	0	0	0	1	0	0	0
3569:	0	0	0	0	0	0	0	0	0
3577:	0	0	0	0	0	1	0	0	0
3585:	0	0	0	0	0	0	0	1	0
3593:	0	0	0	0	0	0	0	1	0
3601:	0	0	0	0	1	0	0	0	0
3609:	0	0	0	2	0	1	0	0	0
3617:	0	0	1	0	0	0	0	0	0
3625:	0	0	0	0	0	0	0	0	0
3633:	0	0	0	1	0	0	0	0	0
3641:	0	0	0	0	0	0	0	1	0
3649:	1	0	0	1	0	0	0	0	0
3657:	0	0	0	0	0	0	0	0	0
3665:	0	0	1	0	0	1	0	0	0
3673:	1	0	0	0	0	0	0	0	0
3681:	1	0	0	0	0	0	0	0	0
3689:	1	0	0	0	1	0	0	0	0
3697:	0	0	1	0	0	0	0	0	0
3705:	0	0	0	0	0	0	0	0	0
3713:	0	1	0	0	0	1	0	0	0
3721:	0	0	0	1	0	0	1	1	0
3729:	0	0	0	0	0	0	0	0	0
3737:	0	0	0	0	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:	0	0	0	0	0	0	0	0	0
3769:	0	0	0	0	0	0	0	0	0
3777:	0	0	0	0	0	0	0	0	0
3785:	0	0	0	0	0	1	0	0	0
3793:	0	0	0	0	0	0	0	1	0
3801:	0	0	0	0	0	0	0	1	0
3809:	0	0	0	0	0	0	0	0	0
3817:	0	0	0	0	0	1	0	0	0

3825: 0 0 0 0 0 0 0 0 0

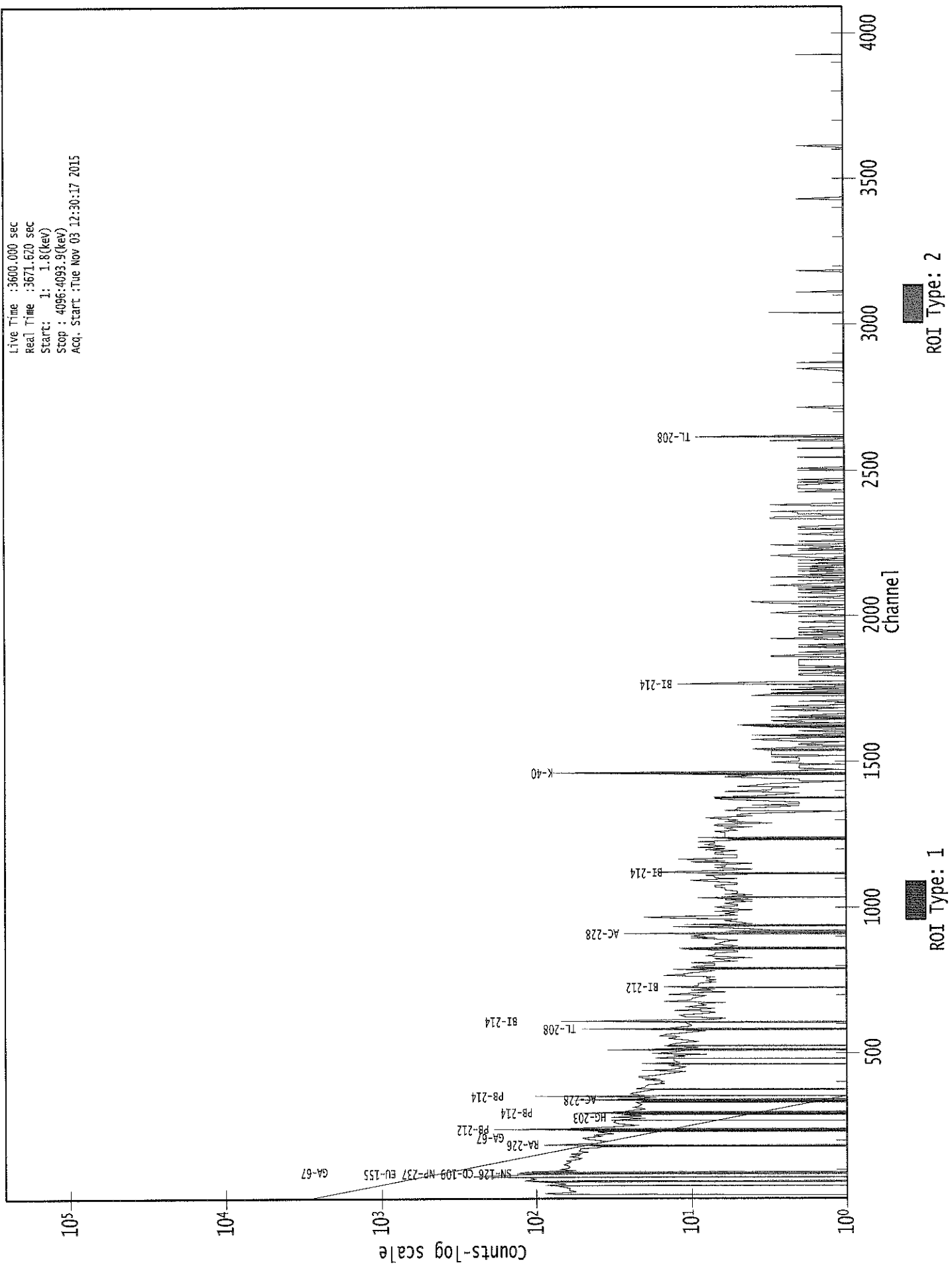
Sample Title: CP2211S16-17

Channel	1	2	3	4	5	6	7	8	9
3833:	0	0	0	0	0	0	0	0	0
3841:	0	1	0	0	0	0	0	0	0
3849:	0	1	0	0	0	0	0	0	0
3857:	0	0	0	0	0	0	0	0	0
3865:	0	0	0	1	0	0	0	0	0
3873:	0	0	0	0	0	1	0	0	0
3881:	0	0	0	0	0	0	1	0	0
3889:	0	0	0	0	0	0	0	0	0
3897:	0	0	0	0	0	1	0	1	0
3905:	0	0	0	0	0	0	0	0	0
3913:	0	0	0	0	0	0	1	1	0
3921:	0	0	0	0	0	2	0	0	0
3929:	0	0	0	0	1	0	0	0	0
3937:	0	0	0	0	0	0	0	0	0
3945:	1	0	1	0	1	0	0	0	0
3953:	0	0	0	0	0	0	0	0	0
3961:	0	0	0	1	0	0	0	0	0
3969:	0	0	1	0	0	0	0	0	0
3977:	0	0	0	0	0	1	0	0	0
3985:	0	0	0	1	0	0	0	0	0
3993:	0	0	1	0	0	0	0	0	0
4001:	0	0	0	0	1	1	0	0	0
4009:	0	0	0	0	0	0	0	0	0
4017:	0	0	0	0	0	0	0	0	0
4025:	0	1	0	0	0	1	0	1	0
4033:	0	0	1	0	0	0	0	0	0
4041:	0	0	0	1	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:	0	1	0	0	0	0	0	0	0
4073:	0	1	0	0	1	0	0	0	0
4081:	0	0	0	0	0	0	0	0	0
4089:	0	0	0	0	0	0	0	0	0

0669A

0000029032.CNF

Live Time :3600.000 sec
Real Time :3671.620 sec
Start : 1: 1.8(kev)
Stop : 4096:4093.9(kev)
Acq. Start :Tue Nov 03 12:30:17 2015



KJ
11/3/15Analysis Report for 1510064-12
CP2211S18-19

GAMMA SPECTRUM ANALYSIS

Sample Identification : 1510064-12
Sample Description : CP2211S18-19
Sample Type : SOIL

Sample Size : 4.857E+02 grams
Facility : Countroom

Sample Taken On : 10/6/2015 7:37:36AM
Acquisition Started : 11/3/2015 1:35:45PM

Procedure : GAS-1402 pCi
Operator : Administrator
Detector Name : GE1
Geometry : GAS-1402
Live Time : 3600.0 seconds
Real Time : 3601.3 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 : 29034

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
11/3/15

Analysis Report for 1510064-12
CP2211S18-19

PEAK LOCATE REPORT

Peak Locate Performed on : 11/3/2015 2:35:49PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096
Peak Search Sensitivity : 2.50

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
1	46.58	46.93	0.0000	0.00
2	63.08	63.43	0.0000	0.00
3	76.26	76.60	0.0000	0.00
4	87.80	88.13	0.0000	0.00
5	186.27	186.58	0.0000	0.00
6	238.79	239.07	0.0000	0.00
7	241.91	242.20	0.0000	0.00
8	270.01	270.28	0.0000	0.00
9	295.46	295.73	0.0000	0.00
10	300.07	300.33	0.0000	0.00
11	338.77	339.03	0.0000	0.00
12	352.28	352.53	0.0000	0.00
13	410.70	410.93	0.0000	0.00
14	419.78	420.01	0.0000	0.00
15	462.19	462.41	0.0000	0.00
16	510.95	511.15	0.0000	0.00
17	583.58	583.75	0.0000	0.00
18	609.60	609.76	0.0000	0.00
19	726.05	726.18	0.0000	0.00
20	829.81	829.89	0.0000	0.00
21	836.03	836.11	0.0000	0.00
22	840.52	840.60	0.0000	0.00
23	861.14	861.21	0.0000	0.00
24	911.71	911.77	0.0000	0.00
25	931.24	931.29	0.0000	0.00
26	934.61	934.65	0.0000	0.00
27	948.16	948.20	0.0000	0.00
28	959.96	960.00	0.0000	0.00
29	964.77	964.80	0.0000	0.00
30	969.16	969.20	0.0000	0.00
31	1031.58	1031.60	0.0000	0.00
32	1102.88	1102.87	0.0000	0.00
33	1110.67	1110.66	0.0000	0.00
34	1117.15	1117.13	0.0000	0.00
35	1120.81	1120.79	0.0000	0.00
36	1239.42	1239.36	0.0000	0.00
37	1334.06	1333.96	0.0000	0.00
38	1378.41	1378.30	0.0000	0.00
39	1401.02	1400.90	0.0000	0.00
40	1454.92	1454.78	0.0000	0.00
41	1461.50	1461.36	0.0000	0.00
42	1466.18	1466.04	0.0000	0.00

Analysis Report for 1510064-12
CP2211S18-19

<i>Peak No.</i>	<i>Energy (keV)</i>	<i>Centroid Channel</i>	<i>Centroid Uncertainty</i>	<i>Peak Significance</i>
43	1539.94	1539.77	0.0000	0.00
44	1631.37	1631.17	0.0000	0.00
45	1638.41	1638.20	0.0000	0.00
46	1649.67	1649.46	0.0000	0.00
47	1729.56	1729.32	0.0000	0.00
48	1756.47	1756.22	0.0000	0.00
49	1765.13	1764.87	0.0000	0.00
50	1795.48	1795.21	0.0000	0.00
51	1849.29	1849.00	0.0000	0.00
52	1873.98	1873.68	0.0000	0.00
53	1888.68	1888.38	0.0000	0.00
54	1897.15	1896.85	0.0000	0.00
55	2013.05	2012.70	0.0000	0.00
56	2105.02	2104.64	0.0000	0.00
57	2125.52	2125.13	0.0000	0.00
58	2138.73	2138.33	0.0000	0.00
59	2196.31	2195.89	0.0000	0.00
60	2204.26	2203.83	0.0000	0.00
61	2475.20	2474.67	0.0000	0.00
62	2615.37	2614.79	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1510064-12

CP2211S18-19

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/3/2015 2:35:49PM

Peak Analysis From Channel : 1

Peak Analysis To Channel : 4096

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
1	46.58	43 -	49	46.93	1.27E+02	77.48	9.97E+02	1.35
2	63.08	60 -	66	63.43	1.82E+02	100.57	1.72E+03	1.21
3	76.26	72 -	83	76.60	1.40E+03	166.20	2.72E+03	3.84
m 4	87.80	83 -	98	88.13	2.20E+02	64.37	8.14E+02	1.48
5	186.27	183 -	190	186.58	1.90E+02	80.42	9.41E+02	1.86
M 6	238.79	233 -	246	239.07	9.58E+02	76.76	4.41E+02	1.53
m 7	241.91	233 -	246	242.20	2.73E+02	83.59	4.99E+02	2.03
8	270.01	265 -	273	270.28	9.63E+01	66.47	6.19E+02	1.87
M 9	295.46	291 -	306	295.73	3.92E+02	50.80	2.50E+02	1.82
m 10	300.07	291 -	306	300.33	7.69E+01	44.54	3.00E+02	1.91
11	338.77	335 -	342	339.03	1.73E+02	57.86	4.40E+02	1.31
12	352.28	348 -	358	352.53	6.13E+02	78.43	4.88E+02	1.87
13	410.70	406 -	416	410.93	5.24E+01	57.42	4.09E+02	5.57
14	419.78	416 -	425	420.01	5.67E+01	47.48	2.89E+02	3.50
15	462.19	458 -	466	462.41	7.68E+01	45.77	2.76E+02	1.48
16	510.95	505 -	516	511.15	1.66E+02	59.13	3.54E+02	2.00
17	583.58	580 -	588	583.75	3.34E+02	50.82	1.88E+02	2.00
18	609.60	606 -	614	609.76	4.21E+02	53.16	1.76E+02	1.76
19	726.05	719 -	731	726.18	1.01E+02	48.88	2.31E+02	2.33
M 20	829.81	826 -	844	829.89	2.21E+01	27.86	1.07E+02	2.81
m 21	836.03	826 -	844	836.11	2.27E+01	28.64	1.13E+02	2.82
m 22	840.52	826 -	844	840.60	1.92E+01	25.51	1.02E+02	2.33
23	861.14	857 -	865	861.21	4.75E+01	30.83	1.17E+02	2.43
24	911.71	908 -	917	911.77	2.13E+02	38.82	8.91E+01	2.07
M 25	931.24	930 -	944	931.29	7.51E+00	8.72	1.83E+01	2.57
m 26	934.61	930 -	944	934.65	2.26E+01	24.98	7.83E+01	2.62
M 27	948.16	945 -	974	948.20	2.60E+01	22.39	7.64E+01	2.18
m 28	959.96	945 -	974	960.00	1.61E+01	20.62	6.40E+01	1.98
m 29	964.77	945 -	974	964.80	5.51E+01	26.48	7.34E+01	2.18
m 30	969.16	945 -	974	969.20	1.29E+02	31.32	7.16E+01	2.19
31	1031.58	1028 -	1035	1031.60	3.33E+01	22.27	6.13E+01	5.18
32	1102.88	1099 -	1106	1102.87	2.75E+01	20.30	4.69E+01	1.49
33	1110.67	1108 -	1115	1110.66	2.07E+01	20.59	5.86E+01	1.60
M 34	1117.15	1115 -	1128	1117.13	1.76E+01	16.73	4.78E+01	2.26
m 35	1120.81	1115 -	1128	1120.79	1.10E+02	28.17	7.82E+01	2.26
36	1239.42	1236 -	1245	1239.36	5.01E+01	34.77	1.42E+02	2.54
37	1334.06	1331 -	1339	1333.96	2.19E+01	23.06	7.03E+01	4.75
38	1378.41	1375 -	1382	1378.30	2.60E+01	17.20	3.20E+01	2.54
39	1401.02	1397 -	1404	1400.90	1.36E+01	14.83	2.69E+01	3.80
M 40	1454.92	1454 -	1467	1454.78	9.18E+00	2.40	2.00E+00	2.41

: 00674

Analysis Report for 1510064-12

CP2211S18-19

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
m	41	1461.50	1454 -	1467	1461.36	7.90E+02	57.29	2.50E+01	2.17
m	42	1466.18	1454 -	1467	1466.04	7.55E+00	8.94	2.00E+01	4.71
	43	1539.94	1528 -	1546	1539.77	2.15E+01	22.91	3.90E+01	12.53
	44	1631.37	1629 -	1633	1631.17	8.08E+00	8.17	7.83E+00	1.78
	45	1638.41	1635 -	1641	1638.20	1.06E+01	9.84	8.80E+00	3.48
	46	1649.67	1645 -	1652	1649.46	1.10E+01	11.83	1.60E+01	1.58
	47	1729.56	1725 -	1734	1729.32	1.92E+01	13.53	1.55E+01	2.55
	48	1756.47	1753 -	1759	1756.22	9.00E+00	6.00	0.00E+00	1.33
	49	1765.13	1760 -	1768	1764.87	7.99E+01	18.66	4.11E+00	2.65
	50	1795.48	1792 -	1799	1795.21	9.00E+00	9.17	8.00E+00	4.69
	51	1849.29	1843 -	1856	1849.00	2.34E+01	14.63	1.12E+01	6.00
	52	1873.98	1869 -	1877	1873.68	6.82E+00	9.19	8.36E+00	2.86
	53	1888.68	1884 -	1891	1888.38	8.42E+00	8.94	7.17E+00	1.14
	54	1897.15	1892 -	1900	1896.85	1.30E+01	7.21	0.00E+00	1.96
	55	2013.05	2010 -	2016	2012.70	9.92E+00	7.76	4.17E+00	1.58
	56	2105.02	2100 -	2109	2104.64	1.98E+01	14.56	1.64E+01	2.47
	57	2125.52	2122 -	2128	2125.13	8.00E+00	5.66	0.00E+00	1.16
	58	2138.73	2135 -	2140	2138.33	6.00E+00	4.90	0.00E+00	1.00
	59	2196.31	2194 -	2198	2195.89	6.07E+00	5.85	1.86E+00	2.68
	60	2204.26	2199 -	2207	2203.83	1.59E+01	9.60	4.11E+00	2.70
	61	2475.20	2470 -	2477	2474.67	5.81E+00	6.93	4.38E+00	2.71
	62	2615.37	2611 -	2619	2614.79	1.17E+02	21.63	0.00E+00	2.50

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

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/3/2015 2:35:49PM

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

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	1	46.58	43 -	49	1.27E+02	77.48	9.97E+02	6.09E+01
	2	63.08	60 -	66	1.82E+02	100.57	1.72E+03	7.96E+01
	3	76.26	72 -	83	1.40E+03	166.20	2.72E+03	1.22E+02
m	4	87.80	83 -	98	2.20E+02	64.37	8.14E+02	4.69E+01
	5	186.27	183 -	190	1.90E+02	80.42	9.41E+02	6.21E+01
M	6	238.79	233 -	246	9.58E+02	76.76	4.41E+02	3.45E+01

Analysis Report for 1510064-12

CP2211S18-19

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
m	7	241.91	233 -	246	2.73E+02	83.59	4.99E+02	3.67E+01
	8	270.01	265 -	273	9.63E+01	66.47	6.19E+02	5.22E+01
M	9	295.46	291 -	306	3.92E+02	50.80	2.50E+02	2.60E+01
m	10	300.07	291 -	306	7.69E+01	44.54	3.00E+02	2.85E+01
	11	338.77	335 -	342	1.73E+02	57.86	4.40E+02	4.24E+01
	12	352.28	348 -	358	6.13E+02	78.43	4.88E+02	5.00E+01
	13	410.70	406 -	416	5.24E+01	57.42	4.09E+02	4.57E+01
	14	419.78	416 -	425	5.67E+01	47.48	2.89E+02	3.70E+01
	15	462.19	458 -	466	7.68E+01	45.77	2.76E+02	3.48E+01
	16	510.95	505 -	516	1.66E+02	59.13	3.54E+02	2.18E+01
	17	583.58	580 -	588	3.34E+02	50.82	1.88E+02	2.90E+01
	18	609.60	606 -	614	4.21E+02	53.16	1.76E+02	2.78E+01
	19	726.05	719 -	731	1.01E+02	48.88	2.31E+02	3.66E+01
M	20	829.81	826 -	844	2.21E+01	27.86	1.07E+02	1.70E+01
m	21	836.03	826 -	844	2.27E+01	28.64	1.13E+02	1.75E+01
m	22	840.52	826 -	844	1.92E+01	25.51	1.02E+02	1.66E+01
	23	861.14	857 -	865	4.75E+01	30.83	1.17E+02	2.27E+01
	24	911.71	908 -	917	2.13E+02	38.82	8.91E+01	2.10E+01
M	25	931.24	930 -	944	7.51E+00	8.72	1.83E+01	7.03E+00
m	26	934.61	930 -	944	2.26E+01	24.98	7.83E+01	1.45E+01
M	27	948.16	945 -	974	2.60E+01	22.39	7.64E+01	1.44E+01
m	28	959.96	945 -	974	1.61E+01	20.62	6.40E+01	1.31E+01
m	29	964.77	945 -	974	5.51E+01	26.48	7.34E+01	1.41E+01
m	30	969.16	945 -	974	1.29E+02	31.32	7.16E+01	1.39E+01
	31	1031.58	1028 -	1035	3.33E+01	22.27	6.13E+01	1.57E+01
	32	1102.88	1099 -	1106	2.75E+01	20.30	4.69E+01	1.43E+01
	33	1110.67	1108 -	1115	2.07E+01	20.59	5.86E+01	1.52E+01
M	34	1117.15	1115 -	1128	1.76E+01	16.73	4.78E+01	1.14E+01
m	35	1120.81	1115 -	1128	1.10E+02	28.17	7.82E+01	1.45E+01
	36	1239.42	1236 -	1245	5.01E+01	34.77	1.42E+02	2.61E+01
	37	1334.06	1331 -	1339	2.19E+01	23.06	7.03E+01	8.25E+00
	38	1378.41	1375 -	1382	2.60E+01	17.20	3.20E+01	1.14E+01
	39	1401.02	1397 -	1404	1.36E+01	14.83	2.69E+01	1.06E+01
M	40	1454.92	1454 -	1467	9.18E+00	2.40	2.00E+00	2.33E+00
m	41	1461.50	1454 -	1467	7.90E+02	57.29	2.50E+01	8.21E+00
m	42	1466.18	1454 -	1467	7.55E+00	8.94	2.00E+01	7.34E+00
	43	1539.94	1528 -	1546	2.15E+01	22.91	3.90E+01	1.72E+01
	44	1631.37	1629 -	1633	8.08E+00	8.17	7.83E+00	4.82E+00
	45	1638.41	1635 -	1641	1.06E+01	9.84	8.80E+00	6.06E+00
	46	1649.67	1645 -	1652	1.10E+01	11.83	1.60E+01	8.05E+00
	47	1729.56	1725 -	1734	1.92E+01	13.53	1.55E+01	8.46E+00
	48	1756.47	1753 -	1759	9.00E+00	6.00	0.00E+00	0.00E+00
	49	1765.13	1760 -	1768	7.99E+01	18.66	4.11E+00	4.39E+00
	50	1795.48	1792 -	1799	9.00E+00	9.17	8.00E+00	5.70E+00
	51	1849.29	1843 -	1856	2.34E+01	14.63	1.12E+01	9.02E+00
	52	1873.98	1869 -	1877	6.82E+00	9.19	8.36E+00	6.22E+00
	53	1888.68	1884 -	1891	8.42E+00	8.94	7.17E+00	5.60E+00
	54	1897.15	1892 -	1900	1.30E+01	7.21	0.00E+00	0.00E+00
	55	2013.05	2010 -	2016	9.92E+00	7.76	4.17E+00	3.73E+00
	56	2105.02	2100 -	2109	1.98E+01	14.56	1.64E+01	9.47E+00
	57	2125.52	2122 -	2128	8.00E+00	5.66	0.00E+00	0.00E+00

Analysis Report for 1510064-12

CP2211S18-19

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
58	2138.73	2135 -	2140	6.00E+00	4.90	0.00E+00	0.00E+00
59	2196.31	2194 -	2198	6.07E+00	5.85	1.86E+00	2.59E+00
60	2204.26	2199 -	2207	1.59E+01	9.60	4.11E+00	4.39E+00
61	2475.20	2470 -	2477	5.81E+00	6.93	4.38E+00	4.09E+00
62	2615.37	2611 -	2619	1.17E+02	21.63	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 : 11/3/2015 2:35:49PM

Peak Analysis From Channel : 1

Peak Analysis To Channel : 4096

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

Peak Match Tolerance : 1.000 keV

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
1	46.58	43 -	49	46.93	1.27E+02	77.48	9.97E+02	PB-210
2	63.08	60 -	66	63.43	1.82E+02	100.57	1.72E+03	TH-234 TH-230
3	76.26	72 -	83	76.60	1.40E+03	166.20	2.72E+03	.....
m 4	87.80	83 -	98	88.13	2.20E+02	64.37	8.14E+02	SN-126 CD-109 LU-176
5	186.27	183 -	190	186.58	1.90E+02	80.42	9.41E+02	RA-226
M 6	238.79	233 -	246	239.07	9.58E+02	76.76	4.41E+02	PB-212
m 7	241.91	233 -	246	242.20	2.73E+02	83.59	4.99E+02	RA-224
8	270.01	265 -	273	270.28	9.63E+01	66.47	6.19E+02	.....
M 9	295.46	291 -	306	295.73	3.92E+02	50.80	2.50E+02	PB-214
m 10	300.07	291 -	306	300.33	7.69E+01	44.54	3.00E+02	PB-212 BI-210M GA-67
11	338.77	335 -	342	339.03	1.73E+02	57.86	4.40E+02	AC-228
12	352.28	348 -	358	352.53	6.13E+02	78.43	4.88E+02	PB-214
13	410.70	406 -	416	410.93	5.24E+01	57.42	4.09E+02	HO-166M
14	419.78	416 -	425	420.01	5.67E+01	47.48	2.89E+02	.....
15	462.19	458 -	466	462.41	7.68E+01	45.77	2.76E+02	.....
16	510.95	505 -	516	511.15	1.66E+02	59.13	3.54E+02	.....

Analysis Report for 1510064-12

CP2211S18-19

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	17	583.58	580 -	588	583.75	3.34E+02	50.82	1.88E+02	TL-208
	18	609.60	606 -	614	609.76	4.21E+02	53.16	1.76E+02	BI-214
	19	726.05	719 -	731	726.18	1.01E+02	48.88	2.31E+02	.....
M	20	829.81	826 -	844	829.89	2.21E+01	27.86	1.07E+02	.....
m	21	836.03	826 -	844	836.11	2.27E+01	28.64	1.13E+02	.....
m	22	840.52	826 -	844	840.60	1.92E+01	25.51	1.02E+02	.....
	23	861.14	857 -	865	861.21	4.75E+01	30.83	1.17E+02	TL-208
	24	911.71	908 -	917	911.77	2.13E+02	38.82	8.91E+01	LU-172 AC-228
M	25	931.24	930 -	944	931.29	7.51E+00	8.72	1.83E+01	.....
m	26	934.61	930 -	944	934.65	2.26E+01	24.98	7.83E+01	.....
M	27	948.16	945 -	974	948.20	2.60E+01	22.39	7.64E+01	.....
m	28	959.96	945 -	974	960.00	1.61E+01	20.62	6.40E+01	.....
m	29	964.77	945 -	974	964.80	5.51E+01	26.48	7.34E+01	EU-152
m	30	969.16	945 -	974	969.20	1.29E+02	31.32	7.16E+01	AC-228
	31	1031.58	1028 -	1035	1031.60	3.33E+01	22.27	6.13E+01	.....
	32	1102.88	1099 -	1106	1102.87	2.75E+01	20.30	4.69E+01	.....
	33	1110.67	1108 -	1115	1110.66	2.07E+01	20.59	5.86E+01	.....
M	34	1117.15	1115 -	1128	1117.13	1.76E+01	16.73	4.78E+01	.....
m	35	1120.81	1115 -	1128	1120.79	1.10E+02	28.17	7.82E+01	SC-46 TA-182 BI-214
	36	1239.42	1236 -	1245	1239.36	5.01E+01	34.77	1.42E+02	.....
	37	1334.06	1331 -	1339	1333.96	2.19E+01	23.06	7.03E+01	.....
	38	1378.41	1375 -	1382	1378.30	2.60E+01	17.20	3.20E+01	.....
	39	1401.02	1397 -	1404	1400.90	1.36E+01	14.83	2.69E+01	.....
M	40	1454.92	1454 -	1467	1454.78	9.18E+00	2.40	2.00E+00	.....
m	41	1461.50	1454 -	1467	1461.36	7.90E+02	57.29	2.50E+01	K-40
m	42	1466.18	1454 -	1467	1466.04	7.55E+00	8.94	2.00E+01	.....
	43	1539.94	1528 -	1546	1539.77	2.15E+01	22.91	3.90E+01	.....
	44	1631.37	1629 -	1633	1631.17	8.08E+00	8.17	7.83E+00	.....
	45	1638.41	1635 -	1641	1638.20	1.06E+01	9.84	8.80E+00	.....
	46	1649.67	1645 -	1652	1649.46	1.10E+01	11.83	1.60E+01	.....
	47	1729.56	1725 -	1734	1729.32	1.92E+01	13.53	1.55E+01	.....
	48	1756.47	1753 -	1759	1756.22	9.00E+00	6.00	0.00E+00	.....
	49	1765.13	1760 -	1768	1764.87	7.99E+01	18.66	4.11E+00	BI-214
	50	1795.48	1792 -	1799	1795.21	9.00E+00	9.17	8.00E+00	.....
	51	1849.29	1843 -	1856	1849.00	2.34E+01	14.63	1.12E+01	.....
	52	1873.98	1869 -	1877	1873.68	6.82E+00	9.19	8.36E+00	.....
	53	1888.68	1884 -	1891	1888.38	8.42E+00	8.94	7.17E+00	.....
	54	1897.15	1892 -	1900	1896.85	1.30E+01	7.21	0.00E+00	.....
	55	2013.05	2010 -	2016	2012.70	9.92E+00	7.76	4.17E+00	.....
	56	2105.02	2100 -	2109	2104.64	1.98E+01	14.56	1.64E+01	.....
	57	2125.52	2122 -	2128	2125.13	8.00E+00	5.66	0.00E+00	.....
	58	2138.73	2135 -	2140	2138.33	6.00E+00	4.90	0.00E+00	.....
	59	2196.31	2194 -	2198	2195.89	6.07E+00	5.85	1.86E+00	.....
	60	2204.26	2199 -	2207	2203.83	1.59E+01	9.60	4.11E+00	BI-214
	61	2475.20	2470 -	2477	2474.67	5.81E+00	6.93	4.38E+00	.....
	62	2615.37	2611 -	2619	2614.79	1.17E+02	21.63	0.00E+00	TL-208

Analysis Report for 1510064-12
CP2211S18-19

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 : 11/3/2015 2:35:49PM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	46.58	1.27E+02	77.48	1.68E-02	1.78E-03
	2	63.08	1.82E+02	100.57	2.49E-02	1.90E-03
	3	76.26	1.40E+03	166.20	2.77E-02	2.34E-03
m	4	87.80	2.20E+02	64.37	2.85E-02	2.73E-03
	5	186.27	1.90E+02	80.42	2.24E-02	2.03E-03
M	6	238.79	9.58E+02	76.76	1.92E-02	1.64E-03
m	7	241.91	2.73E+02	83.59	1.91E-02	1.61E-03
	8	270.01	9.63E+01	66.47	1.77E-02	1.41E-03
M	9	295.46	3.92E+02	50.80	1.67E-02	1.31E-03
m	10	300.07	7.69E+01	44.54	1.65E-02	1.30E-03
	11	338.77	1.73E+02	57.86	1.52E-02	1.22E-03
	12	352.28	6.13E+02	78.43	1.48E-02	1.19E-03
	13	410.70	5.24E+01	57.42	1.32E-02	1.09E-03
	14	419.78	5.67E+01	47.48	1.30E-02	1.08E-03
	15	462.19	7.68E+01	45.77	1.21E-02	1.04E-03
	16	510.95	1.66E+02	59.13	1.12E-02	9.90E-04
	17	583.58	3.34E+02	50.82	1.02E-02	9.15E-04
	18	609.60	4.21E+02	53.16	9.82E-03	8.88E-04
	19	726.05	1.01E+02	48.88	8.57E-03	7.76E-04
M	20	829.81	2.21E+01	27.86	7.70E-03	6.83E-04
m	21	836.03	2.27E+01	28.64	7.66E-03	6.78E-04
m	22	840.52	1.92E+01	25.51	7.62E-03	6.74E-04
	23	861.14	4.75E+01	30.83	7.48E-03	6.55E-04
	24	911.71	2.13E+02	38.82	7.14E-03	6.15E-04
M	25	931.24	7.51E+00	8.72	7.02E-03	6.05E-04
m	26	934.61	2.26E+01	24.98	7.00E-03	6.03E-04
M	27	948.16	2.60E+01	22.39	6.92E-03	5.96E-04
m	28	959.96	1.61E+01	20.62	6.86E-03	5.90E-04
m	29	964.77	5.51E+01	26.48	6.83E-03	5.88E-04
m	30	969.16	1.29E+02	31.32	6.80E-03	5.85E-04
	31	1031.58	3.33E+01	22.27	6.47E-03	5.53E-04
	32	1102.88	2.75E+01	20.30	6.14E-03	5.16E-04
	33	1110.67	2.07E+01	20.59	6.11E-03	5.12E-04
M	34	1117.15	1.76E+01	16.73	6.08E-03	5.08E-04

Analysis Report for 1510064-12
CP2211S18-19

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
m	35	1120.81	1.10E+02	28.17	6.06E-03	5.06E-04
	36	1239.42	5.01E+01	34.77	5.61E-03	4.68E-04
	37	1334.06	2.19E+01	23.06	5.31E-03	4.51E-04
	38	1378.41	2.60E+01	17.20	5.18E-03	4.40E-04
	39	1401.02	1.36E+01	14.83	5.12E-03	4.34E-04
M	40	1454.92	9.18E+00	2.40	4.98E-03	4.21E-04
m	41	1461.50	7.90E+02	57.29	4.97E-03	4.19E-04
m	42	1466.18	7.55E+00	8.94	4.96E-03	4.18E-04
	43	1539.94	2.15E+01	22.91	4.79E-03	4.00E-04
	44	1631.37	8.08E+00	8.17	4.61E-03	3.77E-04
	45	1638.41	1.06E+01	9.84	4.60E-03	3.75E-04
	46	1649.67	1.10E+01	11.83	4.58E-03	3.72E-04
	47	1729.56	1.92E+01	13.53	4.45E-03	3.52E-04
	48	1756.47	9.00E+00	6.00	4.41E-03	3.46E-04
	49	1765.13	7.99E+01	18.66	4.39E-03	3.43E-04
	50	1795.48	9.00E+00	9.17	4.35E-03	3.36E-04
	51	1849.29	2.34E+01	14.63	4.28E-03	3.26E-04
	52	1873.98	6.82E+00	9.19	4.25E-03	3.26E-04
	53	1888.68	8.42E+00	8.94	4.23E-03	3.26E-04
	54	1897.15	1.30E+01	7.21	4.22E-03	3.26E-04
	55	2013.05	9.92E+00	7.76	4.10E-03	3.26E-04
	56	2105.02	1.98E+01	14.56	4.02E-03	3.26E-04
	57	2125.52	8.00E+00	5.66	4.00E-03	3.26E-04
	58	2138.73	6.00E+00	4.90	3.99E-03	3.26E-04
	59	2196.31	6.07E+00	5.85	3.95E-03	3.26E-04
	60	2204.26	1.59E+01	9.60	3.95E-03	3.26E-04
	61	2475.20	5.81E+00	6.93	3.82E-03	3.26E-04
	62	2615.37	1.17E+02	21.63	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 : 11/3/2015 2:35:49PM
Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000028941.CNF

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
1	46.58	1.27E+02	77.48	4.50E+01	8.46E+00	8.16E+01	7.79E+01
2	63.08	1.82E+02	100.57	7.80E+01	1.33E+01	1.04E+02	1.01E+02

Analysis Report for 1510064-12

CP2211S18-19

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	3	76.26	1.40E+03	166.20	9.75E+00	8.28E+00	1.39E+03	1.66E+02
m	4	87.80	2.20E+02	64.37			2.20E+02	6.44E+01
	5	186.27	1.90E+02	80.42	6.41E+01	7.38E+00	1.26E+02	8.08E+01
M	6	238.79	9.58E+02	76.76	2.34E+01	6.34E+00	9.34E+02	7.70E+01
m	7	241.91	2.73E+02	83.59			2.73E+02	8.36E+01
	8	270.01	9.63E+01	66.47			9.63E+01	6.65E+01
M	9	295.46	3.92E+02	50.80	4.17E+00	5.50E+00	3.88E+02	5.11E+01
m	10	300.07	7.69E+01	44.54			7.69E+01	4.45E+01
	11	338.77	1.73E+02	57.86	2.22E-01	4.54E+00	1.73E+02	5.80E+01
	12	352.28	6.13E+02	78.43	8.83E+00	4.91E+00	6.04E+02	7.86E+01
	13	410.70	5.24E+01	57.42			5.24E+01	5.74E+01
	14	419.78	5.67E+01	47.48			5.67E+01	4.75E+01
	15	462.19	7.68E+01	45.77			7.68E+01	4.58E+01
	16	510.95	1.66E+02	59.13	8.12E+01	5.49E+00	8.47E+01	5.94E+01
	17	583.58	3.34E+02	50.82	6.34E+00	3.74E+00	3.28E+02	5.10E+01
	18	609.60	4.21E+02	53.16	5.20E+00	3.69E+00	4.16E+02	5.33E+01
	19	726.05	1.01E+02	48.88			1.01E+02	4.89E+01
M	20	829.81	2.21E+01	27.86			2.21E+01	2.79E+01
m	21	836.03	2.27E+01	28.64			2.27E+01	2.86E+01
m	22	840.52	1.92E+01	25.51			1.92E+01	2.55E+01
	23	861.14	4.75E+01	30.83			4.75E+01	3.08E+01
	24	911.71	2.13E+02	38.82	3.28E+00	2.53E+00	2.10E+02	3.89E+01
M	25	931.24	7.51E+00	8.72			7.51E+00	8.72E+00
m	26	934.61	2.26E+01	24.98			2.26E+01	2.50E+01
M	27	948.16	2.60E+01	22.39			2.60E+01	2.24E+01
m	28	959.96	1.61E+01	20.62			1.61E+01	2.06E+01
m	29	964.77	5.51E+01	26.48			5.51E+01	2.65E+01
m	30	969.16	1.29E+02	31.32			1.29E+02	3.13E+01
	31	1031.58	3.33E+01	22.27			3.33E+01	2.23E+01
	32	1102.88	2.75E+01	20.30			2.75E+01	2.03E+01
	33	1110.67	2.07E+01	20.59			2.07E+01	2.06E+01
M	34	1117.15	1.76E+01	16.73			1.76E+01	1.67E+01
m	35	1120.81	1.10E+02	28.17	2.28E+00	2.55E+00	1.07E+02	2.83E+01
	36	1239.42	5.01E+01	34.77			5.01E+01	3.48E+01
	37	1334.06	2.19E+01	23.06			2.19E+01	2.31E+01
	38	1378.41	2.60E+01	17.20			2.60E+01	1.72E+01
	39	1401.02	1.36E+01	14.83			1.36E+01	1.48E+01
M	40	1454.92	9.18E+00	2.40			9.18E+00	2.40E+00
m	41	1461.50	7.90E+02	57.29	6.46E+00	2.33E+00	7.83E+02	5.73E+01
m	42	1466.18	7.55E+00	8.94			7.55E+00	8.94E+00
	43	1539.94	2.15E+01	22.91			2.15E+01	2.29E+01
	44	1631.37	8.08E+00	8.17			8.08E+00	8.17E+00
	45	1638.41	1.06E+01	9.84			1.06E+01	9.84E+00
	46	1649.67	1.10E+01	11.83			1.10E+01	1.18E+01
	47	1729.56	1.92E+01	13.53			1.92E+01	1.35E+01
	48	1756.47	9.00E+00	6.00			9.00E+00	6.00E+00
	49	1765.13	7.99E+01	18.66			7.99E+01	1.87E+01
	50	1795.48	9.00E+00	9.17			9.00E+00	9.17E+00
	51	1849.29	2.34E+01	14.63			2.34E+01	1.46E+01
	52	1873.98	6.82E+00	9.19			6.82E+00	9.19E+00
	53	1888.68	8.42E+00	8.94			8.42E+00	8.94E+00
	54	1897.15	1.30E+01	7.21			1.30E+01	7.21E+00
	55	2013.05	9.92E+00	7.76			9.92E+00	7.76E+00
	56	2105.02	1.98E+01	14.56			1.98E+01	1.46E+01

Analysis Report for 1510064-12

CP2211S18-19

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
57	2125.52	8.00E+00	5.66			8.00E+00	5.66E+00
58	2138.73	6.00E+00	4.90			6.00E+00	4.90E+00
59	2196.31	6.07E+00	5.85			6.07E+00	5.85E+00
60	2204.26	1.59E+01	9.60			1.59E+01	9.60E+00
61	2475.20	5.81E+00	6.93			5.81E+00	6.93E+00
62	2615.37	1.17E+02	21.63	3.47E+00	1.48E+00	1.14E+02	2.17E+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 : 11/3/2015 2:35:49PM

Ref. Peak Energy : 0.00

Reference Date :

Peak Ratio : 0.00

Uncertainty : 0.00

Background File

: \\OR-GAMMA1\ApexRoot\Countroom\Data\0000028941.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	46.58	1.27E+02	77.48	4.50E+01	8.46E+00	8.16E+01	7.79E+01
2	63.08	1.82E+02	100.57	7.80E+01	1.33E+01	1.04E+02	1.01E+02
3	76.26	1.40E+03	166.20	9.75E+00	8.28E+00	1.39E+03	1.66E+02
m 4	87.80	2.20E+02	64.37			2.20E+02	6.44E+01
5	186.27	1.90E+02	80.42	6.41E+01	7.38E+00	1.26E+02	8.08E+01
M 6	238.79	9.58E+02	76.76	2.34E+01	6.34E+00	9.34E+02	7.70E+01
m 7	241.91	2.73E+02	83.59			2.73E+02	8.36E+01
8	270.01	9.63E+01	66.47			9.63E+01	6.65E+01
M 9	295.46	3.92E+02	50.80	4.17E+00	5.50E+00	3.88E+02	5.11E+01
m 10	300.07	7.69E+01	44.54			7.69E+01	4.45E+01
11	338.77	1.73E+02	57.86	2.22E-01	4.54E+00	1.73E+02	5.80E+01
12	352.28	6.13E+02	78.43	8.83E+00	4.91E+00	6.04E+02	7.86E+01
13	410.70	5.24E+01	57.42			5.24E+01	5.74E+01
14	419.78	5.67E+01	47.48			5.67E+01	4.75E+01
15	462.19	7.68E+01	45.77			7.68E+01	4.58E+01
16	510.95	1.66E+02	59.13	8.12E+01	5.49E+00	8.47E+01	5.94E+01
17	583.58	3.34E+02	50.82	6.34E+00	3.74E+00	3.28E+02	5.10E+01
18	609.60	4.21E+02	53.16	5.20E+00	3.69E+00	4.16E+02	5.33E+01
19	726.05	1.01E+02	48.88			1.01E+02	4.89E+01
M 20	829.81	2.21E+01	27.86			2.21E+01	2.79E+01
m 21	836.03	2.27E+01	28.64			2.27E+01	2.86E+01
m 22	840.52	1.92E+01	25.51			1.92E+01	2.55E+01

: 00682

Analysis Report for 1510064-12

CP2211S18-19

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	23	861.14	4.75E+01	30.83			4.75E+01	3.08E+01
	24	911.71	2.13E+02	38.82	3.28E+00	2.53E+00	2.10E+02	3.89E+01
M	25	931.24	7.51E+00	8.72			7.51E+00	8.72E+00
m	26	934.61	2.26E+01	24.98			2.26E+01	2.50E+01
M	27	948.16	2.60E+01	22.39			2.60E+01	2.24E+01
m	28	959.96	1.61E+01	20.62			1.61E+01	2.06E+01
m	29	964.77	5.51E+01	26.48			5.51E+01	2.65E+01
m	30	969.16	1.29E+02	31.32			1.29E+02	3.13E+01
	31	1031.58	3.33E+01	22.27			3.33E+01	2.23E+01
	32	1102.88	2.75E+01	20.30			2.75E+01	2.03E+01
	33	1110.67	2.07E+01	20.59			2.07E+01	2.06E+01
M	34	1117.15	1.76E+01	16.73			1.76E+01	1.67E+01
m	35	1120.81	1.10E+02	28.17	2.28E+00	2.55E+00	1.07E+02	2.83E+01
	36	1239.42	5.01E+01	34.77			5.01E+01	3.48E+01
	37	1334.06	2.19E+01	23.06			2.19E+01	2.31E+01
	38	1378.41	2.60E+01	17.20			2.60E+01	1.72E+01
	39	1401.02	1.36E+01	14.83			1.36E+01	1.48E+01
M	40	1454.92	9.18E+00	2.40			9.18E+00	2.40E+00
m	41	1461.50	7.90E+02	57.29	6.46E+00	2.33E+00	7.83E+02	5.73E+01
m	42	1466.18	7.55E+00	8.94			7.55E+00	8.94E+00
	43	1539.94	2.15E+01	22.91			2.15E+01	2.29E+01
	44	1631.37	8.08E+00	8.17			8.08E+00	8.17E+00
	45	1638.41	1.06E+01	9.84			1.06E+01	9.84E+00
	46	1649.67	1.10E+01	11.83			1.10E+01	1.18E+01
	47	1729.56	1.92E+01	13.53			1.92E+01	1.35E+01
	48	1756.47	9.00E+00	6.00			9.00E+00	6.00E+00
	49	1765.13	7.99E+01	18.66			7.99E+01	1.87E+01
	50	1795.48	9.00E+00	9.17			9.00E+00	9.17E+00
	51	1849.29	2.34E+01	14.63			2.34E+01	1.46E+01
	52	1873.98	6.82E+00	9.19			6.82E+00	9.19E+00
	53	1888.68	8.42E+00	8.94			8.42E+00	8.94E+00
	54	1897.15	1.30E+01	7.21			1.30E+01	7.21E+00
	55	2013.05	9.92E+00	7.76			9.92E+00	7.76E+00
	56	2105.02	1.98E+01	14.56			1.98E+01	1.46E+01
	57	2125.52	8.00E+00	5.66			8.00E+00	5.66E+00
	58	2138.73	6.00E+00	4.90			6.00E+00	4.90E+00
	59	2196.31	6.07E+00	5.85			6.07E+00	5.85E+00
	60	2204.26	1.59E+01	9.60			1.59E+01	9.60E+00
	61	2475.20	5.81E+00	6.93			5.81E+00	6.93E+00
	62	2615.37	1.17E+02	21.63	3.47E+00	1.48E+00	1.14E+02	2.17E+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 1510064-12
CP2211S18-19

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	2.28E+01	2.59E+00
CD-109	0.991	88.03 *	3.72	3.35E+00	1.05E+00
SN-126	0.992	87.57 *	37.00	3.23E-01	9.93E-02
TL-208	0.941	583.14 *	30.22	1.65E+00	2.96E-01
		860.37 *	4.48	2.19E+00	1.44E+00
		2614.66 *	35.85	1.29E+00	2.70E-01
PB-210	0.999	46.50 *	4.25	1.77E+00	1.70E+00
PB-212	0.996	238.63 *	44.60	1.69E+00	2.00E-01
		300.09 *	3.41	2.11E+00	1.23E+00
BI-214	0.972	609.31 *	46.30	1.41E+00	2.22E-01
		1120.29 *	15.10	1.81E+00	5.01E-01
		1764.49 *	15.80	1.78E+00	4.38E-01
		2204.22 *	4.98	1.25E+00	7.62E-01
PB-214	0.983	295.21 *	19.19	1.87E+00	2.87E-01
		351.92 *	37.19	1.70E+00	2.61E-01
RA-224	0.870	240.98 *	3.95	5.61E+00	1.78E+00
RA-226	0.999	186.21 *	3.28	2.66E+00	5.16E+00
AC-228	0.961	338.32 *	11.40	1.55E+00	5.34E-01
		911.07 *	27.70	1.64E+00	3.35E-01
		969.11 *	16.60	1.76E+00	4.55E-01
TH-234	0.993	63.29 *	3.80	1.71E+00	1.67E+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 : 11/3/2015 2:35:49PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

Analysis Report for 1510064-12
 CP2211S18-19

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
3	76.26	3.87305E-01	5.97		
8	270.01	2.67392E-02	34.53		
13	410.70	1.45417E-02	54.84	Tol.	HO-166M
14	419.78	1.57518E-02	41.86		
15	462.19	2.13450E-02	29.78		
16	510.95	2.35244E-02	35.06		
19	726.05	2.81778E-02	24.09		
M	20	829.81	6.13737E-03		
m	21	836.03	6.29242E-03		
m	22	840.52	5.32995E-03		
M	25	931.24	2.08597E-03		
m	26	934.61	6.28950E-03		
M	27	948.16	7.22934E-03	43.01	Sum
m	28	959.96	4.48262E-03	63.87	
m	29	964.77	1.53145E-02	24.02	Tol. EU-152
	31	1031.58	9.25998E-03	33.40	Sum
	32	1102.88	7.64978E-03	36.85	Sum
	33	1110.67	5.74444E-03	49.79	
M	34	1117.15	4.90078E-03	47.40	
	36	1239.42	1.39233E-02	34.68	
	37	1334.06	6.07456E-03	52.72	
	38	1378.41	7.22222E-03	33.09	
	39	1401.02	3.76543E-03	54.71	
M	40	1454.92	2.55008E-03	13.06	
m	42	1466.18	2.09763E-03	59.22	
	43	1539.94	5.97900E-03	53.23	
	44	1631.37	2.24537E-03	50.54	
	45	1638.41	2.94444E-03	46.40	
	46	1649.67	3.05556E-03	53.78	
	47	1729.56	5.34465E-03	35.15	Sum
	48	1756.47	2.50000E-03	33.33	Sum
	50	1795.48	2.50000E-03	50.92	
	51	1849.29	6.50383E-03	31.24	
	52	1873.98	1.89394E-03	67.41	
	53	1888.68	2.33796E-03	53.13	
	54	1897.15	3.61111E-03	27.74	
	55	2013.05	2.75463E-03	39.14	
	56	2105.02	5.49603E-03	36.79	S-Esc
	57	2125.52	2.22222E-03	35.36	
	58	2138.73	1.66667E-03	40.82	
	59	2196.31	1.68651E-03	48.20	
	61	2475.20	1.61458E-03	59.60	

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 1510064-12
CP2211S18-19

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	2.28E+01	2.59E+00
CD-109	0.99	88.03 *	3.72	3.35E+00	1.05E+00
SN-126	0.99	87.57 *	37.00	3.23E-01	9.93E-02
TL-208	0.94	583.14 *	30.22	1.65E+00	2.96E-01
		860.37 *	4.48	2.19E+00	1.44E+00
		2614.66 *	35.85	1.29E+00	2.70E-01
PB-210	0.99	46.50 *	4.25	1.77E+00	1.70E+00
PB-212	0.99	238.63 *	44.60	1.69E+00	2.00E-01
		300.09 *	3.41	2.11E+00	1.23E+00
BI-214	0.97	609.31 *	46.30	1.41E+00	2.22E-01
		1120.29 *	15.10	1.81E+00	5.01E-01
		1764.49 *	15.80	1.78E+00	4.38E-01
		2204.22 *	4.98	1.25E+00	7.62E-01
PB-214	0.98	295.21 *	19.19	1.87E+00	2.87E-01
		351.92 *	37.19	1.70E+00	2.61E-01
RA-224	0.87	240.98 *	3.95	5.61E+00	1.78E+00
RA-226	0.99	186.21 *	3.28	2.66E+00	5.16E+00
AC-228	0.96	338.32 *	11.40	1.55E+00	5.34E-01
		911.07 *	27.70	1.64E+00	3.35E-01
		969.11 *	16.60	1.76E+00	4.55E-01
TH-234	0.99	63.29 *	3.80	1.71E+00	1.67E+00

* = Energy line found in the spectrum.

- = Manually added nuclide.

? = Manually edited nuclide.

@ = Energy line not used for Weighted Mean Activity

Energy Tolerance : 1.000 keV

Nuclide confidence index threshold = 0.30

Errors quoted at 2.000sigma

INTERFERENCE CORRECTED REPORT

Analysis Report for 1510064-12

CP2211S18-19

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
K-40	0.927	2.28E+01	2.59E+00	
? CD-109	0.991	3.35E+00	1.05E+00	
? SN-126	0.992	3.23E-01	9.93E-02	
TL-208	0.941	1.47E+00	1.98E-01	
PB-210	0.999	1.77E+00	1.70E+00	
PB-212	0.996	1.70E+00	1.97E-01	
BI-214	0.972	1.52E+00	1.79E-01	
PB-214	0.983	1.78E+00	1.93E-01	
RA-224	0.870	5.61E+00	1.78E+00	
RA-226	0.999	2.66E+00	5.16E+00	
AC-228	0.961	1.66E+00	2.41E-01	
TH-234	0.993	1.71E+00	1.67E+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 1510064-12

CP2211S18-19

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/3/2015 2:35:49PM
 Peak Locate From Channel : 1
 Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
3	76.26	3.87305E-01	5.97		
8	270.01	2.67392E-02	34.53		
13	410.70	1.45417E-02	54.84	Tol.	HO-166M
14	419.78	1.57518E-02	41.86		
15	462.19	2.13450E-02	29.78		
16	510.95	2.35244E-02	35.06		
19	726.05	2.81778E-02	24.09		
M 20	829.81	6.13737E-03	63.04		
m 21	836.03	6.29242E-03	63.21		
m 22	840.52	5.32995E-03	66.49		
M 25	931.24	2.08597E-03	58.05		
m 26	934.61	6.28950E-03	55.16		
M 27	948.16	7.22934E-03	43.01	Sum	
m 28	959.96	4.48262E-03	63.87		
m 29	964.77	1.53145E-02	24.02	Tol.	EU-152
31	1031.58	9.25998E-03	33.40	Sum	
32	1102.88	7.64978E-03	36.85	Sum	
33	1110.67	5.74444E-03	49.79		
M 34	1117.15	4.90078E-03	47.40		
36	1239.42	1.39233E-02	34.68		
37	1334.06	6.07456E-03	52.72		
38	1378.41	7.22222E-03	33.09		
39	1401.02	3.76543E-03	54.71		
M 40	1454.92	2.55008E-03	13.06		
m 42	1466.18	2.09763E-03	59.22		
43	1539.94	5.97900E-03	53.23		
44	1631.37	2.24537E-03	50.54		
45	1638.41	2.94444E-03	46.40		
46	1649.67	3.05556E-03	53.78		
47	1729.56	5.34465E-03	35.15	Sum	
48	1756.47	2.50000E-03	33.33	Sum	
50	1795.48	2.50000E-03	50.92		
51	1849.29	6.50383E-03	31.24		
52	1873.98	1.89394E-03	67.41		
53	1888.68	2.33796E-03	53.13		

Analysis Report for 1510064-12
CP2211S18-19

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
54	1897.15	3.61111E-03	27.74		
55	2013.05	2.75463E-03	39.14		
56	2105.02	5.49603E-03	36.79	S-Esc	
57	2125.52	2.22222E-03	35.36		
58	2138.73	1.66667E-03	40.82		
59	2196.31	1.68651E-03	48.20		
61	2475.20	1.61458E-03	59.60		

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	-1.19E-02	8.21E-01	8.21E-01
+	NA-22	1274.54	99.94	-2.58E-03	9.13E-02	9.13E-02
+	NA-24	1368.53	99.99	1.06E+12	1.82E+12	3.46E+12
		2754.09	99.86	3.94E+11		1.82E+12
+	AL-26	1808.65	99.76	-3.22E-02	4.69E-02	4.69E-02
+	K-40	1460.81	* 10.67	2.28E+01	1.07E+00	1.07E+00
+	@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88	94.40	4.23E-02	7.74E-02	7.74E-02
		78.34	96.00	3.12E-01		1.00E-01
+	SC-46	889.25	99.98	-7.50E-02	9.63E-02	9.63E-02
		1120.51	99.99	2.52E-01		1.78E-01
+	V-48	983.52	99.98	-1.26E-03	2.87E-01	2.87E-01
		1312.10	97.50	1.18E-01		3.12E-01
+	CR-51	320.08	9.83	-1.31E-01	1.11E+00	1.11E+00
+	MN-54	834.83	99.97	8.64E-03	9.68E-02	9.68E-02
+	CO-56	846.75	99.96	1.73E-02	9.05E-02	9.05E-02
		1037.75	14.03	-1.97E-01		7.51E-01
		1238.25	67.00	1.50E-01		2.59E-01
		1771.40	15.51	-2.48E-01		3.14E-01
		2598.48	16.90	-3.09E-02		2.87E-01
+	CO-57	122.06	85.51	1.98E-02	6.59E-02	6.59E-02
		136.48	10.60	1.11E-02		5.65E-01

Analysis Report for 1510064-12

CP2211S18-19

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	CO-58	810.76	99.40	-1.83E-02	9.81E-02	9.81E-02
+	FE-59	1099.22	56.50	-3.14E-02	2.21E-01	2.21E-01
		1291.56	43.20	-7.90E-02		3.28E-01
+	CO-60	1173.22	100.00	5.50E-03	9.23E-02	1.00E-01
		1332.49	100.00	-1.27E-02		9.23E-02
+	ZN-65	1115.52	50.75	-7.33E-01	1.84E-01	1.84E-01
+	GA-67	93.31	35.70	1.57E+02	8.14E+01	8.14E+01
		208.95	2.24	3.46E+02		1.14E+03
		300.22	16.00	-3.39E+02		1.74E+02
+	SE-75	121.11	16.70	-6.20E-02	1.07E-01	3.61E-01
		136.00	59.20	-8.10E-02		1.09E-01
		264.65	59.80	-7.70E-04		1.07E-01
		279.53	25.20	1.91E-01		2.77E-01
		400.65	11.40	1.34E-01		6.27E-01
+	RB-82	776.52	13.00	-5.06E-01	1.25E+00	1.25E+00
+	RB-83	520.41	46.00	-7.41E-02	1.67E-01	1.67E-01
		529.64	30.30	-6.23E-02		2.77E-01
		552.65	16.40	-2.92E-02		5.23E-01
+	KR-85	513.99	0.43	4.67E+01	2.40E+01	2.40E+01
+	SR-85	513.99	99.27	2.75E-01	1.41E-01	1.41E-01
+	Y-88	898.02	93.40	-4.66E-02	7.25E-02	9.70E-02
		1836.01	99.38	-2.73E-02		7.25E-02
+	NB-93M	16.57	9.43	-1.62E+01	7.97E+01	7.97E+01
+	NB-94	702.63	100.00	-2.73E-02	7.66E-02	7.66E-02
		871.10	100.00	-6.26E-03		8.08E-02
+	NB-95	765.79	99.81	3.86E-02	1.60E-01	1.60E-01
+	NB-95M	235.69	25.00	-6.90E+02	6.37E+01	6.37E+01
+	ZR-95	724.18	43.70	-1.68E-01	1.83E-01	2.98E-01
		756.72	55.30	-5.08E-02		1.83E-01
+	MO-99	181.06	6.20	1.20E+01	7.19E+02	1.17E+03
		739.58	12.80	1.39E+02		7.19E+02
		778.00	4.50	-8.92E+02		2.08E+03
+	RU-103	497.08	89.00	3.35E-02	1.28E-01	1.28E-01
+	RU-106	621.84	9.80	1.41E-01	7.97E-01	7.97E-01
+	AG-108M	433.93	89.90	2.05E-02	7.61E-02	7.61E-02
		614.37	90.40	3.07E-03		7.63E-02
		722.95	90.50	-1.57E-01		9.88E-02
+	CD-109	88.03	* 3.72	3.35E+00	4.14E+00	4.14E+00
+	AG-110M	657.75	93.14	2.40E-02	8.13E-02	8.13E-02
		677.61	10.53	-1.35E-01		7.45E-01
		706.67	16.46	2.68E-01		5.58E-01
		763.93	21.98	-4.36E-01		3.93E-01
		884.67	71.63	-1.78E-02		1.20E-01
		1384.27	23.94	-2.70E-02		3.18E-01
+	CD-113M	263.70	0.02	-3.36E+00	2.37E+02	2.37E+02
+	SN-113	255.12	1.93	-1.46E+00	1.03E-01	3.25E+00
		391.69	64.90	-6.74E-03		1.03E-01

Analysis Report for 1510064-12

CP2211S18-19

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	TE123M	159.00	84.10	-3.73E-02	7.58E-02	7.58E-02
+	SB-124	602.71	97.87	3.21E-02	1.04E-01	1.04E-01
		645.85	7.26	2.77E-01		1.44E+00
		722.78	11.10	-1.77E+00		1.11E+00
		1691.02	49.00	8.93E-02		1.95E-01
+	I-125	35.49	6.49	1.72E-01	3.42E+00	3.42E+00
+	SB-125	176.33	6.89	9.66E-02	2.20E-01	8.43E-01
		427.89	29.33	-2.61E-02		2.20E-01
		463.38	10.35	6.76E-01		8.13E-01
		600.56	17.80	1.35E-01		4.30E-01
		635.90	11.32	-5.65E-02		6.45E-01
+	SB-126	414.70	83.30	-2.35E-01	3.77E-01	4.15E-01
		666.33	99.60	3.20E-01		3.93E-01
		695.00	99.60	1.30E-01		3.77E-01
		720.50	53.80	8.05E-02		7.90E-01
+	SN-126	87.57	* 37.00	3.23E-01	3.99E-01	3.99E-01
+	SB-127	473.00	25.00	-1.72E+01	3.15E+01	3.65E+01
		685.20	35.70	9.05E-02		3.15E+01
		783.80	14.70	5.74E+01		9.66E+01
+	I-129	29.78	57.00	3.81E-01	5.35E-01	5.35E-01
		33.60	13.20	-9.94E-01		1.41E+00
		39.58	7.52	1.79E-01		1.63E+00
+	I-131	284.30	6.05	-4.44E+00	7.95E-01	9.83E+00
		364.48	81.20	2.80E-01		7.95E-01
		636.97	7.26	1.22E-01		1.14E+01
		722.89	1.80	-9.02E+01		5.68E+01
+	TE-132	49.72	13.10	-7.50E+01	2.60E+01	2.44E+02
		228.16	88.00	-4.27E+00		2.60E+01
+	BA-133	81.00	33.00	-9.49E-01	1.05E-01	1.92E-01
		302.84	17.80	1.23E-01		3.54E-01
		356.01	60.00	-7.30E-01		1.05E-01
+	I-133	529.87	86.30	-1.15E+08	5.11E+08	5.11E+08
+	XE-133	81.00	38.00	-3.44E+01	6.95E+00	6.95E+00
+	CS-134	563.23	8.38	-2.48E-01	7.94E-02	8.18E-01
		569.32	15.43	2.54E-01		5.07E-01
		604.70	97.60	1.72E-02		7.94E-02
		795.84	85.40	5.64E-02		1.04E-01
		801.93	8.73	-5.52E-02		8.40E-01
+	CS-135	268.24	16.00	5.55E-01	4.30E-01	4.30E-01
+	@ 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	2.37E+00	3.05E-01	3.33E+00
		163.89	4.61	4.32E+00		5.59E+00
		176.55	13.56	2.14E-01		1.86E+00
		273.65	12.66	-4.94E-01		1.96E+00
		340.57	48.50	1.31E+00		7.43E-01
		818.50	99.70	-2.03E-02		3.05E-01
		1048.07	79.60	-1.56E-01		4.79E-01

Analysis Report for 1510064-12
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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	CS-136	1235.34	19.70	2.60E-01	3.05E-01	2.71E+00
+	CS-137	661.65	85.12	-5.09E-02	8.44E-02	8.44E-02
+	LA-138	788.74	34.00	-7.81E-02	9.36E-02	2.33E-01
		1435.80	66.00	-1.86E-02		9.36E-02
+	CE-139	165.85	80.35	4.83E-02	8.13E-02	8.13E-02
+	BA-140	162.64	6.70	-6.40E-01	1.22E+00	3.91E+00
		304.84	4.50	-3.69E+00		5.68E+00
		423.70	3.20	1.11E+00		9.51E+00
		437.55	2.00	-8.55E-01		1.49E+01
		537.32	25.00	-2.81E-01		1.22E+00
+	LA-140	328.77	20.50	6.63E-01	3.59E-01	1.48E+00
		487.03	45.50	2.35E-02		6.61E-01
		815.85	23.50	-2.27E-01		1.40E+00
		1596.49	95.49	1.20E-01		3.59E-01
+	CE-141	145.44	48.40	1.40E-01	2.13E-01	2.13E-01
+	CE-143	57.36	11.80	-1.36E+05	3.51E+05	9.86E+05
		293.26	42.00	1.08E+06		3.51E+05
		664.55	5.20	8.23E+05		2.32E+06
+	CE-144	133.54	10.80	9.99E-02	5.63E-01	5.63E-01
+	PM-144	476.78	42.00	-2.72E-02	8.10E-02	1.46E-01
		618.01	98.60	4.72E-02		8.10E-02
		696.49	99.49	1.70E-02		8.31E-02
+	PM-145	36.85	21.70	-3.88E-01	3.58E-01	6.61E-01
		37.36	39.70	4.73E-02		3.58E-01
		42.30	15.10	7.77E-02		6.71E-01
		72.40	2.31	-1.21E+00		3.73E+00
+	PM-146	453.90	39.94	-1.14E-02	1.62E-01	1.62E-01
		735.90	14.01	3.73E-01		5.55E-01
		747.13	13.10	7.49E-02		5.84E-01
+	ND-147	91.11	28.90	-2.66E+00	1.53E+00	1.53E+00
		531.02	13.10	-1.54E-01		3.03E+00
+	PM-149	285.90	3.10	-6.72E+01	1.22E+04	1.22E+04
+	EU-152	121.78	20.50	7.71E-02	2.56E-01	2.56E-01
		244.69	5.40	-6.38E-01		1.24E+00
		344.27	19.13	-9.71E-02		2.82E-01
		778.89	9.20	-1.53E-01		8.44E-01
		964.01	10.40	-1.74E+00		1.08E+00
		1085.78	7.22	-1.31E-01		1.20E+00
		1112.02	9.60	5.42E-01		9.17E-01
		1407.95	14.94	1.63E-01		5.65E-01
+	GD-153	97.43	31.30	4.60E-02	1.87E-01	1.87E-01
		103.18	22.20	6.16E-02		2.62E-01
+	EU-154	123.07	40.50	-5.28E-02	1.31E-01	1.31E-01
		723.30	19.70	-7.25E-01		4.57E-01
		873.19	11.50	-1.92E-02		7.09E-01
		996.32	10.30	-1.72E-01		8.58E-01
		1004.76	17.90	-1.49E-01		4.55E-01
		1274.45	35.50	-7.16E-03		2.53E-01
+	EU-155	86.50	30.90	1.34E-01	2.38E-01	2.38E-01

Analysis Report for 1510064-12
CP2211S18-19

Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)	
	EU-155	105.30	20.70	8.83E-02	2.38E-01	2.62E-01
+	EU-156	811.77	10.40	-4.79E-01	2.56E+00	2.56E+00
		1153.47	7.20	2.07E+00		5.21E+00
		1230.71	8.90	1.10E+00		4.63E+00
+	HO-166M	184.41	72.60	1.30E-01	9.95E-02	9.95E-02
		280.45	29.60	-3.07E-03		1.87E-01
		410.94	11.10	5.32E-01		6.88E-01
		711.69	54.10	-3.62E-02		1.49E-01
+	TM-171	66.72	0.14	8.37E+00	5.36E+01	5.36E+01
+	HF-172	81.75	4.52	-2.29E+00	4.94E-01	1.40E+00
		125.81	11.30	-2.61E-01		4.94E-01
+	LU-172	181.53	20.60	-5.54E-01	2.65E+00	5.23E+00
		810.06	16.63	-5.15E-02		8.54E+00
		912.12	15.25	5.84E+01		2.02E+01
		1093.66	62.50	1.82E-01		2.65E+00
+	LU-173	100.72	5.24	1.43E-01	3.34E-01	1.07E+00
		272.11	21.20	3.73E-01		3.34E-01
+	HF-175	343.40	84.00	-2.71E-02	8.38E-02	8.38E-02
+	LU-176	88.34	13.30	9.78E-01	5.80E-02	5.63E-01
		201.83	86.00	-2.84E-02		6.82E-02
		306.78	94.00	-1.54E-03		5.80E-02
+	TA-182	67.75	41.20	1.15E-01	2.11E-01	2.11E-01
		1121.30	34.90	6.08E-01		4.75E-01
		1189.05	16.23	3.57E-02		6.75E-01
		1221.41	26.98	4.52E-02		4.46E-01
		1231.02	11.44	2.79E-01		1.18E+00
+	IR-192	308.46	29.68	-8.43E-03	1.86E-01	2.42E-01
		468.07	48.10	3.29E-02		1.86E-01
+	HG-203	279.19	77.30	5.05E-02	1.16E-01	1.16E-01
+	BI-207	569.67	97.72	4.45E-02	7.95E-02	7.95E-02
		1063.62	74.90	-3.40E-03		1.19E-01
+	TL-208	583.14	* 30.22	1.65E+00	1.06E-01	3.11E-01
		860.37	* 4.48	2.19E+00		2.22E+00
		2614.66	* 35.85	1.29E+00		1.06E-01
+	BI-210M	262.00	45.00	-1.81E-02	1.19E-01	1.19E-01
		300.00	23.00	-5.79E-01		2.97E-01
+	PB-210	46.50	* 4.25	1.77E+00	2.76E+00	2.76E+00
+	PB-211	404.84	2.90	-4.71E-01	2.04E+00	2.04E+00
		831.96	2.90	-7.30E-01		3.13E+00
+	BI-212	727.17	11.80	9.30E-01	8.72E-01	8.72E-01
		1620.62	2.75	6.11E-01		2.44E+00
+	PB-212	238.63	* 44.60	1.69E+00	2.96E-01	2.96E-01
		300.09	* 3.41	2.11E+00		3.86E+00
+	BI-214	609.31	* 46.30	1.41E+00	2.01E-01	2.01E-01
		1120.29	* 15.10	1.81E+00		1.05E+00
		1764.49	* 15.80	1.78E+00		2.56E-01
		2204.22	* 4.98	1.25E+00		9.03E-01
+	PB-214	295.21	* 19.19	1.87E+00	2.92E-01	6.75E-01

Analysis Report for 1510064-12

CP2211S18-19

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	PB-214	351.92	*	37.19	1.70E+00	2.92E-01	2.92E-01
+	RN-219	401.80		6.50	2.83E-01	9.35E-01	9.35E-01
+	RA-223	323.87		3.88	-5.16E-01	1.46E+00	1.46E+00
+	RA-224	240.98	*	3.95	5.61E+00	3.37E+00	3.37E+00
+	RA-225	40.00		31.00	1.59E-01	1.45E+00	1.45E+00
+	RA-226	186.21	*	3.28	2.66E+00	2.75E+00	2.75E+00
+	TH-227	50.10		8.40	-2.82E-01	6.08E-01	9.18E-01
		236.00		11.50	-6.60E+00		6.08E-01
		256.20		6.30	-5.20E-01		8.23E-01
+	AC-228	338.32	*	11.40	1.55E+00	3.54E-01	7.85E-01
		911.07	*	27.70	1.64E+00		3.54E-01
		969.11	*	16.60	1.76E+00		1.61E+00
+	TH-230	48.44		16.90	-1.54E-01	5.25E-01	5.25E-01
		62.85		4.60	2.47E+00		1.82E+00
		67.67		0.37	1.08E+01		1.98E+01
+	PA-231	283.67		1.60	-1.47E+00	2.72E+00	3.29E+00
		302.67		2.30	9.49E-01		2.72E+00
+	TH-231	25.64		14.70	-1.89E+00	1.02E+00	4.08E+00
		84.21		6.40	-2.52E+00		1.02E+00
+	PA-233	311.98		38.60	1.71E-03	2.94E-01	2.94E-01
+	PA-234	131.20		20.40	1.40E-01	2.89E-01	2.89E-01
		733.99		8.80	-3.09E-01		7.89E-01
		946.00		12.00	2.09E-01		7.14E-01
+	PA-234M	1001.03		0.92	5.66E+00	1.02E+01	1.02E+01
+	TH-234	63.29	*	3.80	1.71E+00	2.72E+00	2.72E+00
+	U-235	143.76		10.50	2.58E-01	5.37E-01	5.37E-01
		163.35		4.70	9.55E-01		1.23E+00
		205.31		4.70	-6.79E-01		1.24E+00
+	NP-237	86.50		12.60	3.25E-01	5.77E-01	5.77E-01
+	NP-239	106.10		22.70	3.28E+02	9.72E+02	9.72E+02
		228.18		10.70	-3.53E+02		2.15E+03
		277.60		14.10	6.20E+02		1.75E+03
+	AM-241	59.54		35.90	-2.56E-02	2.11E-01	2.11E-01
+	AM-243	74.67		66.00	-1.95E-01	1.56E-01	1.56E-01
+	CM-243	209.75		3.29	2.45E+00	4.29E-01	1.93E+00
		228.14		10.60	-8.69E-02		5.30E-01
		277.60		14.00	1.52E-01		4.29E-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 1510064-12

CP2211S18-19

NUCLIDE MDA REPORT

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

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
BE-7	477.59	10.42	8.21E-01	8.21E-01	-1.19E-02	3.86E-01
NA-22	1274.54	99.94	9.13E-02	9.13E-02	-2.58E-03	4.18E-02
NA-24	1368.53	99.99	3.46E+12	1.82E+12	1.06E+12	1.56E+12
	2754.09	99.86	1.82E+12		3.94E+11	6.81E+11
AL-26	1808.65	99.76	4.69E-02	4.69E-02	-3.22E-02	1.86E-02
+ K-40	1460.81	* 10.67	1.07E+00	1.07E+00	2.28E+01	4.94E-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	7.74E-02	7.74E-02	4.23E-02	3.79E-02
	78.34	96.00	1.00E-01		3.12E-01	4.94E-02
SC-46	889.25	99.98	9.63E-02	9.63E-02	-7.50E-02	4.45E-02
	1120.51	99.99	1.78E-01		2.52E-01	8.48E-02
V-48	983.52	99.98	2.87E-01	2.87E-01	-1.26E-03	1.33E-01
	1312.10	97.50	3.12E-01		1.18E-01	1.42E-01
CR-51	320.08	9.83	1.11E+00	1.11E+00	-1.31E-01	5.28E-01
MN-54	834.83	99.97	9.68E-02	9.68E-02	8.64E-03	4.55E-02
CO-56	846.75	99.96	9.05E-02	9.05E-02	1.73E-02	4.17E-02
	1037.75	14.03	7.51E-01		-1.97E-01	3.46E-01
	1238.25	67.00	2.59E-01		1.50E-01	1.23E-01
	1771.40	15.51	3.14E-01		-2.48E-01	1.17E-01
	2598.48	16.90	2.87E-01		-3.09E-02	1.02E-01
CO-57	122.06	85.51	6.59E-02	6.59E-02	1.98E-02	3.20E-02
	136.48	10.60	5.65E-01		1.11E-02	2.74E-01
CO-58	810.76	99.40	9.81E-02	9.81E-02	-1.83E-02	4.55E-02
FE-59	1099.22	56.50	2.21E-01	2.21E-01	-3.14E-02	1.01E-01
	1291.56	43.20	3.28E-01		-7.90E-02	1.50E-01
CO-60	1173.22	100.00	1.00E-01	9.23E-02	5.50E-03	4.65E-02
	1332.49	100.00	9.23E-02		-1.27E-02	4.22E-02
ZN-65	1115.52	50.75	1.84E-01	1.84E-01	-7.33E-01	8.46E-02
GA-67	93.31	35.70	8.14E+01	8.14E+01	1.57E+02	3.99E+01
	208.95	2.24	1.14E+03		3.46E+02	5.51E+02
	300.22	16.00	1.74E+02		-3.39E+02	8.37E+01
SE-75	121.11	16.70	3.61E-01	1.07E-01	-6.20E-02	1.75E-01
	136.00	59.20	1.09E-01		-8.10E-02	5.31E-02
	264.65	59.80	1.07E-01		-7.70E-04	5.14E-02
	279.53	25.20	2.77E-01		1.91E-01	1.33E-01
	400.65	11.40	6.27E-01		1.34E-01	2.97E-01
RB-82	776.52	13.00	1.25E+00	1.25E+00	-5.06E-01	5.82E-01
RB-83	520.41	46.00	1.67E-01	1.67E-01	-7.41E-02	7.82E-02
	529.64	30.30	2.77E-01		-6.23E-02	1.31E-01
	552.65	16.40	5.23E-01		-2.92E-02	2.47E-01

Analysis Report for 1510064-12

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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	2.40E+01	2.40E+01	4.67E+01	1.16E+01
SR-85	513.99	99.27	1.41E-01	1.41E-01	2.75E-01	6.80E-02
Y-88	898.02	93.40	9.70E-02	7.25E-02	-4.66E-02	4.48E-02
	1836.01	99.38	7.25E-02		-2.73E-02	3.04E-02
NB-93M	16.57	9.43	7.97E+01	7.97E+01	-1.62E+01	3.71E+01
NB-94	702.63	100.00	7.66E-02	7.66E-02	-2.73E-02	3.59E-02
	871.10	100.00	8.08E-02		-6.26E-03	3.76E-02
NB-95	765.79	99.81	1.60E-01	1.60E-01	3.86E-02	7.56E-02
NB-95M	235.69	25.00	6.37E+01	6.37E+01	-6.90E+02	3.08E+01
ZR-95	724.18	43.70	2.98E-01	1.83E-01	-1.68E-01	1.41E-01
	756.72	55.30	1.83E-01		-5.08E-02	8.52E-02
MO-99	181.06	6.20	1.17E+03	7.19E+02	1.20E+01	5.66E+02
	739.58	12.80	7.19E+02		1.39E+02	3.35E+02
	778.00	4.50	2.08E+03		-8.92E+02	9.70E+02
RU-103	497.08	89.00	1.28E-01	1.28E-01	3.35E-02	6.08E-02
RU-106	621.84	9.80	7.97E-01	7.97E-01	1.41E-01	3.75E-01
AG-108M	433.93	89.90	7.61E-02	7.61E-02	2.05E-02	3.62E-02
	614.37	90.40	7.63E-02		3.07E-03	3.58E-02
	722.95	90.50	9.88E-02		-1.57E-01	4.67E-02
+ CD-109	88.03	*	3.72	4.14E+00	3.35E+00	2.05E+00
AG-110M	657.75	93.14	8.13E-02	8.13E-02	2.40E-02	3.80E-02
	677.61	10.53	7.45E-01		-1.35E-01	3.49E-01
	706.67	16.46	5.58E-01		2.68E-01	2.63E-01
	763.93	21.98	3.93E-01		-4.36E-01	1.84E-01
	884.67	71.63	1.20E-01		-1.78E-02	5.55E-02
	1384.27	23.94	3.18E-01		-2.70E-02	1.41E-01
CD-113M	263.70	0.02	2.37E+02	2.37E+02	-3.36E+00	1.14E+02
SN-113	255.12	1.93	3.25E+00	1.03E-01	-1.46E+00	1.56E+00
	391.69	64.90	1.03E-01		-6.74E-03	4.85E-02
TE123M	159.00	84.10	7.58E-02	7.58E-02	-3.73E-02	3.67E-02
SB-124	602.71	97.87	1.04E-01	1.04E-01	3.21E-02	4.90E-02
	645.85	7.26	1.44E+00		2.77E-01	6.77E-01
	722.78	11.10	1.11E+00		-1.77E+00	5.27E-01
	1691.02	49.00	1.95E-01		8.93E-02	8.43E-02
I-125	35.49	6.49	3.42E+00	3.42E+00	1.72E-01	1.66E+00
SB-125	176.33	6.89	8.43E-01	2.20E-01	9.66E-02	4.08E-01
	427.89	29.33	2.20E-01		-2.61E-02	1.05E-01
	463.38	10.35	8.13E-01		6.76E-01	3.90E-01
	600.56	17.80	4.30E-01		1.35E-01	2.03E-01
	635.90	11.32	6.45E-01		-5.65E-02	3.03E-01
SB-126	414.70	83.30	4.15E-01	3.77E-01	-2.35E-01	1.98E-01
	666.33	99.60	3.93E-01		3.20E-01	1.85E-01
	695.00	99.60	3.77E-01		1.30E-01	1.77E-01
	720.50	53.80	7.90E-01		8.05E-02	3.73E-01
+ SN-126	87.57	*	37.00	3.99E-01	3.23E-01	1.97E-01
SB-127	473.00	25.00	3.65E+01	3.15E+01	-1.72E+01	1.71E+01
	685.20	35.70	3.15E+01		9.05E-02	1.47E+01
	783.80	14.70	9.66E+01		5.74E+01	4.54E+01
I-129	29.78	57.00	5.35E-01	5.35E-01	3.81E-01	2.59E-01
	33.60	13.20	1.41E+00		-9.94E-01	6.85E-01
	39.58	7.52	1.63E+00		1.79E-01	7.92E-01
I-131	284.30	6.05	9.83E+00	7.95E-01	-4.44E+00	4.68E+00
	364.48	81.20	7.95E-01		2.80E-01	3.77E-01

Analysis Report for 1510064-12

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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	1.14E+01	7.95E-01	1.22E-01	5.34E+00
	722.89	1.80	5.68E+01		-9.02E+01	2.69E+01
TE-132	49.72	13.10	2.44E+02	2.60E+01	-7.50E+01	1.18E+02
	228.16	88.00	2.60E+01		-4.27E+00	1.25E+01
BA-133	81.00	33.00	1.92E-01	1.05E-01	-9.49E-01	9.36E-02
	302.84	17.80	3.54E-01		1.23E-01	1.70E-01
	356.01	60.00	1.05E-01		-7.30E-01	4.99E-02
I-133	529.87	86.30	5.11E+08	5.11E+08	-1.15E+08	2.41E+08
XE-133	81.00	38.00	6.95E+00	6.95E+00	-3.44E+01	3.40E+00
CS-134	563.23	8.38	8.18E-01	7.94E-02	-2.48E-01	3.84E-01
	569.32	15.43	5.07E-01		2.54E-01	2.40E-01
	604.70	97.60	7.94E-02		1.72E-02	3.75E-02
	795.84	85.40	1.04E-01		5.64E-02	4.88E-02
	801.93	8.73	8.40E-01		-5.52E-02	3.89E-01
CS-135	268.24	16.00	4.30E-01	4.30E-01	5.55E-01	2.08E-01
@ I-135	1131.51	22.50	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	1260.41	28.60	1.00E+26		1.00E+26	1.00E+20
@	1678.03	9.54	1.00E+26		1.00E+26	1.00E+20
CS-136	153.22	7.46	3.33E+00	3.05E-01	2.37E+00	1.61E+00
	163.89	4.61	5.59E+00		4.32E+00	2.71E+00
	176.55	13.56	1.86E+00		2.14E-01	9.02E-01
	273.65	12.66	1.96E+00		-4.94E-01	9.40E-01
	340.57	48.50	7.43E-01		1.31E+00	3.59E-01
	818.50	99.70	3.05E-01		-2.03E-02	1.41E-01
	1048.07	79.60	4.79E-01		-1.56E-01	2.21E-01
	1235.34	19.70	2.71E+00		2.60E-01	1.27E+00
CS-137	661.65	85.12	8.44E-02	8.44E-02	-5.09E-02	3.95E-02
LA-138	788.74	34.00	2.33E-01	9.36E-02	-7.81E-02	1.09E-01
	1435.80	66.00	9.36E-02		-1.86E-02	4.05E-02
CE-139	165.85	80.35	8.13E-02	8.13E-02	4.83E-02	3.94E-02
BA-140	162.64	6.70	3.91E+00	1.22E+00	-6.40E-01	1.89E+00
	304.84	4.50	5.68E+00		-3.69E+00	2.71E+00
	423.70	3.20	9.51E+00		1.11E+00	4.52E+00
	437.55	2.00	1.49E+01		-8.55E-01	7.07E+00
	537.32	25.00	1.22E+00		-2.81E-01	5.74E-01
LA-140	328.77	20.50	1.48E+00	3.59E-01	6.63E-01	7.11E-01
	487.03	45.50	6.61E-01		2.35E-02	3.12E-01
	815.85	23.50	1.40E+00		-2.27E-01	6.48E-01
	1596.49	95.49	3.59E-01		1.20E-01	1.58E-01
CE-141	145.44	48.40	2.13E-01	2.13E-01	1.40E-01	1.03E-01
CE-143	57.36	11.80	9.86E+05	3.51E+05	-1.36E+05	4.81E+05
	293.26	42.00	3.51E+05		1.08E+06	1.71E+05
	664.55	5.20	2.32E+06		8.23E+05	1.09E+06
CE-144	133.54	10.80	5.63E-01	5.63E-01	9.99E-02	2.74E-01
PM-144	476.78	42.00	1.46E-01	8.10E-02	-2.72E-02	6.87E-02
	618.01	98.60	8.10E-02		4.72E-02	3.82E-02
	696.49	99.49	8.31E-02		1.70E-02	3.90E-02
PM-145	36.85	21.70	6.61E-01	3.58E-01	-3.88E-01	3.21E-01
	37.36	39.70	3.58E-01		4.73E-02	1.74E-01
	42.30	15.10	6.71E-01		7.77E-02	3.25E-01
	72.40	2.31	3.73E+00		-1.21E+00	1.83E+00
PM-146	453.90	39.94	1.62E-01	1.62E-01	-1.14E-02	7.69E-02
	735.90	14.01	5.55E-01		3.73E-01	2.59E-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)
PM-146	747.13	13.10	5.84E-01	1.62E-01	7.49E-02	2.73E-01
ND-147	91.11	28.90	1.53E+00	1.53E+00	-2.66E+00	7.51E-01
	531.02	13.10	3.03E+00		-1.54E-01	1.43E+00
PM-149	285.90	3.10	1.22E+04	1.22E+04	-6.72E+01	5.81E+03
EU-152	121.78	20.50	2.56E-01	2.56E-01	7.71E-02	1.24E-01
	244.69	5.40	1.24E+00		-6.38E-01	5.99E-01
	344.27	19.13	2.82E-01		-9.71E-02	1.34E-01
	778.89	9.20	8.44E-01		-1.53E-01	3.94E-01
	964.01	10.40	1.08E+00		-1.74E+00	5.08E-01
	1085.78	7.22	1.20E+00		-1.31E-01	5.51E-01
	1112.02	9.60	9.17E-01		5.42E-01	4.23E-01
	1407.95	14.94	5.65E-01		1.63E-01	2.55E-01
GD-153	97.43	31.30	1.87E-01	1.87E-01	4.60E-02	9.10E-02
	103.18	22.20	2.62E-01		6.16E-02	1.27E-01
EU-154	123.07	40.50	1.31E-01	1.31E-01	-5.28E-02	6.35E-02
	723.30	19.70	4.57E-01		-7.25E-01	2.16E-01
	873.19	11.50	7.09E-01		-1.92E-02	3.30E-01
	996.32	10.30	8.58E-01		-1.72E-01	3.98E-01
	1004.76	17.90	4.55E-01		-1.49E-01	2.10E-01
	1274.45	35.50	2.53E-01		-7.16E-03	1.16E-01
EU-155	86.50	30.90	2.38E-01	2.38E-01	1.34E-01	1.17E-01
	105.30	20.70	2.62E-01		8.83E-02	1.27E-01
EU-156	811.77	10.40	2.56E+00	2.56E+00	-4.79E-01	1.19E+00
	1153.47	7.20	5.21E+00		2.07E+00	2.43E+00
	1230.71	8.90	4.63E+00		1.10E+00	2.16E+00
HO-166M	184.41	72.60	9.95E-02	9.95E-02	1.30E-01	4.85E-02
	280.45	29.60	1.87E-01		-3.07E-03	8.95E-02
	410.94	11.10	6.88E-01		5.32E-01	3.30E-01
	711.69	54.10	1.49E-01		-3.62E-02	7.00E-02
TM-171	66.72	0.14	5.36E+01	5.36E+01	8.37E+00	2.62E+01
HF-172	81.75	4.52	1.40E+00	4.94E-01	-2.29E+00	6.83E-01
	125.81	11.30	4.94E-01		-2.61E-01	2.40E-01
LU-172	181.53	20.60	5.23E+00	2.65E+00	-5.54E-01	2.53E+00
	810.06	16.63	8.54E+00		-5.15E-02	3.97E+00
	912.12	15.25	2.02E+01		5.84E+01	9.72E+00
	1093.66	62.50	2.65E+00		1.82E-01	1.23E+00
LU-173	100.72	5.24	1.07E+00	3.34E-01	1.43E-01	5.19E-01
	272.11	21.20	3.34E-01		3.73E-01	1.61E-01
HF-175	343.40	84.00	8.38E-02	8.38E-02	-2.71E-02	3.97E-02
LU-176	88.34	13.30	5.63E-01	5.80E-02	9.78E-01	2.76E-01
	201.83	86.00	6.82E-02		-2.84E-02	3.30E-02
	306.78	94.00	5.80E-02		-1.54E-03	2.77E-02
TA-182	67.75	41.20	2.11E-01	2.11E-01	1.15E-01	1.03E-01
	1121.30	34.90	4.75E-01		6.08E-01	2.26E-01
	1189.05	16.23	6.75E-01		3.57E-02	3.11E-01
	1221.41	26.98	4.46E-01		4.52E-02	2.07E-01
	1231.02	11.44	1.18E+00		2.79E-01	5.50E-01
IR-192	308.46	29.68	2.42E-01	1.86E-01	-8.43E-03	1.15E-01
	468.07	48.10	1.86E-01		3.29E-02	8.85E-02
HG-203	279.19	77.30	1.16E-01	1.16E-01	5.05E-02	5.57E-02
BI-207	569.67	97.72	7.95E-02	7.95E-02	4.45E-02	3.77E-02
	1063.62	74.90	1.19E-01		-3.40E-03	5.49E-02
+ TL-208	583.14	* 30.22	3.11E-01	1.06E-01	1.65E+00	1.49E-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)
TL-208	860.37	*	4.48	2.22E+00	1.06E-01	2.19E+00	1.05E+00
	2614.66	*	35.85	1.06E-01		1.29E+00	3.75E-02
BI-210M	262.00		45.00	1.19E-01	1.19E-01	-1.81E-02	5.71E-02
	300.00		23.00	2.97E-01		-5.79E-01	1.43E-01
+ PB-210	46.50	*	4.25	2.76E+00	2.76E+00	1.77E+00	1.35E+00
PB-211	404.84		2.90	2.04E+00	2.04E+00	-4.71E-01	9.65E-01
	831.96		2.90	3.13E+00		-7.30E-01	1.47E+00
BI-212	727.17		11.80	8.72E-01	8.72E-01	9.30E-01	4.15E-01
	1620.62		2.75	2.44E+00		6.11E-01	1.06E+00
+ PB-212	238.63	*	44.60	2.96E-01	2.96E-01	1.69E+00	1.46E-01
	300.09	*	3.41	3.86E+00		2.11E+00	1.89E+00
+ BI-214	609.31	*	46.30	2.01E-01	2.01E-01	1.41E+00	9.59E-02
	1120.29	*	15.10	1.05E+00		1.81E+00	5.00E-01
	1764.49	*	15.80	2.56E-01		1.78E+00	9.77E-02
	2204.22	*	4.98	9.03E-01		1.25E+00	3.45E-01
+ PB-214	295.21	*	19.19	6.75E-01	2.92E-01	1.87E+00	3.31E-01
	351.92	*	37.19	2.92E-01		1.70E+00	1.42E-01
RN-219	401.80		6.50	9.35E-01	9.35E-01	2.83E-01	4.44E-01
RA-223	323.87		3.88	1.46E+00	1.46E+00	-5.16E-01	6.93E-01
+ RA-224	240.98	*	3.95	3.37E+00	3.37E+00	5.61E+00	1.66E+00
RA-225	40.00		31.00	1.45E+00	1.45E+00	1.59E-01	7.03E-01
+ RA-226	186.21	*	3.28	2.75E+00	2.75E+00	2.66E+00	1.34E+00
TH-227	50.10		8.40	9.18E-01	6.08E-01	-2.82E-01	4.46E-01
	236.00		11.50	6.08E-01		-6.60E+00	2.95E-01
	256.20		6.30	8.23E-01		-5.20E-01	3.93E-01
+ AC-228	338.32	*	11.40	7.85E-01	3.54E-01	1.55E+00	3.80E-01
	911.07	*	27.70	3.54E-01		1.64E+00	1.67E-01
	969.11	*	16.60	1.61E+00		1.76E+00	7.85E-01
TH-230	48.44		16.90	5.25E-01	5.25E-01	-1.54E-01	2.55E-01
	62.85		4.60	1.82E+00		2.47E+00	8.90E-01
	67.67		0.37	1.98E+01		1.08E+01	9.67E+00
PA-231	283.67		1.60	3.29E+00	2.72E+00	-1.47E+00	1.57E+00
	302.67		2.30	2.72E+00		9.49E-01	1.31E+00
TH-231	25.64		14.70	4.08E+00	1.02E+00	-1.89E+00	1.97E+00
	84.21		6.40	1.02E+00		-2.52E+00	5.00E-01
PA-233	311.98		38.60	2.94E-01	2.94E-01	1.71E-03	1.40E-01
PA-234	131.20		20.40	2.89E-01	2.89E-01	1.40E-01	1.41E-01
	733.99		8.80	7.89E-01		-3.09E-01	3.66E-01
	946.00		12.00	7.14E-01		2.09E-01	3.32E-01
PA-234M	1001.03		0.92	1.02E+01	1.02E+01	5.66E+00	4.75E+00
+ TH-234	63.29	*	3.80	2.72E+00	2.72E+00	1.71E+00	1.34E+00
U-235	143.76		10.50	5.37E-01	5.37E-01	2.58E-01	2.61E-01
	163.35		4.70	1.23E+00		9.55E-01	5.99E-01
	205.31		4.70	1.24E+00		-6.79E-01	6.01E-01
NP-237	86.50		12.60	5.77E-01	5.77E-01	3.25E-01	2.83E-01
NP-239	106.10		22.70	9.72E+02	9.72E+02	3.28E+02	4.73E+02
	228.18		10.70	2.15E+03		-3.53E+02	1.04E+03
	277.60		14.10	1.75E+03		6.20E+02	8.39E+02
AM-241	59.54		35.90	2.11E-01	2.11E-01	-2.56E-02	1.03E-01
AM-243	74.67		66.00	1.56E-01	1.56E-01	-1.95E-01	7.70E-02
CM-243	209.75		3.29	1.93E+00	4.29E-01	2.45E+00	9.35E-01
	228.14		10.60	5.30E-01		-8.69E-02	2.55E-01
	277.60		14.00	4.29E-01		1.52E-01	2.06E-01

Analysis Report for 1510064-12

CP2211S18-19

-
- + = 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: CP2211S18-19

Elapsed Live time: 3600

Elapsed Real Time: 3601

Channel	1	9	17	25	33	41	49	57	65	73	81	89	97	105	113	121	129	137	145	153	161	169	177	185	193	201	209	217	225	233	241	249	257	265	273	281	289	297	305	313	321	329	337	345	353	361																																																																																																																																																																																																																																																																																																																																																							
1:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																																																																																																																																																																																																																																																																																																																																																			
9:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																																																																																																																																																																																																																																																																																																																																																		
17:	0	0	62	70	70	72	78	70	61	63	64	76	63	56	74	61	71	78	61	76	84	79	80	71	65	60	104	169	87	49:	69	66	78	94	101	105	97	97	57:	109	109	107	117	131	126	166	255	65:	118	127	135	139	140	134	116	131	73:	156	165	443	302	436	555	140	111	81:	110	119	98	115	152	114	158	239	89:	132	165	153	126	260	195	109	81	97:	78	84	92	99	83	75	78	82	105:	81	105	77	75	77	74	85	77	113:	68	70	76	101	72	72	61	72	121:	71	67	85	76	74	89	80	71	129:	90	109	90	80	90	80	74	86	137:	71	67	89	75	68	68	66	86	145:	86	73	66	64	61	70	69	55	153:	63	86	87	60	49	82	64	59	161:	61	79	52	79	66	78	54	54	169:	58	72	51	56	54	50	58	66	177:	61	61	67	68	53	67	65	59	185:	57	163	141	72	55	49	58	54	193:	59	50	59	63	48	61	72	69	201:	54	54	45	61	58	58	49	49	209:	75	84	53	56	37	57	60	59	217:	46	32	52	45	51	41	59	41	225:	44	45	45	42	33	55	48	50	233:	46	62	42	46	47	136	662	255	241:	98	165	127	44	36	37	43	35	249:	46	32	50	37	39	27	35	35	257:	32	31	42	40	26	35	24	42	265:	30	39	35	45	42	65	84	45	273:	21	45	26	35	37	51	31	40	281:	27	39	25	23	28	28	35	33	289:	33	22	28	23	31	39	155	221	297:	43	35	37	61	60	35	31	33	305:	29	26	24	37	22	30	27	28	313:	30	22	25	27	26	30	23	20	321:	29	24	26	27	32	28	23	50	329:	49	34	28	36	27	31	31	25	337:	30	59	142	50	31	25	24	27	345:	16	19	27	22	28	26	52	327	353:	255	44	31	20	25	27	14	21	361:	20	16	26	27	25	23	14	21

0700A

369: 19 30 21 23 25 23 17 26

Sample Title: CP2211S18-19

Channel	1	2	3	4	5	6	7	8
377:	12	22	29	23	23	19	21	26
385:	17	17	20	26	25	23	23	20
393:	21	15	13	24	28	20	20	14
401:	27	30	25	20	17	23	23	14
409:	29	32	23	31	21	31	13	17
417:	18	23	25	28	22	18	19	18
425:	13	15	21	12	17	14	23	22
433:	18	18	15	16	20	10	25	14
441:	15	15	17	15	16	19	16	14
449:	13	16	14	13	18	17	18	19
457:	9	16	18	22	16	22	50	31
465:	22	18	18	18	14	20	9	11
473:	10	9	6	11	12	13	13	17
481:	12	18	11	12	19	17	16	16
489:	6	13	14	13	7	23	22	12
497:	15	12	12	14	16	16	12	16
505:	13	16	14	23	17	40	90	64
513:	21	24	12	9	21	8	10	9
521:	15	10	16	10	14	12	13	12
529:	11	14	12	17	13	12	20	8
537:	10	8	14	13	14	16	14	12
545:	12	14	15	8	13	10	12	10
553:	14	17	18	9	17	14	16	9
561:	17	13	14	8	14	8	14	12
569:	18	18	25	13	12	13	12	13
577:	20	13	11	14	13	21	130	166
585:	49	13	14	8	10	12	19	15
593:	9	12	14	14	14	9	15	10
601:	16	17	18	11	11	8	14	17
609:	140	239	62	13	6	10	10	11
617:	14	13	13	15	17	8	13	10
625:	12	14	6	18	10	12	16	14
633:	15	12	10	8	10	5	19	16
641:	3	14	14	7	16	11	12	12
649:	14	11	15	14	12	8	7	9
657:	9	11	16	10	9	4	10	6
665:	19	18	17	14	10	12	6	7
673:	9	13	5	12	8	11	16	10
681:	11	10	14	7	8	13	7	6
689:	8	9	10	8	8	14	10	12
697:	15	13	10	8	15	9	11	14
705:	11	9	13	16	14	18	12	9
713:	10	10	11	16	10	13	10	17
721:	18	19	12	9	12	15	33	37
729:	19	11	5	8	12	9	8	8
737:	8	13	14	9	3	16	3	6
745:	11	11	10	9	5	16	4	13
753:	9	7	8	10	12	7	7	13
761:	9	12	8	14	11	10	9	20
769:	25	18	10	12	14	11	6	12
777:	7	5	13	9	11	9	12	12
785:	12	21	8	8	4	7	11	9
793:	12	11	17	21	4	9	7	11

801: 3 9 6 9 8 8 10 13

Sample Title: CP2211S18-19

Channel	1	2	3	4	5	6	7	8
809:	7	6	8	7	9	6	12	6
817:	7	6	5	10	7	6	5	6
825:	10	3	8	9	18	7	15	12
833:	10	11	10	16	17	7	10	13
841:	17	7	6	7	8	4	10	10
849:	4	4	7	3	4	8	7	7
857:	6	6	10	18	24	16	8	12
865:	6	7	11	8	10	9	7	10
873:	7	9	6	12	8	9	6	6
881:	11	9	6	9	13	8	3	8
889:	13	5	9	5	9	14	8	4
897:	9	10	6	9	3	9	7	7
905:	8	6	10	2	6	21	77	99
913:	29	11	7	4	2	5	9	4
921:	6	7	8	5	4	7	8	7
929:	6	3	11	5	6	14	12	12
937:	7	9	6	5	5	6	10	4
945:	7	7	6	18	7	9	7	4
953:	10	10	8	12	10	11	10	13
961:	5	10	12	18	27	19	9	16
969:	63	53	13	8	9	5	5	8
977:	7	9	13	4	7	9	9	8
985:	8	8	4	9	5	10	11	8
993:	8	4	11	7	7	16	4	7
1001:	11	13	7	7	5	6	3	6
1009:	9	7	3	8	8	14	12	3
1017:	6	11	7	11	9	4	7	11
1025:	10	5	2	3	6	10	11	11
1033:	6	13	4	6	9	9	4	8
1041:	6	6	11	6	6	10	6	7
1049:	9	9	3	7	11	5	9	9
1057:	7	6	7	4	5	5	8	8
1065:	7	12	7	9	10	8	8	9
1073:	6	10	10	5	9	7	8	8
1081:	7	7	6	3	8	4	8	9
1089:	9	9	6	9	7	2	13	2
1097:	11	3	7	6	5	6	8	14
1105:	4	1	2	3	6	12	7	7
1113:	6	5	4	5	13	8	4	26
1121:	57	16	4	10	9	5	7	7
1129:	7	6	8	7	8	6	9	3
1137:	6	7	9	5	9	6	3	6
1145:	5	8	7	8	6	6	6	5
1153:	15	3	16	12	8	5	4	9
1161:	9	10	6	7	4	13	4	8
1169:	8	9	9	7	8	9	6	8
1177:	7	8	8	7	10	5	9	5
1185:	9	4	7	5	12	5	8	6
1193:	5	7	5	8	12	6	5	12
1201:	11	11	7	5	8	2	14	8
1209:	7	9	3	8	8	13	8	6
1217:	7	4	10	8	8	9	7	9
1225:	7	9	9	12	6	10	9	8

1233: 10 14 9 7 11 19 25 17

Sample Title: CP2211S18-19

Channel	1	2	3	4	5	6	7	8	9
1241:	12	8	9	6	7	6	12	6	
1249:	6	4	3	4	9	7	5	7	
1257:	4	5	4	6	5	3	8	3	
1265:	9	9	8	7	8	8	6	7	
1273:	3	7	4	6	6	2	6	4	
1281:	6	11	4	4	1	6	6	3	
1289:	4	7	7	10	6	3	7	8	
1297:	4	6	7	6	5	5	5	9	
1305:	3	4	1	4	5	5	3	7	
1313:	6	7	4	7	2	5	4	4	
1321:	3	4	6	3	4	3	5	4	
1329:	2	4	1	10	8	9	4	10	
1337:	5	4	6	4	7	4	1	5	
1345:	4	6	7	1	2	2	4	5	
1353:	1	2	3	4	2	6	4	3	
1361:	2	3	1	2	1	1	4	7	
1369:	5	5	7	6	4	3	1	4	
1377:	7	9	12	4	3	2	2	4	
1385:	3	4	2	5	3	2	2	3	
1393:	4	1	4	1	4	0	2	7	
1401:	4	4	5	1	1	3	3	7	
1409:	7	5	3	3	3	4	8	3	
1417:	3	6	3	1	7	6	5	3	
1425:	2	1	1	4	2	1	2	2	
1433:	0	3	3	4	1	1	2	5	
1441:	1	0	0	5	2	2	5	1	
1449:	1	1	3	4	1	1	5	2	
1457:	1	4	13	110	315	291	61	5	
1465:	6	1	1	4	2	1	1	1	
1473:	3	2	5	1	1	1	4	1	
1481:	3	2	3	3	5	2	1	2	
1489:	2	1	4	3	1	0	3	6	
1497:	1	3	3	2	2	3	2	1	
1505:	3	2	2	2	2	7	1	4	
1513:	2	4	1	2	1	2	1	1	
1521:	2	2	1	4	2	1	1	2	
1529:	1	1	1	1	4	3	3	2	
1537:	1	1	2	4	1	2	3	4	
1545:	5	0	1	3	5	2	1	1	
1553:	0	4	1	3	1	1	0	1	
1561:	0	1	1	1	3	1	3	3	
1569:	1	2	0	1	0	1	2	3	
1577:	1	1	3	0	2	1	4	4	
1585:	1	2	4	1	8	7	2	3	
1593:	4	3	2	5	1	2	1	2	
1601:	0	0	1	1	2	1	0	2	
1609:	1	4	1	3	0	1	0	2	
1617:	1	2	3	0	5	3	0	2	
1625:	1	3	2	1	0	2	6	4	
1633:	0	2	1	0	6	3	2	3	
1641:	0	0	0	2	0	2	2	3	
1649:	2	4	6	0	2	1	2	0	
1657:	1	1	0	2	3	3	4	2	

1665: 1 1 3 2 1 2 3 3

Sample Title: CP2211S18-19

Channel	1	2	3	4	5	6	7	8
1673:	1	2	0	0	3	0	3	0
1681:	0	1	3	0	4	1	1	3
1689:	1	3	2	2	3	0	1	0
1697:	1	4	0	1	1	0	1	2
1705:	2	2	2	2	5	1	0	3
1713:	0	1	1	2	1	2	0	1
1721:	1	1	2	1	0	2	2	2
1729:	6	8	5	1	1	0	2	0
1737:	0	2	2	2	2	1	1	3
1745:	1	1	2	0	1	1	1	0
1753:	0	1	1	4	1	2	0	0
1761:	2	1	4	19	30	23	3	0
1769:	1	1	1	0	0	0	2	2
1777:	0	0	0	1	2	0	1	0
1785:	2	0	0	1	3	2	0	1
1793:	1	3	3	2	1	2	0	1
1801:	2	2	2	2	2	0	1	0
1809:	0	1	1	1	3	0	1	0
1817:	1	1	1	1	1	0	1	1
1825:	1	1	0	0	1	0	2	1
1833:	2	2	0	3	1	1	0	3
1841:	2	1	1	4	0	1	5	5
1849:	4	2	1	1	2	1	2	0
1857:	0	2	0	3	2	2	1	1
1865:	1	0	1	1	1	0	0	2
1873:	4	1	2	1	0	0	2	0
1881:	0	2	1	1	1	1	1	5
1889:	1	2	0	0	1	1	2	1
1897:	1	4	3	0	0	0	0	0
1905:	4	0	0	0	1	1	0	0
1913:	3	0	2	1	2	0	0	1
1921:	2	0	3	1	2	0	3	1
1929:	2	1	0	0	1	0	2	2
1937:	1	2	0	0	0	0	1	2
1945:	1	2	3	0	2	0	0	1
1953:	1	2	1	2	1	1	1	2
1961:	2	0	1	1	2	1	1	4
1969:	1	1	1	2	0	0	2	1
1977:	1	0	3	0	1	0	0	2
1985:	1	1	1	1	0	3	0	2
1993:	1	4	1	0	1	1	1	0
2001:	0	1	0	0	1	1	2	2
2009:	0	0	2	2	5	2	1	0
2017:	1	0	1	0	1	2	1	0
2025:	0	0	1	0	1	2	0	1
2033:	1	4	0	1	1	1	2	0
2041:	2	0	1	0	0	0	1	0
2049:	2	0	0	1	1	1	0	1
2057:	1	3	1	0	2	0	3	1
2065:	0	2	3	0	0	1	0	0
2073:	1	1	2	1	1	0	0	0
2081:	0	0	1	1	1	1	4	1
2089:	1	0	0	0	0	1	0	1

2097: 0 2 3 1 1 3 5 5

Sample Title: CP2211S18-19

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

2529: 0 0 0 0 0 0 0 0 1

Sample Title: CP2211S18-19

Channel	1	2	3	4	5	6	7	8	9
2537:	1	1	0	0	0	1	0	1	
2545:	0	0	0	0	0	0	1	0	
2553:	1	0	0	1	0	0	1	0	
2561:	1	0	0	1	1	0	0	0	
2569:	0	0	0	1	0	0	0	0	
2577:	0	1	1	0	0	1	0	0	
2585:	0	1	1	0	1	0	0	1	
2593:	0	1	0	0	0	0	0	0	
2601:	0	1	0	1	0	2	0	0	
2609:	1	0	0	3	8	39	39	19	
2617:	7	2	0	0	0	0	0	0	
2625:	1	1	0	0	0	0	0	0	
2633:	0	0	0	1	0	1	0	0	
2641:	0	0	1	0	0	1	1	0	
2649:	0	0	0	1	1	0	1	1	
2657:	0	0	0	0	0	0	0	0	
2665:	0	0	0	0	0	2	0	0	
2673:	1	0	1	1	0	1	0	1	
2681:	0	0	0	0	0	1	0	0	
2689:	0	0	0	0	0	1	0	1	
2697:	0	1	0	0	0	2	0	2	
2705:	0	0	0	0	0	0	0	0	
2713:	2	0	0	1	0	0	0	0	
2721:	0	0	0	1	0	0	0	2	
2729:	0	0	0	0	0	1	0	0	
2737:	0	0	1	1	1	1	0	0	
2745:	0	1	0	0	2	0	0	0	
2753:	0	0	1	0	0	0	0	0	
2761:	1	0	1	0	0	0	0	0	
2769:	0	0	1	0	1	0	0	1	
2777:	0	0	0	1	0	0	0	0	
2785:	0	1	0	0	0	0	0	1	
2793:	0	1	0	0	0	0	0	0	
2801:	0	0	0	0	1	0	1	0	
2809:	0	0	0	1	0	0	0	0	
2817:	0	0	0	1	0	1	1	0	
2825:	0	0	0	0	0	0	2	0	
2833:	1	2	0	1	0	0	1	0	
2841:	0	0	0	0	0	0	0	0	
2849:	0	0	1	0	0	3	0	1	
2857:	1	0	0	0	0	0	1	0	
2865:	0	0	0	1	1	0	0	0	
2873:	0	0	1	1	0	1	0	0	
2881:	0	1	0	0	0	0	0	0	
2889:	0	0	0	0	0	0	0	0	
2897:	0	0	0	0	0	1	0	1	
2905:	0	0	0	0	0	1	0	0	
2913:	0	0	0	0	0	0	2	0	
2921:	0	0	0	0	0	0	0	1	
2929:	0	1	0	1	0	0	0	0	
2937:	0	0	0	2	1	0	2	0	
2945:	1	0	1	0	0	0	0	0	
2953:	0	0	0	0	0	0	0	0	

2961: 0 0 1 0 0 0 1 0

Sample Title: CP2211S18-19

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

3393: 0 0 0 1 1 0 0 0

Sample Title: CP2211S18-19

Channel	-----	-----	-----	-----	-----	-----	-----	-----
3401:	0	0	0	0	0	0	1	0
3409:	0	0	0	0	0	0	0	0
3417:	0	0	0	0	0	0	0	0
3425:	0	0	0	0	0	1	0	0
3433:	0	0	0	0	0	1	0	0
3441:	0	1	0	1	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	1	0
3473:	0	0	0	0	0	1	0	0
3481:	0	1	0	0	0	0	0	0
3489:	0	1	1	0	0	0	0	0
3497:	0	1	0	0	2	0	0	1
3505:	0	0	0	1	2	0	0	0
3513:	0	0	0	0	0	1	0	0
3521:	0	0	0	0	0	0	0	0
3529:	0	0	0	0	1	0	0	0
3537:	0	0	0	0	0	0	0	1
3545:	0	0	0	0	0	0	0	0
3553:	0	0	0	0	0	0	0	0
3561:	1	0	0	0	0	1	0	0
3569:	0	0	0	0	0	0	0	0
3577:	1	0	0	0	0	0	1	1
3585:	0	0	1	0	0	1	1	0
3593:	2	0	0	0	0	0	0	0
3601:	0	0	0	0	0	0	1	0
3609:	0	0	1	0	0	0	1	1
3617:	0	0	0	0	0	0	0	0
3625:	0	0	0	1	0	0	0	0
3633:	1	0	0	2	0	0	0	0
3641:	0	0	1	1	1	0	1	0
3649:	0	0	0	0	0	0	1	0
3657:	0	0	0	1	0	0	0	0
3665:	2	0	0	0	1	0	0	0
3673:	0	0	1	0	0	0	0	0
3681:	0	2	0	0	0	0	1	1
3689:	0	0	0	0	0	0	0	0
3697:	0	0	1	0	0	0	0	0
3705:	0	0	0	0	0	0	1	0
3713:	0	1	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	1	0	0	0	0	1
3753:	0	0	1	0	0	1	0	0
3761:	0	1	0	0	0	0	0	0
3769:	0	0	0	0	0	0	0	0
3777:	0	0	0	0	1	0	0	0
3785:	0	0	0	0	0	0	0	0
3793:	0	1	0	0	0	0	0	0
3801:	0	0	0	0	0	0	0	0
3809:	0	1	0	0	0	0	0	0
3817:	0	1	0	0	0	0	2	1

3825: 1 0 0 0 0 0 0 0 0

Sample Title: CP2211S18-19

Channel	-----	-----	-----	-----	-----	-----	-----	-----
3833:	0	0	0	0	1	1	0	0
3841:	0	0	0	0	1	0	0	0
3849:	1	0	0	1	0	0	2	0
3857:	0	0	0	0	0	0	0	0
3865:	0	0	0	0	0	0	1	0
3873:	0	0	0	0	0	0	0	0
3881:	0	0	0	0	0	0	0	0
3889:	0	0	0	0	0	0	0	0
3897:	0	0	0	0	0	1	0	0
3905:	0	0	0	0	0	0	0	0
3913:	0	0	1	0	0	0	0	0
3921:	0	0	0	0	0	0	0	0
3929:	1	0	0	0	0	0	0	0
3937:	0	0	0	0	0	0	0	1
3945:	1	0	0	0	0	0	1	0
3953:	0	0	0	0	0	0	0	0
3961:	0	0	0	0	0	0	0	0
3969:	0	0	0	0	0	2	1	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	1	0
4001:	0	0	0	0	0	0	0	1
4009:	0	0	0	0	0	0	0	0
4017:	0	1	0	0	0	0	0	0
4025:	0	0	0	0	0	0	0	0
4033:	0	0	0	0	0	0	0	0
4041:	0	1	0	0	1	0	0	1
4049:	1	0	0	0	0	0	0	0
4057:	0	0	0	0	1	0	0	1
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	1
4089:	0	0	0	0	0	0	0	0

KJ
11/3/15Analysis Report for 1510064-13
CP2211S21-22

GAMMA SPECTRUM ANALYSIS

Sample Identification : 1510064-13
Sample Description : CP2211S21-22
Sample Type : SOIL

Sample Size : 5.405E+02 grams
Facility : Countroom

Sample Taken On : 10/6/2015 7:38:04AM
Acquisition Started : 11/3/2015 1:35:55PM

Procedure : GAS-1402 pCi
Operator : Administrator
Detector Name : GE2
Geometry : GAS-1402
Live Time : 3600.0 seconds
Real Time : 3601.3 seconds

Dead Time : 0.04 %

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

Energy Calibration Used Done On : 11/2/2014
Efficiency Calibration Used Done On : 10/25/2014
Efficiency Calibration Description :

Sample Number : 29035

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
11/3/15

Analysis Report for 1510064-13
CP2211S21-22

PEAK LOCATE REPORT

Peak Locate Performed on : 11/3/2015 2:36:09PM
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	46.28	46.38	0.0000	0.00
2	52.62	52.72	0.0000	0.00
3	63.39	63.48	0.0000	0.00
4	76.38	76.47	0.0000	0.00
5	88.34	88.42	0.0000	0.00
6	129.40	129.45	0.0000	0.00
7	186.28	186.30	0.0000	0.00
8	238.75	238.75	0.0000	0.00
9	241.94	241.93	0.0000	0.00
10	270.19	270.17	0.0000	0.00
11	295.21	295.18	0.0000	0.00
12	329.05	329.00	0.0000	0.00
13	338.57	338.52	0.0000	0.00
14	349.21	349.14	0.0000	0.00
15	352.04	351.98	0.0000	0.00
16	409.14	409.05	0.0000	0.00
17	478.15	478.02	0.0000	0.00
18	511.02	510.88	0.0000	0.00
19	519.15	519.00	0.0000	0.00
20	537.98	537.82	0.0000	0.00
21	573.40	573.23	0.0000	0.00
22	580.35	580.17	0.0000	0.00
23	583.35	583.17	0.0000	0.00
24	609.40	609.20	0.0000	0.00
25	623.33	623.13	0.0000	0.00
26	640.31	640.10	0.0000	0.00
27	672.74	672.52	0.0000	0.00
28	678.65	678.43	0.0000	0.00
29	727.26	727.01	0.0000	0.00
30	767.84	767.58	0.0000	0.00
31	772.08	771.82	0.0000	0.00
32	794.70	794.42	0.0000	0.00
33	860.93	860.62	0.0000	0.00
34	911.13	910.81	0.0000	0.00
35	951.28	950.94	0.0000	0.00
36	964.71	964.36	0.0000	0.00
37	969.12	968.77	0.0000	0.00
38	1051.99	1051.61	0.0000	0.00
39	1093.95	1093.55	0.0000	0.00
40	1120.27	1119.86	0.0000	0.00
41	1238.05	1237.60	0.0000	0.00
42	1296.10	1295.63	0.0000	0.00

Analysis Report for 1510064-13
CP2211S21-22

<i>Peak No.</i>	<i>Energy (keV)</i>	<i>Centroid Channel</i>	<i>Centroid Uncertainty</i>	<i>Peak Significance</i>
43	1379.51	1379.02	0.0000	0.00
44	1407.22	1406.71	0.0000	0.00
45	1416.45	1415.94	0.0000	0.00
46	1460.82	1460.29	0.0000	0.00
47	1529.22	1528.68	0.0000	0.00
48	1589.24	1588.68	0.0000	0.00
49	1630.61	1630.04	0.0000	0.00
50	1637.79	1637.22	0.0000	0.00
51	1729.34	1728.75	0.0000	0.00
52	1764.50	1763.90	0.0000	0.00
53	1778.61	1778.00	0.0000	0.00
54	1923.39	1922.75	0.0000	0.00
55	2090.73	2090.06	0.0000	0.00
56	2102.65	2101.97	0.0000	0.00
57	2118.01	2117.33	0.0000	0.00
58	2203.74	2203.04	0.0000	0.00
59	2294.32	2293.62	0.0000	0.00
60	2331.29	2330.57	0.0000	0.00
61	2377.27	2376.56	0.0000	0.00
62	2403.98	2403.26	0.0000	0.00
63	2412.99	2412.27	0.0000	0.00
64	2446.64	2445.92	0.0000	0.00
65	2511.55	2510.82	0.0000	0.00
66	2614.15	2613.41	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1510064-13
CP2211S21-22

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/3/2015 2:36:09PM

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	46.28	43 -	48	46.38	1.45E+02	87.76	1.41E+03	1.76
2	52.62	50 -	55	52.72	1.03E+02	76.70	1.07E+03	3.30
3	63.39	60 -	65	63.48	1.17E+02	84.02	1.32E+03	1.71
4	76.38	72 -	81	76.47	1.23E+03	146.93	2.34E+03	3.74
5	88.34	86 -	91	88.42	2.89E+02	89.60	1.37E+03	3.83
6	129.40	125 -	133	129.45	1.64E+02	90.62	1.16E+03	1.48
7	186.28	183 -	189	186.30	1.49E+02	74.11	8.86E+02	1.37
M 8	238.75	234 -	246	238.75	8.81E+02	73.15	4.34E+02	1.61
m 9	241.94	234 -	246	241.93	2.87E+02	79.48	4.56E+02	2.28
10	270.19	266 -	273	270.17	1.11E+02	59.87	5.21E+02	1.92
11	295.21	292 -	297	295.18	3.26E+02	56.13	3.69E+02	1.46
12	329.05	326 -	332	329.00	5.05E+01	49.90	4.09E+02	3.09
13	338.57	335 -	342	338.52	1.61E+02	57.38	4.29E+02	1.70
M 14	349.21	348 -	356	349.14	3.50E+01	24.36	1.43E+02	1.57
m 15	352.04	348 -	356	351.98	5.59E+02	57.84	2.31E+02	1.58
16	409.14	405 -	412	409.05	4.05E+01	42.43	2.67E+02	2.68
17	478.15	472 -	483	478.02	4.92E+01	53.25	3.30E+02	6.57
M 18	511.02	507 -	521	510.88	1.50E+02	35.96	1.69E+02	1.79
m 19	519.15	507 -	521	519.00	1.77E+01	26.02	1.08E+02	1.61
20	537.98	533 -	542	537.82	4.47E+01	39.18	1.91E+02	4.46
21	573.40	571 -	575	573.23	1.90E+01	22.80	1.00E+02	2.19
M 22	580.35	579 -	586	580.17	1.39E+01	13.42	5.28E+01	1.84
m 23	583.35	579 -	586	583.17	3.08E+02	43.91	1.31E+02	1.84
24	609.40	605 -	613	609.20	4.21E+02	56.61	2.34E+02	1.74
25	623.33	620 -	627	623.13	3.39E+01	30.13	1.22E+02	5.62
26	640.31	637 -	643	640.10	2.80E+01	28.37	1.26E+02	3.04
27	672.74	670 -	675	672.52	2.03E+01	24.56	1.03E+02	2.96
28	678.65	676 -	681	678.43	2.45E+01	23.37	8.90E+01	3.00
29	727.26	723 -	731	727.01	8.75E+01	32.90	1.13E+02	2.64
M 30	767.84	763 -	776	767.58	3.80E+01	30.55	1.28E+02	2.45
m 31	772.08	763 -	776	771.82	1.80E+01	25.69	1.05E+02	2.03
32	794.70	790 -	797	794.42	2.43E+01	30.98	1.43E+02	2.20
33	860.93	855 -	866	860.62	5.97E+01	37.74	1.43E+02	2.87
34	911.13	906 -	915	910.81	2.16E+02	44.17	1.56E+02	1.93
35	951.28	948 -	954	950.94	2.51E+01	21.18	6.39E+01	1.60
M 36	964.71	960 -	973	964.36	4.83E+01	26.11	7.85E+01	2.41
m 37	969.12	960 -	973	968.77	1.26E+02	29.58	7.00E+01	1.87
38	1051.99	1047 -	1054	1051.61	2.11E+01	24.25	8.38E+01	3.73
39	1093.95	1090 -	1096	1093.55	2.62E+01	21.65	6.55E+01	2.68
40	1120.27	1114 -	1124	1119.86	1.11E+02	39.99	1.53E+02	1.82

Analysis Report for 1510064-13

CP2211S21-22

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
41	1238.05	1233 - 1242		1237.60	3.82E+01	36.01	1.60E+02	1.56
42	1296.10	1288 - 1303		1295.63	3.70E+01	33.29	9.60E+01	10.71
43	1379.51	1372 - 1387		1379.02	3.59E+01	30.40	7.01E+01	6.67
M 44	1407.22	1399 - 1420		1406.71	3.66E+01	16.61	2.35E+01	2.76
m 45	1416.45	1399 - 1420		1415.94	9.77E+00	13.56	2.98E+01	2.77
46	1460.82	1455 - 1466		1460.29	7.75E+02	59.46	5.61E+01	2.55
47	1529.22	1526 - 1533		1528.68	1.16E+01	12.81	1.88E+01	4.43
48	1589.24	1583 - 1594		1588.68	2.99E+01	22.45	4.82E+01	2.17
49	1630.61	1627 - 1632		1630.04	1.10E+01	8.60	6.00E+00	2.36
50	1637.79	1634 - 1641		1637.22	1.10E+01	9.59	8.00E+00	3.71
51	1729.34	1724 - 1733		1728.75	1.77E+01	13.23	1.45E+01	3.40
52	1764.50	1758 - 1768		1763.90	8.47E+01	22.47	2.26E+01	2.02
53	1778.61	1774 - 1782		1778.00	7.50E+00	9.41	9.00E+00	1.91
54	1923.39	1920 - 1925		1922.75	8.00E+00	5.66	0.00E+00	2.75
55	2090.73	2087 - 2092		2090.06	4.50E+00	5.74	3.00E+00	2.72
56	2102.65	2099 - 2105		2101.97	8.17E+00	8.51	7.67E+00	3.42
57	2118.01	2113 - 2120		2117.33	1.50E+01	7.75	0.00E+00	1.24
58	2203.74	2198 - 2206		2203.04	1.45E+01	13.15	1.70E+01	2.97
59	2294.32	2289 - 2297		2293.62	1.15E+01	10.22	9.00E+00	6.12
60	2331.29	2327 - 2333		2330.57	9.32E+00	7.50	3.36E+00	2.37
61	2377.27	2373 - 2380		2376.56	9.00E+00	6.00	0.00E+00	2.75
62	2403.98	2398 - 2408		2403.26	1.90E+01	8.72	0.00E+00	8.16
63	2412.99	2409 - 2416		2412.27	1.10E+01	6.63	0.00E+00	2.00
64	2446.64	2440 - 2449		2445.92	1.18E+01	10.86	1.05E+01	3.29
65	2511.55	2506 - 2514		2510.82	6.00E+00	7.23	4.00E+00	1.34
66	2614.15	2609 - 2619		2613.41	1.15E+02	21.45	0.00E+00	2.84

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 : 11/3/2015 2:36:09PM

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	46.28	43 -	48	1.45E+02	87.76	1.41E+03	6.94E+01
2	52.62	50 -	55	1.03E+02	76.70	1.07E+03	6.08E+01

Analysis Report for 1510064-13

CP2211S21-22

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
3	63.39	60 -	65	1.17E+02	84.02	1.32E+03	6.67E+01
4	76.38	72 -	81	1.23E+03	146.93	2.34E+03	1.06E+02
5	88.34	86 -	91	2.89E+02	89.60	1.37E+03	6.81E+01
6	129.40	125 -	133	1.64E+02	90.62	1.16E+03	7.15E+01
7	186.28	183 -	189	1.49E+02	74.11	8.86E+02	5.75E+01
M 8	238.75	234 -	246	8.81E+02	73.15	4.34E+02	3.43E+01
m 9	241.94	234 -	246	2.87E+02	79.48	4.56E+02	3.51E+01
10	270.19	266 -	273	1.11E+02	59.87	5.21E+02	4.61E+01
11	295.21	292 -	297	3.26E+02	56.13	3.69E+02	3.53E+01
12	329.05	326 -	332	5.05E+01	49.90	4.09E+02	3.93E+01
13	338.57	335 -	342	1.61E+02	57.38	4.29E+02	4.23E+01
M 14	349.21	348 -	356	3.50E+01	24.36	1.43E+02	1.97E+01
m 15	352.04	348 -	356	5.59E+02	57.84	2.31E+02	2.50E+01
16	409.14	405 -	412	4.05E+01	42.43	2.67E+02	3.33E+01
17	478.15	472 -	483	4.92E+01	53.25	3.30E+02	4.22E+01
M 18	511.02	507 -	521	1.50E+02	35.96	1.69E+02	2.14E+01
m 19	519.15	507 -	521	1.77E+01	26.02	1.08E+02	1.71E+01
20	537.98	533 -	542	4.47E+01	39.18	1.91E+02	3.03E+01
21	573.40	571 -	575	1.90E+01	22.80	1.00E+02	1.73E+01
M 22	580.35	579 -	586	1.39E+01	13.42	5.28E+01	1.20E+01
m 23	583.35	579 -	586	3.08E+02	43.91	1.31E+02	1.88E+01
24	609.40	605 -	613	4.21E+02	56.61	2.34E+02	3.21E+01
25	623.33	620 -	627	3.39E+01	30.13	1.22E+02	2.28E+01
26	640.31	637 -	643	2.80E+01	28.37	1.26E+02	2.16E+01
27	672.74	670 -	675	2.03E+01	24.56	1.03E+02	1.88E+01
28	678.65	676 -	681	2.45E+01	23.37	8.90E+01	1.74E+01
29	727.26	723 -	731	8.75E+01	32.90	1.13E+02	2.22E+01
M 30	767.84	763 -	776	3.80E+01	30.55	1.28E+02	1.86E+01
m 31	772.08	763 -	776	1.80E+01	25.69	1.05E+02	1.68E+01
32	794.70	790 -	797	2.43E+01	30.98	1.43E+02	2.41E+01
33	860.93	855 -	866	5.97E+01	37.74	1.43E+02	2.83E+01
34	911.13	906 -	915	2.16E+02	44.17	1.56E+02	2.71E+01
35	951.28	948 -	954	2.51E+01	21.18	6.39E+01	1.53E+01
M 36	964.71	960 -	973	4.83E+01	26.11	7.85E+01	1.46E+01
m 37	969.12	960 -	973	1.26E+02	29.58	7.00E+01	1.38E+01
38	1051.99	1047 -	1054	2.11E+01	24.25	8.38E+01	1.84E+01
39	1093.95	1090 -	1096	2.62E+01	21.65	6.55E+01	1.57E+01
40	1120.27	1114 -	1124	1.11E+02	39.99	1.53E+02	2.79E+01
41	1238.05	1233 -	1242	3.82E+01	36.01	1.60E+02	2.78E+01
42	1296.10	1288 -	1303	3.70E+01	33.29	9.60E+01	1.07E+01
43	1379.51	1372 -	1387	3.59E+01	30.40	7.01E+01	2.30E+01
M 44	1407.22	1399 -	1420	3.66E+01	16.61	2.35E+01	7.98E+00
m 45	1416.45	1399 -	1420	9.77E+00	13.56	2.98E+01	8.97E+00
46	1460.82	1455 -	1466	7.75E+02	59.46	5.61E+01	1.72E+01
47	1529.22	1526 -	1533	1.16E+01	12.81	1.88E+01	8.91E+00
48	1589.24	1583 -	1594	2.99E+01	22.45	4.82E+01	1.61E+01
49	1630.61	1627 -	1632	1.10E+01	8.60	6.00E+00	4.50E+00
50	1637.79	1634 -	1641	1.10E+01	9.59	8.00E+00	5.70E+00
51	1729.34	1724 -	1733	1.77E+01	13.23	1.45E+01	8.38E+00
52	1764.50	1758 -	1768	8.47E+01	22.47	2.26E+01	1.06E+01
53	1778.61	1774 -	1782	7.50E+00	9.41	9.00E+00	6.29E+00

: 00716

Analysis Report for 1510064-13

CP2211S21-22

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
54	1923.39	1920 -	1925	8.00E+00	5.66	0.00E+00	0.00E+00
55	2090.73	2087 -	2092	4.50E+00	5.74	3.00E+00	3.18E+00
56	2102.65	2099 -	2105	8.17E+00	8.51	7.67E+00	5.19E+00
57	2118.01	2113 -	2120	1.50E+01	7.75	0.00E+00	0.00E+00
58	2203.74	2198 -	2206	1.45E+01	13.15	1.70E+01	8.82E+00
59	2294.32	2289 -	2297	1.15E+01	10.22	9.00E+00	6.29E+00
60	2331.29	2327 -	2333	9.32E+00	7.50	3.36E+00	3.58E+00
61	2377.27	2373 -	2380	9.00E+00	6.00	0.00E+00	0.00E+00
62	2403.98	2398 -	2408	1.90E+01	8.72	0.00E+00	0.00E+00
63	2412.99	2409 -	2416	1.10E+01	6.63	0.00E+00	0.00E+00
64	2446.64	2440 -	2449	1.18E+01	10.86	1.05E+01	6.92E+00
65	2511.55	2506 -	2514	6.00E+00	7.23	4.00E+00	4.37E+00
66	2614.15	2609 -	2619	1.15E+02	21.45	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 : 11/3/2015 2:36:09PM

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	46.28	43 -	48	46.38	1.45E+02	87.76	1.41E+03	PB-210
2	52.62	50 -	55	52.72	1.03E+02	76.70	1.07E+03	.....
3	63.39	60 -	65	63.48	1.17E+02	84.02	1.32E+03	TH-234 TH-230
4	76.38	72 -	81	76.47	1.23E+03	146.93	2.34E+03	.....
5	88.34	86 -	91	88.42	2.89E+02	89.60	1.37E+03	LU-176 CD-109 SN-126
6	129.40	125 -	133	129.45	1.64E+02	90.62	1.16E+03	.....
7	186.28	183 -	189	186.30	1.49E+02	74.11	8.86E+02	RA-226
M 8	238.75	234 -	246	238.75	8.81E+02	73.15	4.34E+02	PB-212
m 9	241.94	234 -	246	241.93	2.87E+02	79.48	4.56E+02	RA-224

Analysis Report for 1510064-13

CP2211S21-22

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
10	270.19	266 -	273	270.17	1.11E+02	59.87	5.21E+02	.....
11	295.21	292 -	297	295.18	3.26E+02	56.13	3.69E+02	PB-214
12	329.05	326 -	332	329.00	5.05E+01	49.90	4.09E+02	LA-140
13	338.57	335 -	342	338.52	1.61E+02	57.38	4.29E+02	AC-228
M 14	349.21	348 -	356	349.14	3.50E+01	24.36	1.43E+02	.....
m 15	352.04	348 -	356	351.98	5.59E+02	57.84	2.31E+02	PB-214
16	409.14	405 -	412	409.05	4.05E+01	42.43	2.67E+02	.....
17	478.15	472 -	483	478.02	4.92E+01	53.25	3.30E+02	BE-7
M 18	511.02	507 -	521	510.88	1.50E+02	35.96	1.69E+02	.....
m 19	519.15	507 -	521	519.00	1.77E+01	26.02	1.08E+02	.....
20	537.98	533 -	542	537.82	4.47E+01	39.18	1.91E+02	BA-140
21	573.40	571 -	575	573.23	1.90E+01	22.80	1.00E+02	.....
M 22	580.35	579 -	586	580.17	1.39E+01	13.42	5.28E+01	.....
m 23	583.35	579 -	586	583.17	3.08E+02	43.91	1.31E+02	TL-208
24	609.40	605 -	613	609.20	4.21E+02	56.61	2.34E+02	BI-214
25	623.33	620 -	627	623.13	3.39E+01	30.13	1.22E+02	.....
26	640.31	637 -	643	640.10	2.80E+01	28.37	1.26E+02	.....
27	672.74	670 -	675	672.52	2.03E+01	24.56	1.03E+02	.....
28	678.65	676 -	681	678.43	2.45E+01	23.37	8.90E+01	.....
29	727.26	723 -	731	727.01	8.75E+01	32.90	1.13E+02	BI-212
M 30	767.84	763 -	776	767.58	3.80E+01	30.55	1.28E+02	.....
m 31	772.08	763 -	776	771.82	1.80E+01	25.69	1.05E+02	.....
32	794.70	790 -	797	794.42	2.43E+01	30.98	1.43E+02	.....
33	860.93	855 -	866	860.62	5.97E+01	37.74	1.43E+02	TL-208
34	911.13	906 -	915	910.81	2.16E+02	44.17	1.56E+02	AC-228 LU-172
35	951.28	948 -	954	950.94	2.51E+01	21.18	6.39E+01	.....
M 36	964.71	960 -	973	964.36	4.83E+01	26.11	7.85E+01	EU-152
m 37	969.12	960 -	973	968.77	1.26E+02	29.58	7.00E+01	AC-228
38	1051.99	1047 -	1054	1051.61	2.11E+01	24.25	8.38E+01	.....
39	1093.95	1090 -	1096	1093.55	2.62E+01	21.65	6.55E+01	LU-172
40	1120.27	1114 -	1124	1119.86	1.11E+02	39.99	1.53E+02	BI-214 SC-46
41	1238.05	1233 -	1242	1237.60	3.82E+01	36.01	1.60E+02	CO-56
42	1296.10	1288 -	1303	1295.63	3.70E+01	33.29	9.60E+01	.....
43	1379.51	1372 -	1387	1379.02	3.59E+01	30.40	7.01E+01	.....
M 44	1407.22	1399 -	1420	1406.71	3.66E+01	16.61	2.35E+01	EU-152
m 45	1416.45	1399 -	1420	1415.94	9.77E+00	13.56	2.98E+01	.....
46	1460.82	1455 -	1466	1460.29	7.75E+02	59.46	5.61E+01	K-40
47	1529.22	1526 -	1533	1528.68	1.16E+01	12.81	1.88E+01	.....
48	1589.24	1583 -	1594	1588.68	2.99E+01	22.45	4.82E+01	.....
49	1630.61	1627 -	1632	1630.04	1.10E+01	8.60	6.00E+00	.....
50	1637.79	1634 -	1641	1637.22	1.10E+01	9.59	8.00E+00	.....
51	1729.34	1724 -	1733	1728.75	1.77E+01	13.23	1.45E+01	.....
52	1764.50	1758 -	1768	1763.90	8.47E+01	22.47	2.26E+01	BI-214
53	1778.61	1774 -	1782	1778.00	7.50E+00	9.41	9.00E+00	.....
54	1923.39	1920 -	1925	1922.75	8.00E+00	5.66	0.00E+00	.....
55	2090.73	2087 -	2092	2090.06	4.50E+00	5.74	3.00E+00	.....
56	2102.65	2099 -	2105	2101.97	8.17E+00	8.51	7.67E+00	.....
57	2118.01	2113 -	2120	2117.33	1.50E+01	7.75	0.00E+00	.....
58	2203.74	2198 -	2206	2203.04	1.45E+01	13.15	1.70E+01	BI-214
59	2294.32	2289 -	2297	2293.62	1.15E+01	10.22	9.00E+00	.....
60	2331.29	2327 -	2333	2330.57	9.32E+00	7.50	3.36E+00	.....
61	2377.27	2373 -	2380	2376.56	9.00E+00	6.00	0.00E+00	.....

: 00718

Analysis Report for 1510064-13
CP2211S21-22

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
62	2403.98	2398 -	2408	2403.26	1.90E+01	8.72	0.00E+00	.....
63	2412.99	2409 -	2416	2412.27	1.10E+01	6.63	0.00E+00	.....
64	2446.64	2440 -	2449	2445.92	1.18E+01	10.86	1.05E+01	.....
65	2511.55	2506 -	2514	2510.82	6.00E+00	7.23	4.00E+00	.....
66	2614.15	2609 -	2619	2613.41	1.15E+02	21.45	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 : 11/3/2015 2:36:09PM

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty	
1	46.28	1.45E+02	87.76	1.32E-02	1.68E-03	
2	52.62	1.03E+02	76.70	1.79E-02	1.68E-03	
3	63.39	1.17E+02	84.02	2.38E-02	2.06E-03	
4	76.38	1.23E+03	146.93	2.74E-02	3.35E-03	
5	88.34	2.89E+02	89.60	2.84E-02	4.49E-03	
6	129.40	1.64E+02	90.62	2.60E-02	2.77E-03	
7	186.28	1.49E+02	74.11	2.11E-02	1.65E-03	
M	8	238.75	8.81E+02	73.15	1.79E-02	1.60E-03
m	9	241.94	2.87E+02	79.48	1.77E-02	1.60E-03
10	270.19	1.11E+02	59.87	1.64E-02	1.57E-03	
11	295.21	3.26E+02	56.13	1.55E-02	1.48E-03	
12	329.05	5.05E+01	49.90	1.44E-02	1.32E-03	
13	338.57	1.61E+02	57.38	1.41E-02	1.27E-03	
M	14	349.21	3.50E+01	24.36	1.38E-02	1.22E-03
m	15	352.04	5.59E+02	57.84	1.37E-02	1.21E-03
16	409.14	4.05E+01	42.43	1.24E-02	1.00E-03	
17	478.15	4.92E+01	53.25	1.11E-02	9.32E-04	
M	18	511.02	1.50E+02	35.96	1.06E-02	8.98E-04
m	19	519.15	1.77E+01	26.02	1.04E-02	8.90E-04
20	537.98	4.47E+01	39.18	1.02E-02	8.71E-04	
21	573.40	1.90E+01	22.80	9.70E-03	8.35E-04	
M	22	580.35	1.39E+01	13.42	9.62E-03	8.28E-04
m	23	583.35	3.08E+02	43.91	9.58E-03	8.25E-04
24	609.40	4.21E+02	56.61	9.27E-03	7.98E-04	
25	623.33	3.39E+01	30.13	9.11E-03	7.84E-04	

Analysis Report for 1510064-13

CP2211S21-22

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	26	640.31	2.80E+01	28.37	8.93E-03	7.67E-04
	27	672.74	2.03E+01	24.56	8.59E-03	7.38E-04
	28	678.65	2.45E+01	23.37	8.54E-03	7.34E-04
	29	727.26	8.75E+01	32.90	8.09E-03	7.03E-04
M	30	767.84	3.80E+01	30.55	7.75E-03	6.77E-04
m	31	772.08	1.80E+01	25.69	7.71E-03	6.74E-04
	32	794.70	2.43E+01	30.98	7.54E-03	6.60E-04
	33	860.93	5.97E+01	37.74	7.06E-03	6.17E-04
	34	911.13	2.16E+02	44.17	6.75E-03	5.87E-04
	35	951.28	2.51E+01	21.18	6.51E-03	5.66E-04
M	36	964.71	4.83E+01	26.11	6.44E-03	5.59E-04
m	37	969.12	1.26E+02	29.58	6.41E-03	5.57E-04
	38	1051.99	2.11E+01	24.25	6.00E-03	5.15E-04
	39	1093.95	2.62E+01	21.65	5.81E-03	4.93E-04
	40	1120.27	1.11E+02	39.99	5.70E-03	4.80E-04
	41	1238.05	3.82E+01	36.01	5.27E-03	4.83E-04
	42	1296.10	3.70E+01	33.29	5.09E-03	5.10E-04
	43	1379.51	3.59E+01	30.40	4.86E-03	5.07E-04
M	44	1407.22	3.66E+01	16.61	4.79E-03	4.95E-04
m	45	1416.45	9.77E+00	13.56	4.77E-03	4.92E-04
	46	1460.82	7.75E+02	59.46	4.67E-03	4.73E-04
	47	1529.22	1.16E+01	12.81	4.53E-03	4.45E-04
	48	1589.24	2.99E+01	22.45	4.43E-03	4.20E-04
	49	1630.61	1.10E+01	8.60	4.36E-03	4.03E-04
	50	1637.79	1.10E+01	9.59	4.35E-03	4.00E-04
	51	1729.34	1.77E+01	13.23	4.23E-03	3.62E-04
	52	1764.50	8.47E+01	22.47	4.19E-03	3.48E-04
	53	1778.61	7.50E+00	9.41	4.17E-03	3.42E-04
	54	1923.39	8.00E+00	5.66	4.04E-03	3.18E-04
	55	2090.73	4.50E+00	5.74	3.95E-03	3.18E-04
	56	2102.65	8.17E+00	8.51	3.95E-03	3.18E-04
	57	2118.01	1.50E+01	7.75	3.95E-03	3.18E-04
	58	2203.74	1.45E+01	13.15	3.93E-03	3.18E-04
	59	2294.32	1.15E+01	10.22	3.93E-03	3.18E-04
	60	2331.29	9.32E+00	7.50	3.93E-03	3.18E-04
	61	2377.27	9.00E+00	6.00	3.94E-03	3.18E-04
	62	2403.98	1.90E+01	8.72	3.95E-03	3.18E-04
	63	2412.99	1.10E+01	6.63	3.95E-03	3.18E-04
	64	2446.64	1.18E+01	10.86	3.96E-03	3.18E-04
	65	2511.55	6.00E+00	7.23	3.99E-03	3.18E-04
	66	2614.15	1.15E+02	21.45	4.05E-03	3.18E-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 1510064-13

CP2211S21-22

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 11/3/2015 2:36:09PM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000028942.CNF

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
1	46.28	1.45E+02	87.76	6.46E+01	1.16E+01	8.01E+01	8.85E+01
2	52.62	1.03E+02	76.70			1.03E+02	7.67E+01
3	63.39	1.17E+02	84.02	4.34E+01	1.15E+01	7.36E+01	8.48E+01
4	76.38	1.23E+03	146.93			1.23E+03	1.47E+02
5	88.34	2.89E+02	89.60	1.46E+00	7.88E+00	2.88E+02	8.99E+01
6	129.40	1.64E+02	90.62			1.64E+02	9.06E+01
7	186.28	1.49E+02	74.11	4.72E+01	7.97E+00	1.02E+02	7.45E+01
M 8	238.75	8.81E+02	73.15	2.36E+01	1.35E+01	8.57E+02	7.44E+01
m 9	241.94	2.87E+02	79.48	6.38E+00	3.91E+00	2.81E+02	7.96E+01
10	270.19	1.11E+02	59.87			1.11E+02	5.99E+01
11	295.21	3.26E+02	56.13	8.57E+00	6.10E+00	3.18E+02	5.65E+01
12	329.05	5.05E+01	49.90	0.00E+00	0.00E+00	5.05E+01	4.99E+01
13	338.57	1.61E+02	57.38			1.61E+02	5.74E+01
M 14	349.21	3.50E+01	24.36			3.50E+01	2.44E+01
m 15	352.04	5.59E+02	57.84	1.40E+01	5.55E+00	5.45E+02	5.81E+01
16	409.14	4.05E+01	42.43			4.05E+01	4.24E+01
17	478.15	4.92E+01	53.25			4.92E+01	5.33E+01
M 18	511.02	1.50E+02	35.96	8.41E+01	5.50E+00	6.60E+01	3.64E+01
m 19	519.15	1.77E+01	26.02			1.77E+01	2.60E+01
20	537.98	4.47E+01	39.18			4.47E+01	3.92E+01
21	573.40	1.90E+01	22.80			1.90E+01	2.28E+01
M 22	580.35	1.39E+01	13.42			1.39E+01	1.34E+01
m 23	583.35	3.08E+02	43.91	7.32E+00	4.08E+00	3.00E+02	4.41E+01
24	609.40	4.21E+02	56.61	1.30E+01	3.89E+00	4.08E+02	5.67E+01
25	623.33	3.39E+01	30.13			3.39E+01	3.01E+01
26	640.31	2.80E+01	28.37			2.80E+01	2.84E+01
27	672.74	2.03E+01	24.56			2.03E+01	2.46E+01
28	678.65	2.45E+01	23.37			2.45E+01	2.34E+01
29	727.26	8.75E+01	32.90			8.75E+01	3.29E+01
M 30	767.84	3.80E+01	30.55			3.80E+01	3.05E+01
m 31	772.08	1.80E+01	25.69			1.80E+01	2.57E+01
32	794.70	2.43E+01	30.98			2.43E+01	3.10E+01
33	860.93	5.97E+01	37.74			5.97E+01	3.77E+01
34	911.13	2.16E+02	44.17	5.60E+00	3.32E+00	2.10E+02	4.43E+01
35	951.28	2.51E+01	21.18			2.51E+01	2.12E+01
M 36	964.71	4.83E+01	26.11			4.83E+01	2.61E+01
m 37	969.12	1.26E+02	29.58			1.26E+02	2.96E+01
38	1051.99	2.11E+01	24.25			2.11E+01	2.42E+01
39	1093.95	2.62E+01	21.65			2.62E+01	2.17E+01
40	1120.27	1.11E+02	39.99	3.93E+00	2.96E+00	1.07E+02	4.01E+01
41	1238.05	3.82E+01	36.01			3.82E+01	3.60E+01
42	1296.10	3.70E+01	33.29			3.70E+01	3.33E+01
43	1379.51	3.59E+01	30.40			3.59E+01	3.04E+01
M 44	1407.22	3.66E+01	16.61			3.66E+01	1.66E+01

: 00721

Analysis Report for 1510064-13

CP2211S21-22

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
m 45	1416.45	9.77E+00	13.56			9.77E+00	1.36E+01
46	1460.82	7.75E+02	59.46	1.12E+01	2.55E+00	7.64E+02	5.95E+01
47	1529.22	1.16E+01	12.81			1.16E+01	1.28E+01
48	1589.24	2.99E+01	22.45			2.99E+01	2.24E+01
49	1630.61	1.10E+01	8.60			1.10E+01	8.60E+00
50	1637.79	1.10E+01	9.59			1.10E+01	9.59E+00
51	1729.34	1.77E+01	13.23			1.77E+01	1.32E+01
52	1764.50	8.47E+01	22.47	4.23E+00	2.21E+00	8.05E+01	2.26E+01
53	1778.61	7.50E+00	9.41			7.50E+00	9.41E+00
54	1923.39	8.00E+00	5.66			8.00E+00	5.66E+00
55	2090.73	4.50E+00	5.74			4.50E+00	5.74E+00
56	2102.65	8.17E+00	8.51			8.17E+00	8.51E+00
57	2118.01	1.50E+01	7.75			1.50E+01	7.75E+00
58	2203.74	1.45E+01	13.15	5.94E-01	1.16E+00	1.39E+01	1.32E+01
59	2294.32	1.15E+01	10.22			1.15E+01	1.02E+01
60	2331.29	9.32E+00	7.50			9.32E+00	7.50E+00
61	2377.27	9.00E+00	6.00			9.00E+00	6.00E+00
62	2403.98	1.90E+01	8.72			1.90E+01	8.72E+00
63	2412.99	1.10E+01	6.63			1.10E+01	6.63E+00
64	2446.64	1.18E+01	10.86			1.18E+01	1.09E+01
65	2511.55	6.00E+00	7.23			6.00E+00	7.23E+00
66	2614.15	1.15E+02	21.45	7.38E+00	1.57E+00	1.08E+02	2.15E+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 : 11/3/2015 2:36:09PM
 Ref. Peak Energy : 0.00 Reference Date :
 Peak Ratio : 0.00 Uncertainty : 0.00
 Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000028942.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	46.28	1.45E+02	87.76	6.46E+01	1.16E+01	8.01E+01	8.85E+01
2	52.62	1.03E+02	76.70			1.03E+02	7.67E+01
3	63.39	1.17E+02	84.02	4.34E+01	1.15E+01	7.36E+01	8.48E+01
4	76.38	1.23E+03	146.93			1.23E+03	1.47E+02
5	88.34	2.89E+02	89.60	1.46E+00	7.88E+00	2.88E+02	8.99E+01
6	129.40	1.64E+02	90.62			1.64E+02	9.06E+01

Analysis Report for 1510064-13

CP2211S21-22

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	7	186.28	1.49E+02	74.11	4.72E+01	7.97E+00	1.02E+02	7.45E+01
M	8	238.75	8.81E+02	73.15	2.36E+01	1.35E+01	8.57E+02	7.44E+01
m	9	241.94	2.87E+02	79.48	6.38E+00	3.91E+00	2.81E+02	7.96E+01
	10	270.19	1.11E+02	59.87			1.11E+02	5.99E+01
	11	295.21	3.26E+02	56.13	8.57E+00	6.10E+00	3.18E+02	5.65E+01
	12	329.05	5.05E+01	49.90	0.00E+00	0.00E+00	5.05E+01	4.99E+01
	13	338.57	1.61E+02	57.38			1.61E+02	5.74E+01
M	14	349.21	3.50E+01	24.36			3.50E+01	2.44E+01
m	15	352.04	5.59E+02	57.84	1.40E+01	5.55E+00	5.45E+02	5.81E+01
	16	409.14	4.05E+01	42.43			4.05E+01	4.24E+01
	17	478.15	4.92E+01	53.25			4.92E+01	5.33E+01
M	18	511.02	1.50E+02	35.96	8.41E+01	5.50E+00	6.60E+01	3.64E+01
m	19	519.15	1.77E+01	26.02			1.77E+01	2.60E+01
	20	537.98	4.47E+01	39.18			4.47E+01	3.92E+01
	21	573.40	1.90E+01	22.80			1.90E+01	2.28E+01
M	22	580.35	1.39E+01	13.42			1.39E+01	1.34E+01
m	23	583.35	3.08E+02	43.91	7.32E+00	4.08E+00	3.00E+02	4.41E+01
	24	609.40	4.21E+02	56.61	1.30E+01	3.89E+00	4.08E+02	5.67E+01
	25	623.33	3.39E+01	30.13			3.39E+01	3.01E+01
	26	640.31	2.80E+01	28.37			2.80E+01	2.84E+01
	27	672.74	2.03E+01	24.56			2.03E+01	2.46E+01
	28	678.65	2.45E+01	23.37			2.45E+01	2.34E+01
	29	727.26	8.75E+01	32.90			8.75E+01	3.29E+01
M	30	767.84	3.80E+01	30.55			3.80E+01	3.05E+01
m	31	772.08	1.80E+01	25.69			1.80E+01	2.57E+01
	32	794.70	2.43E+01	30.98			2.43E+01	3.10E+01
	33	860.93	5.97E+01	37.74			5.97E+01	3.77E+01
	34	911.13	2.16E+02	44.17	5.60E+00	3.32E+00	2.10E+02	4.43E+01
	35	951.28	2.51E+01	21.18			2.51E+01	2.12E+01
M	36	964.71	4.83E+01	26.11			4.83E+01	2.61E+01
m	37	969.12	1.26E+02	29.58			1.26E+02	2.96E+01
	38	1051.99	2.11E+01	24.25			2.11E+01	2.42E+01
	39	1093.95	2.62E+01	21.65			2.62E+01	2.17E+01
	40	1120.27	1.11E+02	39.99	3.93E+00	2.96E+00	1.07E+02	4.01E+01
	41	1238.05	3.82E+01	36.01			3.82E+01	3.60E+01
	42	1296.10	3.70E+01	33.29			3.70E+01	3.33E+01
	43	1379.51	3.59E+01	30.40			3.59E+01	3.04E+01
M	44	1407.22	3.66E+01	16.61			3.66E+01	1.66E+01
m	45	1416.45	9.77E+00	13.56			9.77E+00	1.36E+01
	46	1460.82	7.75E+02	59.46	1.12E+01	2.55E+00	7.64E+02	5.95E+01
	47	1529.22	1.16E+01	12.81			1.16E+01	1.28E+01
	48	1589.24	2.99E+01	22.45			2.99E+01	2.24E+01
	49	1630.61	1.10E+01	8.60			1.10E+01	8.60E+00
	50	1637.79	1.10E+01	9.59			1.10E+01	9.59E+00
	51	1729.34	1.77E+01	13.23			1.77E+01	1.32E+01
	52	1764.50	8.47E+01	22.47	4.23E+00	2.21E+00	8.05E+01	2.26E+01
	53	1778.61	7.50E+00	9.41			7.50E+00	9.41E+00
	54	1923.39	8.00E+00	5.66			8.00E+00	5.66E+00
	55	2090.73	4.50E+00	5.74			4.50E+00	5.74E+00
	56	2102.65	8.17E+00	8.51			8.17E+00	8.51E+00
	57	2118.01	1.50E+01	7.75			1.50E+01	7.75E+00
	58	2203.74	1.45E+01	13.15	5.94E-01	1.16E+00	1.39E+01	1.32E+01
	59	2294.32	1.15E+01	10.22			1.15E+01	1.02E+01
	60	2331.29	9.32E+00	7.50			9.32E+00	7.50E+00

Analysis Report for 1510064-13

CP2211S21-22

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
61	2377.27	9.00E+00	6.00			9.00E+00	6.00E+00
62	2403.98	1.90E+01	8.72			1.90E+01	8.72E+00
63	2412.99	1.10E+01	6.63			1.10E+01	6.63E+00
64	2446.64	1.18E+01	10.86			1.18E+01	1.09E+01
65	2511.55	6.00E+00	7.23			6.00E+00	7.23E+00
66	2614.15	1.15E+02	21.45	7.38E+00	1.57E+00	1.08E+02	2.15E+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 : \WOR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
BE-7	0.950	477.59 *	10.42	8.54E-01	9.27E-01
K-40	1.000	1460.81 *	10.67	2.13E+01	2.75E+00
CD-109	0.985	88.03 *	3.72	3.94E+00	1.40E+00
SN-126	0.909	87.57 *	37.00	3.80E-01	1.33E-01
TL-208	0.973	583.14 *	30.22	1.44E+00	2.45E-01
		860.37 *	4.48	2.62E+00	1.67E+00
		2614.66 *	35.85	1.03E+00	2.21E-01
PB-210	0.992	46.50 *	4.25	1.99E+00	2.21E+00
BI-212	0.765	727.17 *	11.80	1.27E+00	4.92E-01
		1620.62 *	2.75		
PB-212	0.892	238.63 *	44.60	1.49E+00	1.86E-01
		300.09 *	3.41		
BI-214	0.997	609.31 *	46.30	1.32E+00	2.16E-01
		1120.29 *	15.10	1.73E+00	6.63E-01
		1764.49 *	15.80	1.69E+00	4.95E-01
		2204.22 *	4.98	9.87E-01	9.40E-01
PB-214	0.998	295.21 *	19.19	1.49E+00	3.00E-01
		351.92 *	37.19	1.48E+00	2.05E-01
RA-224	0.864	240.98 *	3.95	5.58E+00	1.66E+00
RA-226	0.999	186.21 *	3.28	2.05E+00	4.04E+00
AC-228	0.998	338.32 *	11.40	1.39E+00	5.12E-01
		911.07 *	27.70	1.56E+00	3.56E-01
		969.11 *	16.60	1.64E+00	4.11E-01
TH-234	0.998	63.29 *	3.80	1.13E+00	1.31E+00

: 00724

Analysis Report for 1510064-13

CP2211S21-22

* = 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 : 11/3/2015 2:36:09PM

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	52.62	2.87330E-02	37.08			
4	76.38	3.41901E-01	5.97			
6	129.40	4.55962E-02	27.60			
10	270.19	3.09162E-02	26.89			
12	329.05	1.40147E-02	49.45	Tol.	LA-140	
M	14	349.21	9.73216E-03	34.76		
16	409.14	1.12572E-02	52.34			
M	18	511.02	1.83323E-02	27.56		
m	19	519.15	4.90814E-03	73.64		
20	537.98	1.24097E-02	43.85	Sum		
21	573.40	5.26570E-03	60.13			
M	22	580.35	3.85123E-03	48.38	Sum	
25	623.33	9.40643E-03	44.49			
26	640.31	7.77778E-03	50.67			
27	672.74	5.63079E-03	60.57	Sum		
28	678.65	6.80757E-03	47.67			
M	30	767.84	1.05677E-02	40.14		
m	31	772.08	4.99641E-03	71.41		
32	794.70	6.74479E-03	63.80	Sum		
35	951.28	6.95906E-03	42.27			
M	36	964.71	1.34157E-02	27.03	Tol.	EU-152
38	1051.99	5.86640E-03	57.41			
39	1093.95	7.29049E-03	41.25	Tol.	LU-172	
41	1238.05	1.06109E-02	47.14	Tol.	CO-56	
42	1296.10	1.02778E-02	44.98			
43	1379.51	9.98435E-03	42.28			
M	44	1407.22	1.01530E-02	22.73	Tol.	EU-152
m	45	1416.45	2.71291E-03	69.45	Sum	
47	1529.22	3.22751E-03	55.11			
48	1589.24	8.30761E-03	37.53			
49	1630.61	3.05556E-03	39.10			
50	1637.79	3.05556E-03	43.60	Sum		
51	1729.34	4.92778E-03	37.29	Sum		
53	1778.61	2.08333E-03	62.72			

Analysis Report for 1510064-13
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Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
54	1923.39	2.22222E-03	35.36		
55	2090.73	1.25000E-03	63.83		
56	2102.65	2.26852E-03	52.13	S-Esc	
57	2118.01	4.16667E-03	25.82		
59	2294.32	3.19444E-03	44.45		
60	2331.29	2.58838E-03	40.24		
61	2377.27	2.50000E-03	33.33		
62	2403.98	5.27778E-03	22.94		
63	2412.99	3.05556E-03	30.15		
64	2446.64	3.26797E-03	46.17	Sum	
65	2511.55	1.66667E-03	60.24		

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

NUCLIDE IDENTIFICATION REPORT

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

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
BE-7	0.95	477.59 *	10.42	8.54E-01	9.27E-01
K-40	1.00	1460.81 *	10.67	2.13E+01	2.75E+00
CD-109	0.98	88.03 *	3.72	3.94E+00	1.40E+00
SN-126	0.90	87.57 *	37.00	3.80E-01	1.33E-01
TL-208	0.97	583.14 *	30.22	1.44E+00	2.45E-01
		860.37 *	4.48	2.62E+00	1.67E+00
		2614.66 *	35.85	1.03E+00	2.21E-01
PB-210	0.99	46.50 *	4.25	1.99E+00	2.21E+00
BI-212	0.76	727.17 *	11.80	1.27E+00	4.92E-01
		1620.62 *	2.75		
PB-212	0.89	238.63 *	44.60	1.49E+00	1.86E-01
		300.09 *	3.41		
BI-214	0.99	609.31 *	46.30	1.32E+00	2.16E-01
		1120.29 *	15.10	1.73E+00	6.63E-01
		1764.49 *	15.80	1.69E+00	4.95E-01
		2204.22 *	4.98	9.87E-01	9.40E-01
PB-214	0.99	295.21 *	19.19	1.49E+00	3.00E-01

Analysis Report for 1510064-13
 CP2211S21-22

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/grams)	Activity Uncertainty
PB-214	0.99	351.92 *	37.19	1.48E+00	2.05E-01
RA-224	0.86	240.98 *	3.95	5.58E+00	1.66E+00
RA-226	0.99	186.21 *	3.28	2.05E+00	4.04E+00
AC-228	0.99	338.32 *	11.40	1.39E+00	5.12E-01
		911.07 *	27.70	1.56E+00	3.56E-01
		969.11 *	16.60	1.64E+00	4.11E-01
TH-234	0.99	63.29 *	3.80	1.13E+00	1.31E+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
BE-7	0.950	8.54E-01	9.27E-01	
K-40	1.000	2.13E+01	2.75E+00	
? CD-109	0.985	3.94E+00	1.40E+00	
? SN-126	0.909	3.80E-01	1.33E-01	
TL-208	0.973	1.23E+00	1.63E-01	
PB-210	0.992	1.99E+00	2.21E+00	
BI-212	0.765	1.27E+00	4.92E-01	
PB-212	0.892	1.49E+00	1.86E-01	
BI-214	0.997	1.39E+00	1.86E-01	
PB-214	0.998	1.48E+00	1.69E-01	
RA-224	0.864	5.58E+00	1.66E+00	
RA-226	0.999	2.05E+00	4.04E+00	
AC-228	0.998	1.55E+00	2.38E-01	
TH-234	0.998	1.13E+00	1.31E+00	

Analysis Report for 1510064-13

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- ? = 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 1510064-13
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UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/3/2015 2:36:09PM
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	52.62	2.87330E-02	37.08		
4	76.38	3.41901E-01	5.97		
6	129.40	4.55962E-02	27.60		
10	270.19	3.09162E-02	26.89		
12	329.05	1.40147E-02	49.45	Tol.	LA-140
M 14	349.21	9.73216E-03	34.76		
16	409.14	1.12572E-02	52.34		
M 18	511.02	1.83323E-02	27.56		
m 19	519.15	4.90814E-03	73.64		
20	537.98	1.24097E-02	43.85	Sum	
21	573.40	5.26570E-03	60.13		
M 22	580.35	3.85123E-03	48.38	Sum	
25	623.33	9.40643E-03	44.49		
26	640.31	7.77778E-03	50.67		
27	672.74	5.63079E-03	60.57	Sum	
28	678.65	6.80757E-03	47.67		
M 30	767.84	1.05677E-02	40.14		
m 31	772.08	4.99641E-03	71.41		
32	794.70	6.74479E-03	63.80	Sum	
35	951.28	6.95906E-03	42.27		
M 36	964.71	1.34157E-02	27.03	Tol.	EU-152
38	1051.99	5.86640E-03	57.41		
39	1093.95	7.29049E-03	41.25	Tol.	LU-172
41	1238.05	1.06109E-02	47.14	Tol.	CO-56
42	1296.10	1.02778E-02	44.98		
43	1379.51	9.98435E-03	42.28		
M 44	1407.22	1.01530E-02	22.73	Tol.	EU-152
m 45	1416.45	2.71291E-03	69.45	Sum	
47	1529.22	3.22751E-03	55.11		
48	1589.24	8.30761E-03	37.53		
49	1630.61	3.05556E-03	39.10		
50	1637.79	3.05556E-03	43.60	Sum	
51	1729.34	4.92778E-03	37.29	Sum	
53	1778.61	2.08333E-03	62.72		
54	1923.39	2.22222E-03	35.36		

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Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
55	2090.73	1.25000E-03	63.83		
56	2102.65	2.26852E-03	52.13	S-Esc	
57	2118.01	4.16667E-03	25.82		
59	2294.32	3.19444E-03	44.45		
60	2331.29	2.58838E-03	40.24		
61	2377.27	2.50000E-03	33.33		
62	2403.98	5.27778E-03	22.94		
63	2412.99	3.05556E-03	30.15		
64	2446.64	3.26797E-03	46.17	Sum	
65	2511.55	1.66667E-03	60.24		

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	8.54E-01	1.51E+00
+	NA-22	1274.54		99.94	-2.59E-02	9.33E-02
+	NA-24	1368.53		99.99	-6.25E+11	1.66E+12
		2754.09		99.86	1.72E+11	1.66E+12
+	AL-26	1808.65		99.76	2.24E-02	5.34E-02
+	K-40	1460.81	*	10.67	2.13E+01	1.09E+00
+	@ AR-41	1293.64		99.16	1.00E+26	1.00E+26
+	TI-44	67.88		94.40	1.91E-03	5.41E-02
		78.34		96.00	2.88E-01	7.86E-02
+	SC-46	889.25		99.98	1.83E-03	9.33E-02
		1120.51		99.99	3.18E-01	1.87E-01
+	V-48	983.52		99.98	3.95E-02	2.61E-01
		1312.10		97.50	1.34E-01	2.76E-01
+	CR-51	320.08		9.83	1.73E-01	1.08E+00
+	MN-54	834.83		99.97	-4.46E-02	7.73E-02
+	CO-56	846.75		99.96	-3.59E-03	9.72E-02
		1037.75		14.03	1.82E-01	7.92E-01
		1238.25		67.00	2.11E-01	2.41E-01

Analysis Report for 1510064-13
CP2211S21-22

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	CO-56	1771.40	15.51	5.50E-02	9.72E-02	4.99E-01
		2598.48	16.90	2.17E-02		2.42E-01
+	CO-57	122.06	85.51	3.14E-02	6.04E-02	6.04E-02
		136.48	10.60	-7.45E-03		4.77E-01
+	CO-58	810.76	99.40	-3.22E-02	9.70E-02	9.70E-02
+	FE-59	1099.22	56.50	2.47E-02	2.41E-01	2.41E-01
		1291.56	43.20	-2.17E-02		3.14E-01
+	CO-60	1173.22	100.00	7.49E-02	8.28E-02	9.66E-02
		1332.49	100.00	2.81E-02		8.28E-02
+	ZN-65	1115.52	50.75	-2.35E-02	1.98E-01	1.98E-01
+	GA-67	93.31	35.70	1.01E+02	6.93E+01	6.93E+01
		208.95	2.24	4.19E+02		1.15E+03
		300.22	16.00	2.36E+02		1.67E+02
+	SE-75	121.11	16.70	-3.94E-02	9.15E-02	3.33E-01
		136.00	59.20	-3.23E-02		9.15E-02
		264.65	59.80	3.75E-02		1.12E-01
		279.53	25.20	-6.90E-02		2.71E-01
		400.65	11.40	1.14E-01		6.04E-01
+	RB-82	776.52	13.00	-1.89E-01	1.18E+00	1.18E+00
+	RB-83	520.41	46.00	-1.01E-02	1.45E-01	1.45E-01
		529.64	30.30	6.96E-02		2.34E-01
		552.65	16.40	2.13E-02		4.32E-01
+	KR-85	513.99	0.43	-1.75E+01	1.50E+01	1.50E+01
+	SR-85	513.99	99.27	-1.03E-01	8.82E-02	8.82E-02
+	Y-88	898.02	93.40	-9.93E-03	6.81E-02	9.41E-02
		1836.01	99.38	1.95E-02		6.81E-02
+	NB-93M	16.57	9.43	-4.18E+03	5.56E+03	5.56E+03
+	NB-94	702.63	100.00	2.07E-02	7.39E-02	8.19E-02
		871.10	100.00	-7.54E-03		7.39E-02
+	NB-95	765.79	99.81	1.23E-01	1.66E-01	1.66E-01
+	NB-95M	235.69	25.00	-5.29E+02	7.63E+01	7.63E+01
+	ZR-95	724.18	43.70	-2.59E-02	1.62E-01	2.61E-01
		756.72	55.30	-2.63E-02		1.62E-01
+	MO-99	181.06	6.20	2.79E+02	6.88E+02	1.09E+03
		739.58	12.80	4.20E+01		6.88E+02
		778.00	4.50	3.32E+02		2.02E+03
+	RU-103	497.08	89.00	-3.32E-03	9.99E-02	9.99E-02
+	RU-106	621.84	9.80	3.42E-01	7.71E-01	7.71E-01
+	AG-108M	433.93	89.90	-1.25E-02	6.04E-02	6.04E-02
		614.37	90.40	-6.19E-03		8.14E-02
		722.95	90.50	-5.67E-04		8.33E-02
+	CD-109	88.03	* 3.72	3.94E+00	1.91E+00	1.91E+00
+	AG-110M	657.75	93.14	-2.89E-02	8.86E-02	8.86E-02
		677.61	10.53	1.65E-01		7.49E-01
		706.67	16.46	1.63E-01		5.25E-01
		763.93	21.98	2.20E-02		4.18E-01
		884.67	71.63	-7.80E-02		9.87E-02
		1384.27	23.94	-3.71E-02		2.97E-01

Analysis Report for 1510064-13

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	CD-113M	263.70	0.02	3.93E+01	2.46E+02	2.46E+02
+	SN-113	255.12	1.93	1.17E+00	1.06E-01	3.31E+00
		391.69	64.90	-5.81E-02		1.06E-01
+	TE123M	159.00	84.10	2.17E-03	7.37E-02	7.37E-02
+	SB-124	602.71	97.87	-5.73E-02	9.10E-02	9.10E-02
		645.85	7.26	2.37E-01		1.32E+00
		722.78	11.10	-6.40E-03		9.40E-01
		1691.02	49.00	-5.44E-02		1.85E-01
+	I-125	35.49	6.49	3.88E+00	5.79E+00	5.79E+00
+	SB-125	176.33	6.89	1.07E-02	2.03E-01	7.58E-01
		427.89	29.33	-1.96E-03		2.03E-01
		463.38	10.35	5.09E-01		6.58E-01
		600.56	17.80	-5.73E-02		3.83E-01
		635.90	11.32	2.79E-02		6.25E-01
+	SB-126	414.70	83.30	-9.16E-02	3.03E-01	3.03E-01
		666.33	99.60	1.27E-02		3.92E-01
		695.00	99.60	9.69E-02		3.83E-01
		720.50	53.80	1.64E-01		6.62E-01
+	SN-126	87.57	* 37.00	3.80E-01	1.84E-01	1.84E-01
+	SB-127	473.00	25.00	-1.84E+00	3.06E+01	3.58E+01
		685.20	35.70	-2.13E+00		3.06E+01
		783.80	14.70	0.00E+00		8.76E+01
+	I-129	29.78	57.00	-2.05E-01	1.25E+00	1.25E+00
		33.60	13.20	-1.27E+00		2.60E+00
		39.58	7.52	8.69E-01		2.30E+00
+	I-131	284.30	6.05	-4.12E+00	7.59E-01	1.04E+01
		364.48	81.20	-2.07E-01		7.59E-01
		636.97	7.26	-5.99E-01		1.11E+01
		722.89	1.80	-3.26E-01		4.79E+01
+	TE-132	49.72	13.10	1.55E+02	2.64E+01	2.45E+02
		228.16	88.00	4.56E+00		2.64E+01
+	BA-133	81.00	33.00	-3.44E-02	8.99E-02	1.33E-01
		302.84	17.80	-4.50E-02		3.31E-01
		356.01	60.00	-2.83E-02		8.99E-02
+	I-133	529.87	86.30	1.59E+08	4.38E+08	4.38E+08
+	XE-133	81.00	38.00	-1.25E+00	4.81E+00	4.81E+00
+	CS-134	563.23	8.38	8.74E-02	8.92E-02	7.53E-01
		569.32	15.43	3.46E-02		3.67E-01
		604.70	97.60	-1.16E-02		8.92E-02
		795.84	85.40	1.05E-02		1.04E-01
		801.93	8.73	-1.03E-01		9.09E-01
+	CS-135	268.24	16.00	-1.22E-01	3.92E-01	3.92E-01
+	@ 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	-5.76E-01	3.10E-01	3.08E+00
		163.89	4.61	4.16E+00		5.14E+00
		176.55	13.56	6.68E-01		1.71E+00
		273.65	12.66	-8.24E-01		1.86E+00

Analysis Report for 1510064-13
CP2211S21-22

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	CS-136	340.57	48.50	-4.48E-01	3.10E-01	5.95E-01
		818.50	99.70	-2.03E-01		3.10E-01
		1048.07	79.60	3.00E-02		4.53E-01
		1235.34	19.70	1.92E+00		2.90E+00
+	CS-137	661.65	85.12	2.84E-02	9.71E-02	9.71E-02
+	LA-138	788.74	34.00	1.27E-01	8.95E-02	2.33E-01
		1435.80	66.00	-4.53E-02		8.95E-02
+	CE-139	165.85	80.35	1.89E-02	7.64E-02	7.64E-02
+	BA-140	162.64	6.70	7.19E-01	1.13E+00	3.63E+00
		304.84	4.50	-1.01E+00		5.60E+00
		423.70	3.20	-7.20E-01		8.57E+00
		437.55	2.00	-6.54E-01		1.31E+01
		537.32	25.00	4.20E-01		1.13E+00
+	LA-140	328.77	20.50	1.64E+00	4.03E-01	1.50E+00
		487.03	45.50	1.36E-01		5.86E-01
		815.85	23.50	4.10E-01		1.45E+00
		1596.49	95.49	-3.21E-02		4.03E-01
+	CE-141	145.44	48.40	-1.08E-01	1.98E-01	1.98E-01
+	CE-143	57.36	11.80	-2.62E+05	3.06E+05	6.69E+05
		293.26	42.00	1.23E+05		3.06E+05
		664.55	5.20	1.99E+06		2.56E+06
+	CE-144	133.54	10.80	-4.86E-02	4.61E-01	4.61E-01
+	PM-144	476.78	42.00	-6.81E-02	7.79E-02	1.44E-01
		618.01	98.60	-1.62E-03		7.79E-02
		696.49	99.49	-1.78E-02		8.25E-02
+	PM-145	36.85	21.70	-1.09E-01	5.34E-01	1.04E+00
		37.36	39.70	-5.61E-02		5.34E-01
		42.30	15.10	3.38E-01		8.93E-01
		72.40	2.31	-1.61E+00		2.23E+00
+	PM-146	453.90	39.94	8.80E-02	1.59E-01	1.59E-01
		735.90	14.01	2.20E-01		5.24E-01
		747.13	13.10	2.14E-01		5.78E-01
+	ND-147	91.11	28.90	1.48E-01	1.31E+00	1.31E+00
		531.02	13.10	7.59E-01		2.58E+00
+	PM-149	285.90	3.10	-2.79E+03	1.22E+04	1.22E+04
+	EU-152	121.78	20.50	1.22E-01	2.35E-01	2.35E-01
		244.69	5.40	-2.55E+00		1.02E+00
		344.27	19.13	4.60E-02		2.74E-01
		778.89	9.20	4.90E-01		8.41E-01
		964.01	10.40	-2.57E+00		1.02E+00
		1085.78	7.22	4.92E-01		1.13E+00
		1112.02	9.60	-1.76E-01		9.34E-01
		1407.95	14.94	3.76E-01		6.40E-01
+	GD-153	97.43	31.30	-4.70E-02	1.67E-01	1.67E-01
		103.18	22.20	-1.11E-01		2.33E-01
+	EU-154	123.07	40.50	3.22E-02	1.18E-01	1.18E-01
		723.30	19.70	-2.62E-03		3.85E-01
		873.19	11.50	-4.67E-02		6.64E-01
		996.32	10.30	-2.46E-02		8.58E-01

Analysis Report for 1510064-13
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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	EU-154	1004.76	17.90	9.95E-03	1.18E-01	4.50E-01
		1274.45	35.50	-7.19E-02		2.59E-01
+	EU-155	86.50	30.90	-2.13E-01	2.15E-01	2.15E-01
		105.30	20.70	-5.11E-02		2.30E-01
+	EU-156	811.77	10.40	-8.85E-01	2.52E+00	2.52E+00
		1153.47	7.20	2.39E-01		4.80E+00
		1230.71	8.90	1.08E+00		4.31E+00
+	HO-166M	184.41	72.60	2.70E-02	9.06E-02	9.06E-02
		280.45	29.60	-5.00E-02		1.96E-01
		410.94	11.10	1.20E-01		5.02E-01
		711.69	54.10	1.56E-03		1.39E-01
+	TM-171	66.72	0.14	-5.26E+00	3.72E+01	3.72E+01
+	HF-172	81.75	4.52	-6.34E-01	4.45E-01	9.74E-01
		125.81	11.30	-7.88E-01		4.45E-01
+	LU-172	181.53	20.60	1.13E+00	2.74E+00	4.94E+00
		810.06	16.63	-2.72E+00		8.19E+00
		912.12	15.25	4.97E+01		1.97E+01
		1093.66	62.50	6.46E-01		2.74E+00
+	LU-173	100.72	5.24	5.91E-01	3.20E-01	9.63E-01
		272.11	21.20	2.42E-01		3.20E-01
+	HF-175	343.40	84.00	3.64E-02	8.51E-02	8.51E-02
+	LU-176	88.34	13.30	7.19E-01	5.94E-02	5.09E-01
		201.83	86.00	-3.05E-02		6.46E-02
		306.78	94.00	9.82E-03		5.94E-02
+	TA-182	67.75	41.20	5.20E-03	1.47E-01	1.47E-01
		1121.30	34.90	8.34E-01		4.99E-01
		1189.05	16.23	1.78E-01		7.18E-01
		1221.41	26.98	9.45E-02		4.37E-01
		1231.02	11.44	1.98E-01		1.10E+00
+	IR-192	308.46	29.68	-5.28E-02	1.55E-01	2.42E-01
		468.07	48.10	1.75E-02		1.55E-01
+	HG-203	279.19	77.30	5.26E-02	1.17E-01	1.17E-01
+	BI-207	569.67	97.72	5.34E-03	5.66E-02	5.66E-02
		1063.62	74.90	6.31E-03		1.10E-01
+	TL-208	583.14	* 30.22	1.44E+00	1.15E-01	2.64E-01
		860.37	* 4.48	2.62E+00		2.60E+00
		2614.66	* 35.85	1.03E+00		1.15E-01
+	BI-210M	262.00	45.00	1.83E-02	1.28E-01	1.28E-01
		300.00	23.00	4.03E-01		2.86E-01
+	PB-210	46.50	* 4.25	1.99E+00	3.61E+00	3.61E+00
+	PB-211	404.84	2.90	3.41E-01	1.94E+00	1.94E+00
		831.96	2.90	1.60E-01		2.52E+00
+	BI-212	727.17	* 11.80	1.27E+00	6.87E-01	6.87E-01
		1620.62	2.75	9.44E-01		2.83E+00
+	PB-212	238.63	* 44.60	1.49E+00	2.62E-01	2.62E-01
		300.09	3.41	2.72E+00		1.93E+00
+	BI-214	609.31	* 46.30	1.32E+00	2.21E-01	2.21E-01
		1120.29	* 15.10	1.73E+00		9.54E-01

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	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	BI-214	1764.49	*	15.80	1.69E+00	2.21E-01	5.31E-01
		2204.22	*	4.98	9.87E-01		1.46E+00
+	PB-214	295.21	*	19.19	1.49E+00	2.28E-01	3.50E-01
		351.92	*	37.19	1.48E+00		2.28E-01
+	RN-219	401.80		6.50	1.57E-01	8.98E-01	8.98E-01
+	RA-223	323.87		3.88	6.27E-01	1.49E+00	1.49E+00
+	RA-224	240.98	*	3.95	5.58E+00	2.95E+00	2.95E+00
+	RA-225	40.00		31.00	7.60E-01	2.02E+00	2.02E+00
+	RA-226	186.21	*	3.28	2.05E+00	2.43E+00	2.43E+00
+	TH-227	50.10		8.40	5.82E-01	7.29E-01	9.17E-01
		236.00		11.50	-5.06E+00		7.29E-01
		256.20		6.30	-6.48E-01		8.39E-01
+	AC-228	338.32	*	11.40	1.39E+00	4.29E-01	7.56E-01
		911.07	*	27.70	1.56E+00		4.29E-01
		969.11	*	16.60	1.64E+00		7.99E-01
+	TH-230	48.44		16.90	-6.29E-01	4.80E-01	4.80E-01
		62.85		4.60	1.79E+00		1.31E+00
		67.67		0.37	4.88E-01		1.38E+01
+	PA-231	283.67		1.60	-1.36E+00	2.55E+00	3.43E+00
		302.67		2.30	-3.46E-01		2.55E+00
+	TH-231	25.64		14.70	1.53E+01	7.61E-01	1.62E+01
		84.21		6.40	1.00E+00		7.61E-01
+	PA-233	311.98		38.60	3.19E-03	2.81E-01	2.81E-01
+	PA-234	131.20		20.40	2.96E-01	2.66E-01	2.66E-01
		733.99		8.80	-1.97E-03		7.68E-01
		946.00		12.00	-6.77E-03		6.12E-01
+	PA-234M	1001.03		0.92	-9.05E-01	9.14E+00	9.14E+00
+	TH-234	63.29	*	3.80	1.13E+00	2.14E+00	2.14E+00
+	U-235	143.76		10.50	-1.26E-01	4.92E-01	4.92E-01
		163.35		4.70	2.22E-01		1.12E+00
		205.31		4.70	-2.10E-01		1.23E+00
+	NP-237	86.50		12.60	-5.18E-01	5.20E-01	5.20E-01
+	NP-239	106.10		22.70	-1.52E+02	8.55E+02	8.55E+02
		228.18		10.70	3.76E+02		2.18E+03
		277.60		14.10	7.34E+01		1.69E+03
+	AM-241	59.54		35.90	2.14E-02	1.52E-01	1.52E-01
+	AM-243	74.67		66.00	-2.13E-01	1.09E-01	1.09E-01
+	CM-243	209.75		3.29	2.50E+00	4.16E-01	1.95E+00
		228.14		10.60	9.27E-02		5.36E-01
		277.60		14.00	1.80E-02		4.16E-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
 ? = CAUTION: MDA value is inconsistent with Currie MDA at 95% confidence level

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NUCLIDE MDA REPORT

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

	Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
+	BE-7	477.59	*	10.42	1.51E+00	8.54E-01	7.34E-01
	NA-22	1274.54		99.94	9.33E-02	-2.59E-02	4.29E-02
	NA-24	1368.53		99.99	2.82E+12	-6.25E+11	1.25E+12
		2754.09		99.86	1.66E+12	1.72E+11	6.42E+11
	AL-26	1808.65		99.76	5.34E-02	2.24E-02	2.21E-02
+	K-40	1460.81	*	10.67	1.09E+00	2.13E+01	5.06E-01
@	AR-41	1293.64		99.16	1.00E+26	1.00E+26	1.00E+20
	TI-44	67.88		94.40	5.41E-02	1.91E-03	2.63E-02
		78.34		96.00	7.86E-02	2.88E-01	3.86E-02
	SC-46	889.25		99.98	9.33E-02	1.83E-03	4.32E-02
		1120.51		99.99	1.87E-01	3.18E-01	8.94E-02
	V-48	983.52		99.98	2.61E-01	3.95E-02	1.21E-01
		1312.10		97.50	2.76E-01	1.34E-01	1.25E-01
	CR-51	320.08		9.83	1.08E+00	1.73E-01	5.15E-01
	MN-54	834.83		99.97	7.73E-02	-4.46E-02	3.59E-02
	CO-56	846.75		99.96	9.72E-02	-3.59E-03	4.52E-02
		1037.75		14.03	7.92E-01	1.82E-01	3.68E-01
		1238.25		67.00	2.41E-01	2.11E-01	1.14E-01
		1771.40		15.51	4.99E-01	5.50E-02	2.12E-01
		2598.48		16.90	2.42E-01	2.17E-02	8.58E-02
	CO-57	122.06		85.51	6.04E-02	3.14E-02	2.93E-02
		136.48		10.60	4.77E-01	-7.45E-03	2.31E-01
	CO-58	810.76		99.40	9.70E-02	-3.22E-02	4.52E-02
	FE-59	1099.22		56.50	2.41E-01	2.47E-02	1.12E-01
		1291.56		43.20	3.14E-01	-2.17E-02	1.44E-01
	CO-60	1173.22		100.00	9.66E-02	8.28E-02	4.48E-02
		1332.49		100.00	8.28E-02	2.81E-02	3.76E-02
	ZN-65	1115.52		50.75	1.98E-01	-2.35E-02	9.18E-02
	GA-67	93.31		35.70	6.93E+01	1.01E+02	3.39E+01
		208.95		2.24	1.15E+03	4.19E+02	5.58E+02
		300.22		16.00	1.67E+02	2.36E+02	8.06E+01
	SE-75	121.11		16.70	3.33E-02	-3.94E-02	1.61E-01
		136.00		59.20	9.15E-02	-3.23E-02	4.43E-02
		264.65		59.80	1.12E-01	3.75E-02	5.36E-02
		279.53		25.20	2.71E-01	-6.90E-02	1.30E-01
		400.65		11.40	6.04E-01	1.14E-01	2.87E-01
	RB-82	776.52		13.00	1.18E+00	-1.89E-01	5.49E-01

Analysis Report for 1510064-13

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)		
RB-83	520.41	46.00	1.45E-01	1.45E-01	-1.01E-02	6.77E-02		
	529.64	30.30	2.34E-01		6.96E-02	1.10E-01		
	552.65	16.40	4.32E-01		2.13E-02	2.01E-01		
KR-85	513.99	0.43	1.50E+01	1.50E+01	-1.75E+01	7.08E+00		
SR-85	513.99	99.27	8.82E-02	8.82E-02	-1.03E-01	4.17E-02		
Y-88	898.02	93.40	9.41E-02	6.81E-02	-9.93E-03	4.35E-02		
	1836.01	99.38	6.81E-02		1.95E-02	2.85E-02		
NB-93M	16.57	9.43	5.56E+03	5.56E+03	-4.18E+03	2.70E+03		
NB-94	702.63	100.00	8.19E-02	7.39E-02	2.07E-02	3.87E-02		
	871.10	100.00	7.39E-02		-7.54E-03	3.43E-02		
NB-95	765.79	99.81	1.66E-01	1.66E-01	1.23E-01	7.86E-02		
NB-95M	235.69	25.00	7.63E+01	7.63E+01	-5.29E+02	3.72E+01		
ZR-95	724.18	43.70	2.61E-01	1.62E-01	-2.59E-02	1.23E-01		
	756.72	55.30	1.62E-01		-2.63E-02	7.51E-02		
MO-99	181.06	6.20	1.09E+03	6.88E+02	2.79E+02	5.26E+02		
	739.58	12.80	6.88E+02		4.20E+01	3.21E+02		
	778.00	4.50	2.02E+03		3.32E+02	9.44E+02		
RU-103	497.08	89.00	9.99E-02	9.99E-02	-3.32E-03	4.67E-02		
RU-106	621.84	9.80	7.71E-01	7.71E-01	3.42E-01	3.63E-01		
AG-108M	433.93	89.90	6.04E-02	6.04E-02	-1.25E-02	2.84E-02		
	614.37	90.40	8.14E-02		-6.19E-03	3.84E-02		
	722.95	90.50	8.33E-02		-5.67E-04	3.91E-02		
+ CD-109	88.03	*	1.91E+00	1.91E+00	3.94E+00	9.38E-01		
	AG-110M	657.75		8.86E-02	8.86E-02	-2.89E-02	4.18E-02	
		677.61		7.49E-01		1.65E-01	3.52E-01	
		706.67		5.25E-01		1.63E-01	2.48E-01	
		763.93		4.18E-01		2.20E-02	1.97E-01	
		884.67		9.87E-02		-7.80E-02	4.52E-02	
		1384.27		2.97E-01		-3.71E-02	1.31E-01	
		CD-113M	263.70	0.02	2.46E+02	2.46E+02	3.93E+01	1.18E+02
		SN-113	255.12	1.93	3.31E+00	1.06E-01	1.17E+00	1.59E+00
			391.69	64.90	1.06E-01		-5.81E-02	5.05E-02
TE123M	159.00	84.10	7.37E-02	7.37E-02	2.17E-03	3.57E-02		
SB-124	602.71	97.87	9.10E-02	9.10E-02	-5.73E-02	4.26E-02		
	645.85	7.26	1.32E+00		2.37E-01	6.22E-01		
	722.78	11.10	9.40E-01		-6.40E-03	4.41E-01		
	1691.02	49.00	1.85E-01		-5.44E-02	7.99E-02		
	I-125	35.49	6.49	5.79E+00	5.79E+00	3.88E+00	2.81E+00	
SB-125	176.33	6.89	7.58E-01	2.03E-01	1.07E-02	3.66E-01		
	427.89	29.33	2.03E-01		-1.96E-03	9.60E-02		
	463.38	10.35	6.58E-01		5.09E-01	3.13E-01		
	600.56	17.80	3.83E-01		-5.73E-02	1.80E-01		
	635.90	11.32	6.25E-01		2.79E-02	2.94E-01		
	SB-126	414.70	83.30	3.03E-01	3.03E-01	-9.16E-02	1.43E-01	
666.33		99.60	3.92E-01		1.27E-02	1.86E-01		
695.00		99.60	3.83E-01		9.69E-02	1.80E-01		
720.50		53.80	6.62E-01		1.64E-01	3.10E-01		
+ SN-126	87.57	*	1.84E-01	1.84E-01	3.80E-01	9.04E-02		
	SB-127	473.00	25.00	3.58E+01	3.06E+01	-1.84E+00	1.68E+01	
685.20		35.70	3.06E+01		-2.13E+00	1.43E+01		
783.80		14.70	8.76E+01		0.00E+00	4.11E+01		
I-129	29.78	57.00	1.25E+00	1.25E+00	-2.05E-01	6.06E-01		
	33.60	13.20	2.60E+00		-1.27E+00	1.26E+00		

Analysis Report for 1510064-13

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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-129	39.58	7.52	2.30E+00	1.25E+00	8.69E-01	1.12E+00
I-131	284.30	6.05	1.04E+01	7.59E-01	-4.12E+00	4.98E+00
	364.48	81.20	7.59E-01		-2.07E-01	3.60E-01
	636.97	7.26	1.11E+01		-5.99E-01	5.24E+00
	722.89	1.80	4.79E+01		-3.26E-01	2.25E+01
TE-132	49.72	13.10	2.45E+02	2.64E+01	1.55E+02	1.19E+02
	228.16	88.00	2.64E+01		4.56E+00	1.27E+01
BA-133	81.00	33.00	1.33E-01	8.99E-02	-3.44E-02	6.43E-02
	302.84	17.80	3.31E-01		-4.50E-02	1.59E-01
	356.01	60.00	8.99E-02		-2.83E-02	4.26E-02
I-133	529.87	86.30	4.38E+08	4.38E+08	1.59E+08	2.05E+08
XE-133	81.00	38.00	4.81E+00	4.81E+00	-1.25E+00	2.33E+00
CS-134	563.23	8.38	7.53E-01	8.92E-02	8.74E-02	3.53E-01
	569.32	15.43	3.67E-01		3.46E-02	1.71E-01
	604.70	97.60	8.92E-02		-1.16E-02	4.25E-02
	795.84	85.40	1.04E-01		1.05E-02	4.90E-02
	801.93	8.73	9.09E-01		-1.03E-01	4.25E-01
CS-135	268.24	16.00	3.92E-01	3.92E-01	-1.22E-01	1.89E-01
@ I-135	1131.51	22.50	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	1260.41	28.60	1.00E+26		1.00E+26	1.00E+20
@	1678.03	9.54	1.00E+26		1.00E+26	1.00E+20
CS-136	153.22	7.46	3.08E+00	3.10E-01	-5.76E-01	1.49E+00
	163.89	4.61	5.14E+00		4.16E+00	2.49E+00
	176.55	13.56	1.71E+00		6.68E-01	8.27E-01
	273.65	12.66	1.86E+00		-8.24E-01	8.89E-01
	340.57	48.50	5.95E-01		-4.48E-01	2.85E-01
	818.50	99.70	3.10E-01		-2.03E-01	1.43E-01
	1048.07	79.60	4.53E-01		3.00E-02	2.09E-01
	1235.34	19.70	2.90E+00		1.92E+00	1.37E+00
CS-137	661.65	85.12	9.71E-02	9.71E-02	2.84E-02	4.60E-02
LA-138	788.74	34.00	2.33E-01	8.95E-02	1.27E-01	1.09E-01
	1435.80	66.00	8.95E-02		-4.53E-02	3.87E-02
CE-139	165.85	80.35	7.64E-02	7.64E-02	1.89E-02	3.70E-02
BA-140	162.64	6.70	3.63E+00	1.13E+00	7.19E-01	1.76E+00
	304.84	4.50	5.60E+00		-1.01E+00	2.67E+00
	423.70	3.20	8.57E+00		-7.20E-01	4.06E+00
	437.55	2.00	1.31E+01		-6.54E-01	6.18E+00
	537.32	25.00	1.13E+00		4.20E-01	5.32E-01
LA-140	328.77	20.50	1.50E+00	4.03E-01	1.64E+00	7.23E-01
	487.03	45.50	5.86E-01		1.36E-01	2.76E-01
	815.85	23.50	1.45E+00		4.10E-01	6.74E-01
	1596.49	95.49	4.03E-01		-3.21E-02	1.81E-01
CE-141	145.44	48.40	1.98E-01	1.98E-01	-1.08E-01	9.60E-02
CE-143	57.36	11.80	6.69E+05	3.06E+05	-2.62E+05	3.23E+05
	293.26	42.00	3.06E+05		1.23E+05	1.49E+05
	664.55	5.20	2.56E+06		1.99E+06	1.22E+06
CE-144	133.54	10.80	4.61E-01	4.61E-01	-4.86E-02	2.23E-01
PM-144	476.78	42.00	1.44E-01	7.79E-02	-6.81E-02	6.78E-02
	618.01	98.60	7.79E-02		-1.62E-03	3.68E-02
	696.49	99.49	8.25E-02		-1.78E-02	3.89E-02
PM-145	36.85	21.70	1.04E+00	5.34E-01	-1.09E-01	5.05E-01
	37.36	39.70	5.34E-01		-5.61E-02	2.59E-01
	42.30	15.10	8.93E-01		3.38E-01	4.34E-01

: 00738

Analysis Report for 1510064-13

CP2211S21-22

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
PM-145	72.40	2.31	2.23E+00	5.34E-01	-1.61E+00	1.09E+00
PM-146	453.90	39.94	1.59E-01	1.59E-01	8.80E-02	7.52E-02
	735.90	14.01	5.24E-01		2.20E-01	2.45E-01
	747.13	13.10	5.78E-01		2.14E-01	2.71E-01
ND-147	91.11	28.90	1.31E+00	1.31E+00	1.48E-01	6.42E-01
	531.02	13.10	2.58E+00		7.59E-01	1.21E+00
PM-149	285.90	3.10	1.22E+04	1.22E+04	-2.79E+03	5.85E+03
EU-152	121.78	20.50	2.35E-01	2.35E-01	1.22E-01	1.14E-01
	244.69	5.40	1.02E+00		-2.55E+00	4.91E-01
	344.27	19.13	2.74E-01		4.60E-02	1.30E-01
	778.89	9.20	8.41E-01		4.90E-01	3.94E-01
	964.01	10.40	1.02E+00		-2.57E+00	4.84E-01
	1085.78	7.22	1.13E+00		4.92E-01	5.21E-01
	1112.02	9.60	9.34E-01		-1.76E-01	4.33E-01
	1407.95	14.94	6.40E-01		3.76E-01	2.94E-01
GD-153	97.43	31.30	1.67E-01	1.67E-01	-4.70E-02	8.11E-02
	103.18	22.20	2.33E-01		-1.11E-01	1.13E-01
EU-154	123.07	40.50	1.18E-01	1.18E-01	3.22E-02	5.73E-02
	723.30	19.70	3.85E-01		-2.62E-03	1.81E-01
	873.19	11.50	6.64E-01		-4.67E-02	3.08E-01
	996.32	10.30	8.58E-01		-2.46E-02	4.00E-01
	1004.76	17.90	4.50E-01		9.95E-03	2.08E-01
	1274.45	35.50	2.59E-01		-7.19E-02	1.19E-01
EU-155	86.50	30.90	2.15E-01	2.15E-01	-2.13E-01	1.05E-01
	105.30	20.70	2.30E-01		-5.11E-02	1.12E-01
EU-156	811.77	10.40	2.52E+00	2.52E+00	-8.85E-01	1.17E+00
	1153.47	7.20	4.80E+00		2.39E-01	2.23E+00
	1230.71	8.90	4.31E+00		1.08E+00	2.01E+00
HO-166M	184.41	72.60	9.06E-02	9.06E-02	2.70E-02	4.41E-02
	280.45	29.60	1.96E-01		-5.00E-02	9.42E-02
	410.94	11.10	5.02E-01		1.20E-01	2.37E-01
	711.69	54.10	1.39E-01		1.56E-03	6.54E-02
TM-171	66.72	0.14	3.72E+01	3.72E+01	-5.26E+00	1.81E+01
HF-172	81.75	4.52	9.74E-01	4.45E-01	-6.34E-01	4.72E-01
	125.81	11.30	4.45E-01		-7.88E-01	2.16E-01
LU-172	181.53	20.60	4.94E+00	2.74E+00	1.13E+00	2.39E+00
	810.06	16.63	8.19E+00		-2.72E+00	3.81E+00
	912.12	15.25	1.97E+01		4.97E+01	9.53E+00
	1093.66	62.50	2.74E+00		6.46E-01	1.27E+00
LU-173	100.72	5.24	9.63E-01	3.20E-01	5.91E-01	4.68E-01
	272.11	21.20	3.20E-01		2.42E-01	1.54E-01
HF-175	343.40	84.00	8.51E-02	8.51E-02	3.64E-02	4.05E-02
LU-176	88.34	13.30	5.09E-01	5.94E-02	7.19E-01	2.49E-01
	201.83	86.00	6.46E-02		-3.05E-02	3.12E-02
	306.78	94.00	5.94E-02		9.82E-03	2.84E-02
TA-182	67.75	41.20	1.47E-01	1.47E-01	5.20E-03	7.14E-02
	1121.30	34.90	4.99E-01		8.34E-01	2.38E-01
	1189.05	16.23	7.18E-01		1.78E-01	3.34E-01
	1221.41	26.98	4.37E-01		9.45E-02	2.03E-01
	1231.02	11.44	1.10E+00		1.98E-01	5.14E-01
IR-192	308.46	29.68	2.42E-01	1.55E-01	-5.28E-02	1.15E-01
	468.07	48.10	1.55E-01		1.75E-02	7.30E-02
HG-203	279.19	77.30	1.17E-01	1.17E-01	5.26E-02	5.64E-02

Analysis Report for 1510064-13

CP2211S21-22

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
BI-207	569.67	97.72	5.66E-02	5.66E-02	5.34E-03	2.63E-02
	1063.62	74.90	1.10E-01		6.31E-03	5.09E-02
+ TL-208	583.14 *	30.22	2.64E-01	1.15E-01	1.44E+00	1.26E-01
	860.37 *	4.48	2.60E+00		2.62E+00	1.24E+00
	2614.66 *	35.85	1.15E-01		1.03E+00	4.45E-02
BI-210M	262.00	45.00	1.28E-01	1.28E-01	1.83E-02	6.13E-02
	300.00	23.00	2.86E-01		4.03E-01	1.38E-01
+ PB-210	46.50 *	4.25	3.61E+00	3.61E+00	1.99E+00	1.77E+00
PB-211	404.84	2.90	1.94E+00	1.94E+00	3.41E-01	9.17E-01
	831.96	2.90	2.52E+00		1.60E-01	1.17E+00
+ BI-212	727.17 *	11.80	6.87E-01	6.87E-01	1.27E+00	3.24E-01
	1620.62	2.75	2.83E+00		9.44E-01	1.26E+00
+ PB-212	238.63 *	44.60	2.62E-01	2.62E-01	1.49E+00	1.28E-01
	300.09	3.41	1.93E+00		2.72E+00	9.29E-01
+ BI-214	609.31 *	46.30	2.21E-01	2.21E-01	1.32E+00	1.06E-01
	1120.29 *	15.10	9.54E-01		1.73E+00	4.55E-01
	1764.49 *	15.80	5.31E-01		1.69E+00	2.37E-01
	2204.22 *	4.98	1.46E+00		9.87E-01	6.36E-01
+ PB-214	295.21 *	19.19	3.50E-01	2.28E-01	1.49E+00	1.68E-01
	351.92 *	37.19	2.28E-01		1.48E+00	1.10E-01
RN-219	401.80	6.50	8.98E-01	8.98E-01	1.57E-01	4.26E-01
RA-223	323.87	3.88	1.49E+00	1.49E+00	6.27E-01	7.12E-01
+ RA-224	240.98 *	3.95	2.95E+00	2.95E+00	5.58E+00	1.45E+00
RA-225	40.00	31.00	2.02E+00	2.02E+00	7.60E-01	9.80E-01
+ RA-226	186.21 *	3.28	2.43E+00	2.43E+00	2.05E+00	1.19E+00
TH-227	50.10	8.40	9.17E-01	7.29E-01	5.82E-01	4.44E-01
	236.00	11.50	7.29E-01		-5.06E+00	3.56E-01
	256.20	6.30	8.39E-01		-6.48E-01	4.02E-01
+ AC-228	338.32 *	11.40	7.56E-01	4.29E-01	1.39E+00	3.66E-01
	911.07 *	27.70	4.29E-01		1.56E+00	2.05E-01
	969.11 *	16.60	7.99E-01		1.64E+00	3.82E-01
TH-230	48.44	16.90	4.80E-01	4.80E-01	-6.29E-01	2.32E-01
	62.85	4.60	1.31E+00		1.79E+00	6.36E-01
	67.67	0.37	1.38E+01		4.88E-01	6.71E+00
PA-231	283.67	1.60	3.43E+00	2.55E+00	-1.36E+00	1.64E+00
	302.67	2.30	2.55E+00		-3.46E-01	1.22E+00
TH-231	25.64	14.70	1.62E+01	7.61E-01	1.53E+01	7.85E+00
	84.21	6.40	7.61E-01		1.00E+00	3.70E-01
PA-233	311.98	38.60	2.81E-01	2.81E-01	3.19E-03	1.34E-01
PA-234	131.20	20.40	2.66E-01	2.66E-01	2.96E-01	1.29E-01
	733.99	8.80	7.68E-01		-1.97E-03	3.57E-01
	946.00	12.00	6.12E-01		-6.77E-03	2.82E-01
PA-234M	1001.03	0.92	9.14E+00	9.14E+00	-9.05E-01	4.24E+00
+ TH-234	63.29 *	3.80	2.14E+00	2.14E+00	1.13E+00	1.05E+00
U-235	143.76	10.50	4.92E-01	4.92E-01	-1.26E-01	2.39E-01
	163.35	4.70	1.12E+00		2.22E-01	5.43E-01
	205.31	4.70	1.23E+00		-2.10E-01	5.95E-01
NP-237	86.50	12.60	5.20E-01	5.20E-01	-5.18E-01	2.55E-01
NP-239	106.10	22.70	8.55E+02	8.55E+02	-1.52E+02	4.15E+02
	228.18	10.70	2.18E+03		3.76E+02	1.05E+03
	277.60	14.10	1.69E+03		7.34E+01	8.13E+02
AM-241	59.54	35.90	1.52E-01	1.52E-01	2.14E-02	7.34E-02
AM-243	74.67	66.00	1.09E-01	1.09E-01	-2.13E-01	5.35E-02

Analysis Report for 1510064-13
 CP2211S21-22

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
CM-243	209.75	3.29	1.95E+00	4.16E-01	2.50E+00	9.46E-01
	228.14	10.60	5.36E-01		9.27E-02	2.58E-01
	277.60	14.00	4.16E-01		1.80E-02	2.00E-01

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

No Action Level results available for reporting purposes.

DATA REVIEW COMMENTS REPORT

Creation Date	Comment	User
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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: CP2211S21-22

Elapsed Live time: 3600
 Elapsed Real Time: 3601

Channel	1	2	3	4	5	6	7	8	9
1:	0	0	0	0	0	0	0	3	212
9:	596	1183	1037	418	636	1684	232	123	
17:	143	140	121	122	142	134	131	111	
25:	144	119	124	94	107	116	126	136	
33:	128	105	119	130	141	111	136	130	
41:	151	135	123	129	130	174	192	104	
49:	115	108	124	93	129	105	77	71	
57:	92	90	104	111	107	110	163	182	
65:	104	120	122	121	136	128	135	142	
73:	148	185	461	232	512	383	112	132	
81:	96	106	122	159	148	96	217	214	
89:	121	205	119	97	211	161	99	84	
97:	73	93	84	89	84	88	81	60	
105:	95	92	67	80	83	72	74	94	
113:	84	84	82	76	72	71	65	74	
121:	68	83	69	76	64	67	82	84	
129:	135	90	81	78	61	58	65	55	
137:	63	64	71	68	71	76	69	87	
145:	60	73	82	90	78	80	53	66	
153:	66	81	75	65	72	70	81	60	
161:	54	68	74	64	66	63	52	82	
169:	52	67	63	61	55	44	52	60	
177:	69	54	56	57	57	77	58	58	
185:	73	175	107	68	53	67	59	65	
193:	48	51	63	61	51	61	61	54	
201:	44	69	41	68	64	66	54	56	
209:	96	83	56	60	43	49	56	54	
217:	58	54	57	52	54	48	43	54	
225:	46	55	62	41	54	31	46	43	
233:	55	50	48	57	67	297	551	111	
241:	104	166	71	42	35	28	30	36	
249:	49	38	35	27	45	42	34	33	
257:	33	36	46	36	42	34	54	39	
265:	34	35	35	38	44	86	70	35	
273:	29	33	37	30	49	48	32	35	
281:	39	37	37	30	35	28	38	28	
289:	33	33	23	36	21	50	248	132	
297:	24	40	43	53	55	34	25	22	
305:	39	28	34	30	24	33	28	19	
313:	24	29	28	16	25	22	31	22	
321:	21	32	23	30	41	28	36	48	
329:	46	41	32	24	27	40	30	28	
337:	33	125	87	27	28	17	25	20	
345:	33	19	25	23	43	30	147	378	
353:	115	21	24	24	21	25	34	19	
361:	27	18	22	26	27	19	24	20	

369: 16 15 25 16 20 22 26 17

Sample Title: CP2211S21-22

Channel	1	2	3	4	5	6	7	8
377:	21	37	28	20	33	20	29	16
385:	18	32	25	20	26	29	22	20
393:	20	28	32	19	17	20	23	24
401:	28	16	25	22	20	21	17	29
409:	31	24	19	13	14	19	12	21
417:	20	22	24	27	21	21	17	21
425:	25	26	19	25	17	18	17	23
433:	23	17	14	11	22	19	29	20
441:	18	27	15	13	18	16	19	25
449:	14	12	10	27	24	21	17	23
457:	19	21	17	12	22	22	39	31
465:	10	20	15	19	16	18	12	16
473:	11	20	21	20	12	19	14	27
481:	23	17	14	13	15	17	20	17
489:	15	11	20	19	16	16	15	14
497:	14	15	13	15	12	12	17	21
505:	13	23	18	13	21	62	88	44
513:	13	12	20	10	18	11	21	12
521:	12	8	9	17	15	9	11	12
529:	17	19	12	13	10	15	16	9
537:	20	22	15	11	16	6	10	14
545:	12	13	13	20	12	13	15	8
553:	13	17	10	11	21	12	15	9
561:	14	21	12	10	20	12	20	12
569:	12	8	8	13	19	20	9	14
577:	18	14	13	21	14	59	176	87
585:	26	8	9	13	22	10	13	9
593:	15	16	13	12	14	19	14	12
601:	7	5	12	12	14	14	12	67
609:	244	142	16	17	12	14	12	18
617:	9	14	14	8	20	13	17	9
625:	10	13	5	6	11	12	11	11
633:	14	9	15	8	10	12	14	17
641:	18	13	7	11	10	15	10	13
649:	14	11	12	9	17	9	20	7
657:	10	15	14	11	18	20	16	17
665:	24	12	14	10	11	8	16	11
673:	17	10	10	6	15	12	18	11
681:	7	7	14	9	10	6	9	13
689:	13	9	10	11	11	14	16	13
697:	12	15	9	17	17	13	15	16
705:	12	11	12	15	12	7	10	15
713:	10	12	16	7	13	16	11	15
721:	8	7	5	13	11	20	35	31
729:	17	6	6	7	12	9	7	12
737:	8	13	10	7	10	7	8	12
745:	9	10	7	8	12	16	9	9
753:	9	8	6	7	9	4	12	9
761:	8	12	7	9	15	16	26	22
769:	21	14	10	18	8	13	7	8
777:	9	7	10	12	13	14	6	6
785:	15	18	5	11	11	8	8	13
793:	9	19	20	13	6	11	12	8

801: 10 6 7 12 15 11 14 3

Sample Title: CP2211S21-22

Channel	-----	-----	-----	-----	-----	-----	-----	-----
809:	12	8	12	4	8	12	6	11
817:	8	4	12	8	5	16	8	7
825:	6	10	8	9	10	6	10	6
833:	6	10	10	9	6	10	12	16
841:	8	14	8	8	5	9	8	10
849:	13	7	7	7	6	11	6	8
857:	10	10	19	23	20	7	8	7
865:	9	4	4	13	6	8	9	8
873:	4	7	16	6	10	6	6	16
881:	8	3	5	8	8	5	4	9
889:	8	14	6	7	7	7	7	6
897:	3	12	8	10	5	9	8	12
905:	5	9	9	11	13	60	114	58
913:	9	7	4	13	6	7	10	4
921:	5	13	5	11	12	7	9	10
929:	9	6	8	7	16	18	11	12
937:	10	7	6	8	6	9	4	9
945:	10	9	2	6	7	7	14	9
953:	9	5	5	7	10	5	6	5
961:	8	8	9	29	22	11	13	44
969:	68	25	6	9	5	7	4	6
977:	6	5	9	10	6	6	6	7
985:	7	6	6	5	9	6	15	6
993:	8	7	4	14	10	12	8	8
1001:	8	5	6	10	6	7	9	3
1009:	10	8	11	5	3	8	4	4
1017:	7	11	9	9	7	4	8	8
1025:	8	10	7	11	3	7	5	8
1033:	8	10	5	9	4	10	9	10
1041:	6	6	4	7	4	8	4	5
1049:	5	12	11	8	14	4	5	8
1057:	10	9	5	9	7	5	8	5
1065:	6	9	5	8	3	7	6	4
1073:	6	4	7	9	6	8	11	4
1081:	3	4	4	7	4	5	12	10
1089:	7	4	9	8	11	9	15	3
1097:	5	7	10	7	8	13	5	8
1105:	7	11	9	7	7	3	13	7
1113:	6	10	8	11	6	10	34	59
1121:	26	10	11	3	9	5	6	2
1129:	8	10	11	9	8	6	6	14
1137:	6	8	9	7	5	9	6	8
1145:	9	10	7	6	8	5	7	6
1153:	10	9	11	10	9	9	6	9
1161:	9	4	5	8	9	12	8	4
1169:	7	4	7	9	8	9	12	8
1177:	2	3	11	10	11	4	6	9
1185:	8	7	9	10	9	8	8	8
1193:	4	8	7	8	10	10	5	14
1201:	13	9	6	8	12	8	8	4
1209:	17	9	9	7	5	8	8	10
1217:	7	10	6	8	8	6	10	10
1225:	6	6	8	6	12	10	9	11

1233: 9 9 10 14 18 28 11 8

Sample Title: CP2211S21-22

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1241:	5	6	7	5	6	6	7	3
1249:	5	11	1	6	6	4	5	8
1257:	8	7	7	8	6	6	7	6
1265:	8	5	2	7	10	8	9	5
1273:	7	8	4	9	3	5	9	11
1281:	11	5	4	4	9	10	3	3
1289:	3	3	7	8	9	7	7	4
1297:	9	5	2	4	10	4	0	6
1305:	10	6	3	3	6	3	1	6
1313:	5	7	3	1	3	9	6	4
1321:	6	4	4	2	3	4	6	4
1329:	6	3	4	4	7	6	3	3
1337:	1	2	7	3	2	1	4	5
1345:	2	1	0	4	2	7	1	2
1353:	1	3	6	3	4	3	2	5
1361:	5	5	1	3	3	3	1	2
1369:	3	4	5	3	8	3	2	5
1377:	10	9	8	4	3	4	2	4
1385:	2	4	0	2	1	1	1	2
1393:	3	1	4	4	5	1	1	2
1401:	7	7	3	3	6	4	17	6
1409:	3	3	2	2	2	3	1	6
1417:	3	2	3	2	2	1	4	2
1425:	1	3	5	1	1	0	4	1
1433:	2	4	2	2	1	2	5	4
1441:	2	3	2	0	3	3	3	2
1449:	1	1	3	5	2	2	1	3
1457:	3	23	139	287	252	85	5	1
1465:	1	3	3	2	0	2	4	4
1473:	3	0	1	4	1	2	1	2
1481:	2	3	3	2	2	3	2	3
1489:	2	4	0	2	1	2	4	4
1497:	3	4	5	4	0	2	3	2
1505:	2	4	4	4	6	5	3	4
1513:	2	5	4	2	2	3	1	1
1521:	2	6	7	2	2	1	5	4
1529:	4	3	3	1	0	2	1	0
1537:	3	3	2	5	1	0	3	0
1545:	0	4	2	2	1	1	2	2
1553:	1	2	2	1	0	3	0	1
1561:	3	2	0	3	2	5	2	3
1569:	2	3	3	0	1	0	0	2
1577:	1	0	2	3	1	1	2	3
1585:	0	0	8	14	9	3	3	6
1593:	5	1	4	1	2	4	1	2
1601:	4	1	1	2	1	1	0	0
1609:	1	0	3	1	1	3	1	0
1617:	2	1	2	6	2	3	4	2
1625:	2	0	1	0	3	5	5	0
1633:	1	0	3	1	4	4	1	1
1641:	1	0	1	1	4	2	2	2
1649:	2	2	1	3	2	2	0	1
1657:	2	1	1	2	5	3	3	0

1665: 2 5 3 1 2 0 2 2

Sample Title: CP2211S21-22

Channel	1	2	3	4	5	6	7	8
1673:	1	1	1	0	2	3	0	4
1681:	0	0	3	2	1	2	0	2
1689:	1	2	0	1	3	3	5	1
1697:	2	0	3	0	1	1	0	0
1705:	3	2	0	0	2	0	1	4
1713:	2	1	1	2	0	0	3	0
1721:	1	1	1	1	0	2	4	5
1729:	4	7	1	1	0	1	0	1
1737:	0	3	2	0	1	1	2	0
1745:	0	1	1	1	1	0	2	1
1753:	2	2	2	1	4	0	3	1
1761:	2	5	26	39	14	4	2	0
1769:	0	2	2	2	1	0	2	0
1777:	1	4	3	1	1	0	1	2
1785:	0	2	0	1	0	0	0	2
1793:	0	2	1	1	1	2	1	0
1801:	0	0	0	0	2	0	1	0
1809:	0	2	1	2	1	0	0	0
1817:	0	0	1	0	1	1	0	2
1825:	1	0	1	1	0	0	0	1
1833:	0	0	1	1	5	0	1	1
1841:	0	1	0	1	2	0	5	3
1849:	1	1	1	2	1	1	0	1
1857:	1	0	1	3	0	0	0	2
1865:	0	1	0	0	0	3	0	0
1873:	1	1	0	1	1	1	1	0
1881:	3	0	0	0	1	1	1	3
1889:	1	2	1	2	0	1	1	2
1897:	1	1	2	5	0	2	1	1
1905:	1	1	1	3	2	1	0	0
1913:	1	3	2	2	1	0	0	0
1921:	1	2	3	2	0	0	1	0
1929:	1	1	1	0	0	3	3	1
1937:	2	1	1	0	1	1	0	0
1945:	2	1	0	1	2	0	1	1
1953:	3	1	1	1	1	1	0	0
1961:	0	1	0	2	0	0	2	2
1969:	0	2	1	1	2	0	2	2
1977:	1	1	1	0	3	1	0	0
1985:	0	1	1	1	0	0	1	2
1993:	0	2	0	1	1	1	0	1
2001:	1	3	0	1	0	2	1	0
2009:	1	0	0	0	0	0	0	0
2017:	1	0	0	1	2	1	0	0
2025:	1	0	1	2	0	1	2	1
2033:	0	0	0	0	1	1	0	0
2041:	0	0	1	0	1	0	2	0
2049:	1	0	0	1	3	1	0	1
2057:	1	0	3	0	2	0	0	2
2065:	0	1	0	0	3	0	2	0
2073:	1	0	2	3	1	0	0	1
2081:	0	0	0	0	1	1	0	0
2089:	2	2	2	0	0	0	1	2

2097: 0 0 0 2 1 4 3 2

Sample Title: CP2211S21-22

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

2529: 0 0 0 0 1 0 1 1

Sample Title: CP2211S21-22

Channel	-----	-----	-----	-----	-----	-----	-----	-----
2537:	0	1	0	0	0	1	0	0
2545:	0	0	1	0	1	1	0	0
2553:	2	1	2	1	1	2	1	4
2561:	1	0	2	0	1	1	1	0
2569:	1	1	0	0	0	1	0	1
2577:	2	1	0	0	0	0	0	0
2585:	0	0	1	1	0	2	0	0
2593:	1	0	0	1	0	0	1	0
2601:	0	0	0	0	0	1	0	0
2609:	0	1	5	21	33	37	13	3
2617:	1	1	0	0	0	0	0	1
2625:	0	1	0	0	0	1	0	0
2633:	1	2	0	0	0	0	1	0
2641:	0	0	0	1	1	0	0	1
2649:	1	1	0	0	0	0	1	0
2657:	1	1	0	0	1	0	1	2
2665:	0	0	0	0	1	0	0	0
2673:	0	0	0	1	0	0	0	1
2681:	0	0	0	0	0	0	0	0
2689:	0	0	0	1	0	0	0	0
2697:	1	1	0	0	0	2	0	0
2705:	0	0	1	0	0	0	0	0
2713:	2	0	0	0	0	0	0	0
2721:	0	1	0	0	0	0	0	0
2729:	0	0	0	2	0	0	1	2
2737:	1	1	0	0	0	1	0	0
2745:	2	0	0	0	1	3	0	0
2753:	0	0	0	0	0	0	0	1
2761:	0	0	0	1	1	1	1	0
2769:	0	1	0	0	0	0	0	0
2777:	0	0	0	1	1	0	0	1
2785:	0	0	0	1	0	0	0	0
2793:	0	0	0	0	0	0	1	1
2801:	0	1	0	0	1	1	0	0
2809:	0	0	0	0	0	0	1	1
2817:	0	0	0	2	3	0	0	1
2825:	0	0	0	0	0	0	0	1
2833:	0	0	0	0	0	1	0	0
2841:	0	0	0	0	1	0	0	0
2849:	0	0	0	0	0	0	1	0
2857:	0	0	0	1	1	0	0	0
2865:	0	0	0	0	1	1	1	0
2873:	1	0	0	0	0	1	0	0
2881:	0	0	0	0	0	1	0	0
2889:	0	0	2	0	1	0	1	0
2897:	1	0	0	1	0	0	0	0
2905:	1	0	1	1	1	0	0	0
2913:	0	0	0	0	1	0	0	0
2921:	0	1	0	0	0	0	0	0
2929:	0	0	0	0	0	0	0	0
2937:	0	0	0	0	0	0	0	0
2945:	0	0	0	0	1	0	0	0
2953:	1	0	0	0	0	0	0	0

2961: 1 0 0 0 2 0 0 1

Sample Title: CP2211S21-22

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

3393: 0 0 0 0 0 1 0 0

Sample Title: CP2211S21-22

Channel	-----	-----	-----	-----	-----	-----	-----	-----
3401:	0	0	1	0	0	0	1	1
3409:	0	0	0	1	0	0	0	0
3417:	0	0	0	0	0	0	0	0
3425:	0	0	0	0	0	1	0	2
3433:	0	0	0	1	0	0	0	0
3441:	0	1	0	0	1	0	0	1
3449:	0	1	0	0	0	0	1	0
3457:	0	0	0	1	0	0	0	0
3465:	0	0	0	1	0	0	0	0
3473:	0	0	0	1	0	0	0	0
3481:	0	0	0	0	1	0	0	0
3489:	0	0	0	0	1	0	0	1
3497:	0	0	0	0	0	0	0	0
3505:	0	0	0	0	2	0	0	1
3513:	0	1	0	0	0	0	0	0
3521:	1	0	0	0	0	0	0	0
3529:	0	0	1	0	0	0	0	0
3537:	0	0	0	0	0	0	0	1
3545:	0	0	0	0	0	0	0	0
3553:	0	0	0	0	1	0	1	0
3561:	0	1	0	1	0	0	0	0
3569:	0	0	0	1	0	0	0	0
3577:	0	0	0	0	0	0	0	0
3585:	0	1	0	0	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	1	1	0	0
3617:	0	1	0	0	0	0	0	0
3625:	0	0	0	0	0	0	0	0
3633:	0	0	0	0	0	0	0	1
3641:	0	0	0	0	0	0	0	0
3649:	1	0	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	1	1	0	0
3681:	1	0	0	0	0	0	0	0
3689:	0	0	0	0	0	0	0	2
3697:	0	0	0	0	1	0	0	0
3705:	0	0	0	0	0	0	0	0
3713:	0	0	1	0	0	0	1	0
3721:	0	0	0	0	0	0	1	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	1	0	0	0	0	1	0
3761:	0	0	0	0	0	0	0	1
3769:	0	0	0	0	0	0	0	0
3777:	0	0	0	0	1	0	1	0
3785:	0	0	0	0	0	1	0	0
3793:	0	0	0	0	0	1	0	0
3801:	0	0	0	2	0	0	1	1
3809:	0	0	0	0	0	0	1	0
3817:	0	0	0	1	1	0	0	0

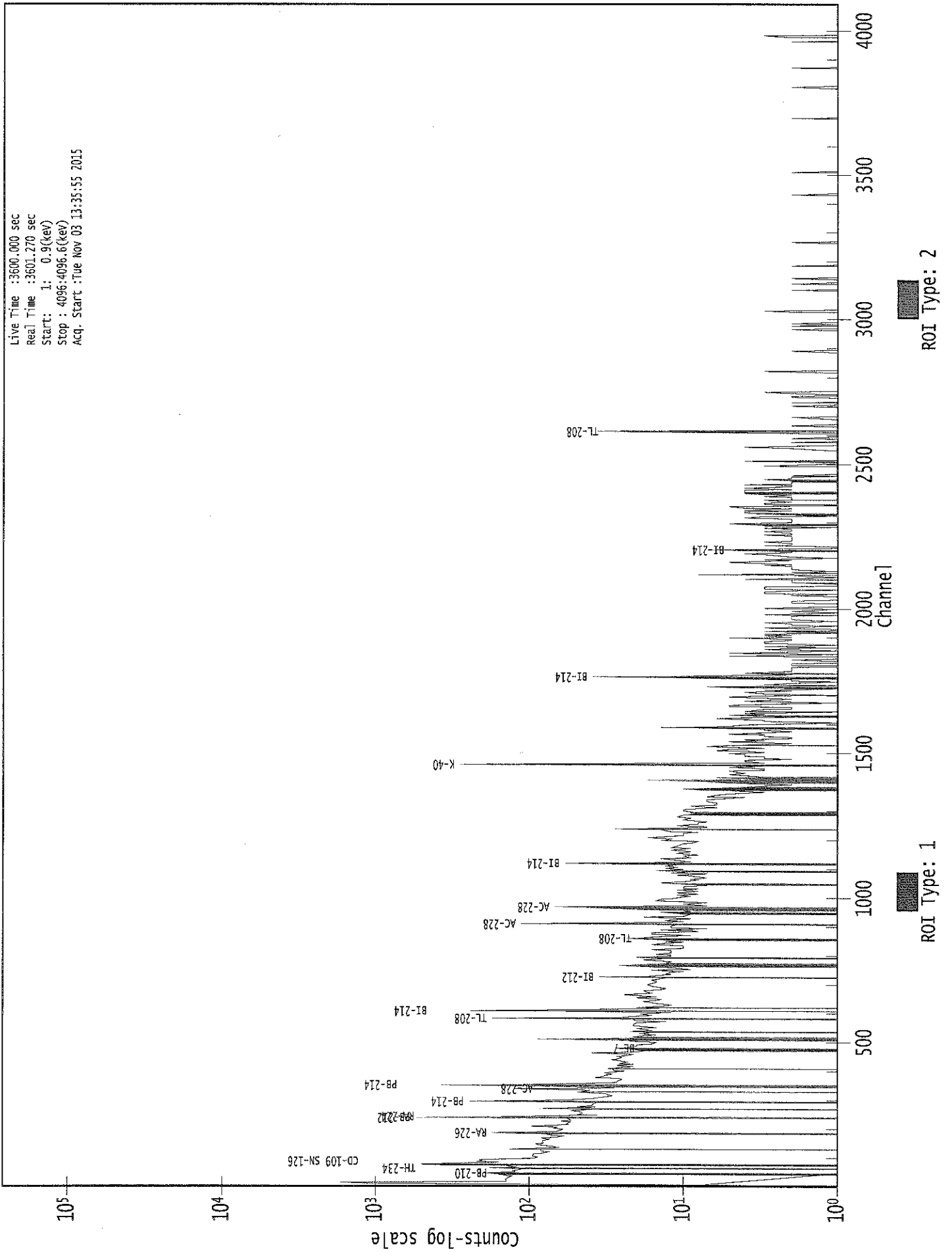
3825: 0 1 0 1 0 0 0 0

Sample Title: CP2211S21-22

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	1	0	0
3857:	0	0	0	0	0	0	0	1
3865:	0	0	0	0	0	0	2	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:	1	0	0	0	0	0	0	0
3905:	0	1	1	0	0	0	0	1
3913:	0	0	0	0	0	0	0	0
3921:	0	0	0	0	0	0	0	0
3929:	0	0	0	0	0	0	0	0
3937:	0	0	0	0	0	0	0	0
3945:	0	0	0	0	0	0	0	0
3953:	0	0	0	0	0	0	0	0
3961:	0	2	0	1	0	0	0	0
3969:	0	0	1	1	0	0	0	0
3977:	2	0	0	0	0	0	3	0
3985:	0	1	0	0	0	0	0	0
3993:	0	0	0	0	0	0	1	0
4001:	0	0	0	0	0	0	0	0
4009:	0	1	0	0	0	0	0	1
4017:	0	0	0	0	1	0	0	1
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	1	1	0	0
4057:	0	0	0	0	0	0	0	0
4065:	0	0	0	0	0	0	0	0
4073:	0	0	0	0	0	0	0	0
4081:	0	0	0	0	0	0	1	0
4089:	0	0	0	0	0	0	0	0

0000029035.CNF

Live Time : 3600.000 sec
Real Time : 3601.270 sec
Start : 1: 0.9(keV)
Stop : 4096.4096.6(keV)
Acq. Start : Tue Nov 03 13:35:55 2015



 ***** GENIE QUALITY ASSURANCE *****

Last Results Report
 11/2/15 6:00:34 AM

11/2

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: 11/2/15 5:44:51 AM
 Measurement Date: 11/2/15 5:44:54 AM
 Elapsed Live Time: 900.0 seconds
 Elapsed Real Time: 932.3 seconds

Parameter Description	Value	Deviation/Flags
[Mean +/- Std. Dev.]		< LU : SD : UD : BS >
DAILY BKG CT RATE GE4	1.6867E+000	-4.3268E-002
[SD: 8.8023E+000+/-164.45]		< : : : >
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
11/2/15 5:29:13 AM

Handwritten signature

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: 11/2/15 5:13:02 AM
Elapsed Live Time: 900.0 seconds
Elapsed Real Time: 958.4 seconds

Table with 4 columns: Parameter Description, Value, Deviation/Flags, and a final column with symbols. Rows include peak centroid data for 59.54 keV, 661.65 keV, 1332.49 ke, 1836.1 keV, and FWHM data for Am-241, Cs-137, and Co-60. Trend tests are noted for Cs-137 and Co-60.

Decay corrected activity 9.5907E+004
Boundary Limits: [7.892E-002, 1.184E-001] < : : : >
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 2.0976E+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
 11/3/15 6:01:35 AM

1117

QA File: \\OR-GAMMA1\ApexRoot\Countroom\QA\D0000000001B.QCK

Detector: GE1
 Geometry: <None>
 Certificate: <None>
 Sample ID: QA Background Ch
 Sample Desc: QA Count
 Sample Quantity: 1.0000E+000
 Sample Date: 11/3/15 5:46:21 AM
 Measurement Date: 11/3/15 5:46:23 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	2.0700E+000	-1.3780E-001
[SD: 2.3041E+000+/- 1.699]		< : : : >
Trend Test: The last	9 samples exhibit a bias trend.	

Flags Key: LU = Lower/Upper Bounds Test (Ab = Above, Be = Below)
 SD = Sample Driven N-Sigma Test (In = Investigate, Ac = Action)
 UD = User Driven N-Sigma Test (In = Investigate, Ac = Action)
 BS = Measurement Bias Test (In = Investigate, Ac = Action)

 ***** G E N I E Q U A L I T Y A S S U R A N C E *****

Last Results Report
 11/3/15 6:01:43 AM

1112

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: 11/3/15 5:46:27 AM
 Measurement Date: 11/3/15 5:46:29 AM
 Elapsed Live Time: 900.0 seconds
 Elapsed Real Time: 900.1 seconds

Parameter Description [Mean +/- Std. Dev.]	Value	Deviation/Flags < LU : SD : UD : BS >
DAILY BKG CT RATE GE2 [SD: 4.5536E+000 +/- 0.281]	4.4900E+000	-2.2644E-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
 11/3/15 6:01:51 AM

TJD

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: 11/3/15 5:46:35 AM
 Measurement Date: 11/3/15 5:46:38 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	1.8730E+003	-2.7493E-001
[SD: 2.2835E+003+/-1492.9]		< : : : >
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
 11/3/15 6:02:04 AM

1112

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: 11/3/15 5:46:43 AM
 Measurement Date: 11/3/15 5:46:46 AM
 Elapsed Live Time: 900.0 seconds
 Elapsed Real Time: 909.7 seconds

Parameter Description [Mean +/- Std. Dev.]	Value	Deviation/Flags < LU : SD : UD : BS >
DAILY BKG CT RATE GE4 [SD: 8.7888E+000+/-164.30]	1.6344E+000	-4.3544E-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
 11/3/15 5:33:47 AM

1117

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: 11/3/15 5:17:39 AM
 Elapsed Live Time: 900.0 seconds
 Elapsed Real Time: 955.5 seconds

Parameter Description [Mean +/- Std. Dev.]	Value	Deviation/Flags < LU : SD : UD : BS >			
Peak centroid 59.54 keV Boundary Limits: [5.800E+001, 6.100E+001]	5.8694E+001	<	:	:	>
Peak centroid 661.65 keV Boundary Limits: [6.600E+002, 6.630E+002]	6.6108E+002	<	:	:	>
Peak centroid 1332.49 keV Boundary Limits: [1.331E+003, 1.334E+003]	1.3322E+003	<	:	:	>
Peak centroid 1836.1 keV Boundary Limits: [1.834E+003, 1.838E+003]	1.8361E+003	<	:	:	>
Peak FWHM Am-241 Boundary Limits: [5.000E-001, 3.000E+000]	2.2431E+000	<	:	:	>
Peak FWHM Cs-137 Boundary Limits: [5.000E-001, 3.000E+000]	2.7047E+000	<	:	:	>
Peak FWHM Co-60 Boundary Limits: [5.000E-001, 3.000E+000]	2.9002E+000	<	:	:	>
Peak FWHM Y-88 Boundary Limits: [5.000E-001, 3.500E+000]	2.8873E+000	<	:	:	>
Decay corrected activity Boundary Limits: [1.200E-001, 1.816E-001]	1.2370E+005	<	:	:	>
Decay corrected activity Boundary Limits: [4.918E-002, 7.377E-002] Trend Test: The last 9 samples exhibit a bias trend.	6.5476E+004	<	:	:	>
Decay corrected activity	9.7555E+004				

Boundary Limits: [7.892E-002, 1.184E-001] < : : : >
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	2.1039E+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
11/3/15 5:33:18 AM

Handwritten mark resembling '1113' with a flourish above it.

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: 11/3/15 5:17:32 AM
Elapsed Live Time: 900.0 seconds
Elapsed Real Time: 936.6 seconds

Table with 4 columns: Parameter Description, Value, Deviation/Flags, and a right-side flag. Rows include peak centroid data for 59.54 keV, 661.65 keV, 1332.49 ke, 1836.1 keV, and FWHM data for Am-241, Cs-137, Co-60, and Y-88. It also includes decay corrected activity data with trend test results.

Decay corrected activity 9.7760E+004
Boundary Limits: [7.972E-002, 1.120E-001] < : : : >
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 2.0654E+005
Boundary Limits: [1.713E-001, 2.569E-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
 11/3/15 5:33:04 AM

1117

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: 11/3/15 5:17:23 AM
 Elapsed Live Time: 900.0 seconds
 Elapsed Real Time: 926.8 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] Trend Test: The last 9 samples exhibit a bias trend.	6.0000E+001	< : : : >
Peak centroid 661.65 keV Boundary Limits: [6.600E+002, 6.640E+002] Trend Test: The last 9 samples exhibit a bias trend.	6.6145E+002	< : : : >
Peak centroid 1332.49 ke Boundary Limits: [1.331E+003, 1.334E+003]	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] Trend Test: The last 9 samples exhibit a bias trend.	1.3593E+000	< : : : >
Peak FWHM Cs-137 Boundary Limits: [5.000E-001, 3.000E+000] Trend Test: The last 9 samples exhibit a bias trend.	2.0949E+000	< : : : >
Peak FWHM Co-60 Boundary Limits: [5.000E-001, 3.000E+000]	2.1198E+000	< : : : >
Peak FWHM Y-88 Boundary Limits: [5.000E-001, 3.000E+000] Trend Test: The last 9 samples exhibit a bias trend.	2.7827E+000	< : : : >
Decay corrected activity Boundary Limits: [1.224E-001, 1.836E-001]	1.5569E+005	< : : : >

Trend Test: The last 9 samples exhibit a bias trend.

Decay corrected activity 6.4359E+004

Boundary Limits: [4.971E-002, 7.457E-002] < : : >

Trend Test: The last 9 samples exhibit a bias trend.

Decay corrected activity 1.0526E+005

Boundary Limits: [7.978E-002, 1.197E-001] < : : >

Trend Test: The last 9 samples exhibit a bias trend.

Decay corrected activity 2.1706E+005

Boundary Limits: [1.714E-001, 2.571E-001] < : : >

Trend Test: The last 9 samples exhibit a bias trend.

Flags Key: LU = Lower/Upper Bounds Test (Ab = Above, Be = Below)
SD = Sample Driven N-Sigma Test (In = Investigate, Ac = Action)
UD = User Driven N-Sigma Test (In = Investigate, Ac = Action)
BS = Measurement Bias Test (In = Investigate, Ac = Action)

 ***** G E N I E Q U A L I T Y A S S U R A N C E *****

Last Results Report
 11/3/15 5:32:54 AM

11/3

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: 11/3/15 5:17:15 AM
 Elapsed Live Time: 900.0 seconds
 Elapsed Real Time: 924.8 seconds

Parameter Description [Mean +/- Std. Dev.]	Value	Deviation/Flags < LU : SD : UD : BS >			
Peak centroid 59.54 keV Boundary Limits: [5.800E+001, 6.100E+001]	6.0000E+001	<	:	:	>
Peak centroid 661.65 keV Boundary Limits: [6.600E+002, 6.630E+002]	6.6202E+002	<	:	:	>
Peak centroid 1332.49 keV Boundary Limits: [1.331E+003, 1.334E+003]	1.3329E+003	<	:	:	>
Peak centroid 1836.01 keV Boundary Limits: [1.834E+003, 1.838E+003]	1.8365E+003	<	:	:	>
Peak FWHM Am-241 Boundary Limits: [5.000E-001, 3.000E+000]	1.2268E+000	<	:	:	>
Peak FWHM Cs-137 Boundary Limits: [5.000E-001, 3.000E+000]	1.5659E+000	<	:	:	>
Peak FWHM Co-60 Boundary Limits: [5.000E-001, 3.000E+000] Trend Test: The last 9 samples exhibit a bias trend.	2.0077E+000	<	:	:	>
Peak FWHM Y-90 Boundary Limits: [5.000E-001, 3.000E+000]	2.5946E+000	<	:	:	>
Decay corrected activity Boundary Limits: [1.170E-002, 1.754E-002]	1.4864E+004	<	:	:	>
Decay corrected activity Boundary Limits: [4.716E-003, 7.075E-003]	6.4158E+003	<	:	:	>
Decay corrected activity	1.0791E+004				

Boundary Limits: [7.572E-003, 1.136E-002] < : : : >

Decay corrected activity 1.9378E+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)