WESTON SOLUTIONS, INC.

PO# 0094759

STANDARD LEVEL IV
REPORT OF ANALYSIS

WORK ORDER #17-07091-OR

September 27, 2017

EBERLINE ANALYTICAL/OAK RIDGE LABORATORY
OAK RIDGE, TN

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Eberline Services – Oak Ridge Laboratory

LABORATORY DATA SUPPORT CHECKLIST

MP-001-3

Eberline Services Work Order # 17-07091

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

Date for Partial	Initials	Date	Initials	Checklist Items
		7-18-17	JED	Sample Log-In
		9-8-17	NJL	Data Compilation
		9/8/17	[illegible]	First Technical Data Review
		9-14-17	MLT	Second Technical Data Review
		9/18/17	[illegible]	Data Entry/Electronic Deliverable
		9/18/17	[illegible]	Case Narrative
		9/25/17	[illegible]	Electronic Deliverable Proof
		9/25/17	[illegible]	Samples Analyzed within Holding Time Yes? [✓] No? [ ]
		9/26/17	[illegible]	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: [illegible] 9/25/17

Laboratory Manager Date

Copy No. _____

Radiochemistry Services

SECTION I

CHAIN OF CUSTODY

USEPA

DateShipped: 7/17/2017

CarrierName: FedEx

AirbillNo:

CHAIN OF CUSTODY RECORD

Case #: 445

Contact Name: Patrick Buster

Contact Phone: 903-348-3917

17-07091

REC'D JUL 18 2017

No: 2-071417-134807-0007

Cooler #:

Lab: Eberline Analytical

Lab Phone: 865-481-0683

Lab #	Sample #	Analyses	Matrix	Collected	Sample Time	Numb Cont	Container	Lab QC	Sample_Remarks
	HTC-A06-S001-1824-01	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/16/2017	14:22	1	16 oz Poly Jar	N	Weight N/A
	HTC-A06-S001-2430-01	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/16/2017	14:20	1	16 oz Poly Jar	N	Weight N/A
	HTC-A06-S001-3036-01	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/16/2017	14:18	1	16 oz Poly Jar	N	Weight N/A
	HTC-A06-S001-3642-01	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/16/2017	14:16	1	16 oz Poly Jar	N	Weight N/A
	HTC-A06-S001-4248-01	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/16/2017	14:14	1	16 oz Poly Jar	N	Weight N/A
	HTC-A07-S001-0006-01	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/16/2017	15:14	1	16 oz Poly Jar	N	Weight N/A
	HTC-A07-S001-0612-01	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/16/2017	15:12	1	16 oz Poly Jar	N	Weight N/A
	HTC-A07-S001-0612-02	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/16/2017	15:12	1	16 oz Poly Jar	N	Weight N/A
	HTC-A07-S001-1218-01	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/16/2017	15:10	1	16 oz Poly Jar	N	Weight N/A
	HTC-A07-S001-1824-01	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/16/2017	15:08	1	16 oz Poly Jar	N	Weight N/A
	HTC-A07-S001-2430-01	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/16/2017	15:06	1	16 oz Poly Jar	N	Weight N/A
	HTC-A07-S001-3036-01	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/16/2017	15:04	1	16 oz Poly Jar	N	Weight N/A
	HTC-A07-S001-3642-01	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/16/2017	15:02	1	16 oz Poly Jar	N	Weight N/A
	HTC-A07-S001-4248-01	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/16/2017	15:00	1	16 oz Poly Jar	N	Weight N/A
456	HTC-A08-BKGD01-0006-01	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/15/2017	16:41	1	16 oz Poly Jar	Y	Weight N/A
	HTC-A08-BKGD01-0006-02	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/15/2017	16:41	1	16 oz Poly Jar	N	Weight N/A
	HTC-A08-BKGD01-0612-01	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/15/2017	16:38	1	16 oz Poly Jar	N	Weight N/A
7	HTC-A08-BKGD01-1218-01	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/15/2017	16:35	1	16 oz Poly Jar	N	Weight N/A
8	HTC-A08-BKGD01-1824-01	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/15/2017	16:32	1	16 oz Poly Jar	N	Weight N/A
9	HTC-A08-BKGD01-2430-01	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/15/2017	16:29	1	16 oz Poly Jar	N	Weight N/A
10	HTC-A08-BKGD01-3036-01	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/15/2017	16:26	1	16 oz Poly Jar	N	Weight N/A
11	HTC-A08-BKGD01-3642-01	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/15/2017	16:23	1	16 oz Poly Jar	N	Weight N/A

Special Instructions: Gamma Spec(EPA 901.0) analysis in jar "as is" for Ra-226 using 186keV peak for samples. From U decay chain "as is": Th-234, Pa-234 or Pa-234m, Pb-214, Bi-214. From the Th decay chain "as is": Ra-228 and/or Ac-228, Ra-224, Pb-212, Bi-212, Tl-208. For Gamma Spec (homogenized) after 21 day ingrowth: Ra-226 using Bi-214 and/or Pb-214. From U decay chain: Th-234, Pa-234 or Pa-234m. From Th decay chain: Ra-228 and/or Ac-228, Ra-224, Pb-212, Bi-212, Tl-208. Other radionuclides: Cs-137, K-40. Alpha Spec: Iso U (EPA 908.0 Modified): U-233/234, U-235/236, U-238. Iso Th (EPA 907.0 Modified): Th-230, 232, 228. No rocks should be removed, all samples to be pulverized.

SAMPLES TRANSFERRED FROM

CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
all Samples all Analysis	Chad Conway - Weston	7-17-17/1000	[signature]	0930 7-18-17	

0005

USEPA
DateShipped: 7/17/2017
CarrierName: FedEx
AirbillNo:

CHAIN OF CUSTODY RECORD
Case #: 445
Contact Name: Patrick Buster
Contact Phone: 903-348-3917

17-07091
REC'D JUL 18 2017

No: 2-071417-134807-0007
Cooler #:
Lab: Eberline Analytical
Lab Phone: 865-481-0683

Lab #	Sample #	Analyses	Matrix	Collected	Sample Time	Numb Cont	Container	Lab QC	Sample_Remarks
12	HTC-A08-BKGD01-4248-01	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/15/2017	16:20	1	16 oz Poly Jar	N	Weight N/A
13	HTC-A08-BKGD02-0006-01	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/15/2017	15:56	1	16 oz Poly Jar	N	Weight N/A
14	HTC-A08-BKGD02-0612-01	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/15/2017	15:53	1	16 oz Poly Jar	N	Weight N/A
15	HTC-A08-BKGD02-1218-01	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/15/2017	15:50	1	16 oz Poly Jar	N	Weight N/A
16	HTC-A08-BKGD02-1824-01	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/15/2017	15:47	1	16 oz Poly Jar	N	Weight N/A
17	HTC-A08-BKGD02-2430-01	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/15/2017	15:44	1	16 oz Poly Jar	N	Weight N/A
18	HTC-A08-BKGD02-3036-01	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/15/2017	15:41	1	16 oz Poly Jar	N	Weight N/A
19	HTC-A08-BKGD02-3642-01	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/15/2017	15:38	1	16 oz Poly Jar	N	Weight N/A
20	HTC-A08-BKGD02-4248-01	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/15/2017	15:35	1	16 oz Poly Jar	N	Weight N/A
	HTC-A08-S001-0006-01	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/16/2017	15:01	1	16 oz Poly Jar	N	Weight N/A
	HTC-A08-S001-0612-01	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/16/2017	14:58	1	16 oz Poly Jar	Y	Weight N/A
	HTC-A08-S001-0612-02	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/16/2017	14:58	1	16 oz Poly Jar	N	Weight N/A
	HTC-A08-S001-1218-01	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/15/2017	14:55	1	16 oz Poly Jar	N	Weight N/A
	HTC-A08-S001-1824-01	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/15/2017	14:52	1	16 oz Poly Jar	N	Weight N/A
	HTC-A08-S001-2430-01	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/15/2017	14:49	1	16 oz Poly Jar	N	Weight N/A
	HTC-A08-S001-3036-01	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/15/2017	14:46	1	16 oz Poly Jar	N	Weight N/A
	HTC-A08-S001-3642-01	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/15/2017	14:43	1	16 oz Poly Jar	N	Weight N/A
	HTC-A08-S001-4248-01	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/15/2017	14:40	1	16 oz Poly Jar	N	Weight N/A
	HTC-A09-S001-0006-01	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/16/2017	12:50	1	16 oz Poly Jar	Y	Weight N/A
	HTC-A09-S001-0006-02	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/16/2017	12:50	1	16 oz Poly Jar	N	Weight N/A
	HTC-A09-S001-0612-01	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/16/2017	12:48	1	16 oz Poly Jar	N	Weight N/A
	HTC-A09-S001-1218-01	Gamma Spec (Modified), Isotopic Th and U	Soil/Rock/Slag	5/16/2017	12:46	1	16 oz Poly Jar	N	Weight N/A

Special Instructions: Gamma Spec(EPA 901.0) analysis in jar "as is" for Ra-226 using 186keV peak for samples. From U decay chain "as is": Th-234, Pa-234 or Pa-234m, Pb-214, Bi-214. From the Th decay chain "as is": Ra-228 and/or Ac-228, Ra-224, Pb-212, Bi-212, Tl-208. For Gamma Spec (homogenized) after 21 day ingrowth: Ra-226 using Bi-214 and/or Pb-214. From U decay chain: Th-234, Pa-234 or Pa-234m. From Th decay chain: Ra-228 and/or Ac-228, Ra-224, Pb-212, Bi-212, Tl-208. Other radionuclides: Cs-137, K-40. Alpha Spec: Iso U (EPA 908.0 Modified): U-233/234, U-235/236, U-238. Iso Th (EPA 907.0 Modified): Th-230, 232, 228. No rocks should be removed, all samples to be pulverized.

SAMPLES TRANSFERRED FROM

CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
all Samples all Analysis	Chad Conway-Weston	7-17-17/1600	[signature]	0930 7-18-17	

0006

EBERLINE SERVICES Oak Ridge Laboratory	Internal Chain of Custody	Work Order #	17-07091
		Lab Deadline	8/10/2017
		Analysis	UUISO - Level 4
		Sample Matrix	Soil/Solid

Comments	Sample Fraction	HP 210 / 270 Detector Activity	Storage Location
Report on dry weight basis.	04	46	L1.5
	05	33	L1.5
	06	33	L1.5
	07	41	L1.5
	08	30	L1.5
	09	34	L1.5
	10	44	L1.5
	11	43	L1.5
	12	30	L1.5
Fraction 05 is MS of fraction 04. Fraction 06 is MSD of fraction 04.	13	47	L1.5
	14	38	L1.5
	15	47	L1.5
	16	38	L1.5
	17	40	L1.5
	18	32	L1.5
	19	33	L1.5
	20	43	L1.5

	Location (circle one)					Initials	Date
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room 1230	Key Sanj	8-2-17
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room 1040	Key Sanj	8-3-17
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room 11W	[illegible]	8-14-17
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	[illegible]	8/15/17 0900
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	[illegible]	5-15-17 0900
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	JPD	9/7/17 1335
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	KB	9/7/17 1343
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	KB	9/7/17 1736
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 #	17-07091
		Lab Deadline	8/10/2017
		Analysis	ThISO - Level 4
		Sample Matrix	Soil/Solid

Comments	Sample Fraction	HP 210 / 270 Detector Activity	Storage Location
Report on dry weight basis.	04	46	L1.5
	05	33	L1.5
	06	33	L1.5
	07	41	L1.5
	08	30	L1.5
	09	34	L1.5
	10	44	L1.5
	11	43	L1.5
	12	30	L1.5
Fraction 05 is MS of fraction 04. Fraction 06 is MSD of fraction 04.	13	47	L1.5
	14	38	L1.5
	15	47	L1.5
	16	38	L1.5
	17	40	L1.5
	18	32	L1.5
	19	33	L1.5
	20	43	L1.5

	Location (circle one)					Initials	Date
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room 1230	Key Sey	8-2-17
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room 1040	Key Sey	8-3-17
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room 1100	J Lachell	8-14-17
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	J Harvey	8/15/17 0900
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	[illegible]	8-15-17 0900
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	[illegible]	9-1-17 0952
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	[illegible]	
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	KD	9/1/17 1716
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 ANALYTICAL Oak Ridge Laboratory	Internal Chain of Custody	Work Order #	17-07091
		Lab Deadline	See Comments
		Analysis	Gamma - Level 4
		Sample Matrix	SO

Comments

Re-Analysis: 2Fractions 04 & 07-20 only: 21 day ingrowth: Report Ac228, Bi212, Cs137, K40, Pa234m, Pb212, Ra224, Ra226 from Bi214/Pb214, Ra228 from Ac228, Tl208, Th234 & positives. Report on dry weight basis.

~~Original Lab Deadline: 08/15/17~~ Exp 07/19/17
~~Rerun Lab Deadline: 08/15/17 Fractions 04 & 07-20 only.~~
~~Quick Count: Report Ac228, Bi212/214, Cs137, K40, Pa234m, Pb212/214, Ra224, Ra226 from 186 keV peak, Ra228 from Ac228, Tl208, Th234 & positives. Report on "AS IS" basis.~~

Sample Fraction	HP 210 / 270 Detector Activity	Storage Location
04	46	L1.5
07	41	L1.5
08	30	L1.5
09	34	L1.5
10	44	L1.5
11	43	L1.5
12	30	L1.5
13	47	L1.5
14	38	L1.5
15	47	L1.5
16	38	L1.5
17	40	L1.5
18	32	L1.5
19	33	L1.5
20	43	L1.5

	Location (circle one)					Technician Initials	
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room 1230	[illegible]	8-2-17
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room 1145	[illegible]	8-3-17
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room 1145	C	8/3/17
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	ICB	8/24/17 1428
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		

Printed: 7/19/2017 5:47 PM

SECTION II

SAMPLE ACKNOWLEDGEMENT

Client Name	Contract/PO	Project Type	Date Received	Required Turnaround Days	Eberline Services Work Order
Weston Solutions, Inc.	0094759	Environmental	07/18/2017	28	17-07091
Project Name	**Client WO**	**Sample Disp**	**Lab Deadline**	**Internal Deadline**	**Client Deadline**
94759	Case #445	H	08/10/2017	08/14/2017	08/15/2017

Internal ID	Client ID	Sample Date	Matrix	Storage	Gamma	ThISO	UUISO																					Ttl
01	LCS	07/19/17	SO	L1.5	X	X	X																					3
02	BLANK	07/19/17	SO	L1.5	X	X	X																					3
03	DUP	07/19/17	SO	L1.5	X	X	X																					3
04	HTC-A08-BKGD01-0006-01	05/15/17 16:41	SO	L1.5	X	X	X																					3
05	HTC-A08-BKGD01-0006-01 MS	05/15/17 16:41	SO	L1.5		X	X																					2
06	HTC-A08-BKGD01-0006-01 MSD	05/15/17 16:41	SO	L1.5		X	X																					2
07	HTC-A08-BKGD01-1218-01	05/15/17 16:35	SO	L1.5	X	X	X																					3
08	HTC-A08-BKGD01-1824-01	05/15/17 16:32	SO	L1.5	X	X	X																					3
09	HTC-A08-BKGD01-2430-01	05/15/17 16:29	SO	L1.5	X	X	X																					3
10	HTC-A08-BKGD01-3036-01	05/15/17 16:26	SO	L1.5	X	X	X																					3
11	HTC-A08-BKGD01-3642-01	05/15/17 16:23	SO	L1.5	X	X	X																					3
12	HTC-A08-BKGD01-4248-01	05/15/17 16:20	SO	L1.5	X	X	X																					3
13	HTC-A08-BKGD02-0006-01	05/15/17 15:56	SO	L1.5	X	X	X																					3
14	HTC-A08-BKGD02-0612-01	05/15/17 15:53	SO	L1.5	X	X	X																					3
15	HTC-A08-BKGD02-1218-01	05/15/17 15:50	SO	L1.5	X	X	X																					3
16	HTC-A08-BKGD02-1824-01	05/15/17 15:47	SO	L1.5	X	X	X																					3
17	HTC-A08-BKGD02-2430-01	05/15/17 15:44	SO	L1.5	X	X	X																					3
18	HTC-A08-BKGD02-3036-01	05/15/17 15:41	SO	L1.5	X	X	X																					3
19	HTC-A08-BKGD02-3642-01	05/15/17 15:38	SO	L1.5	X	X	X																					3
20	HTC-A08-BKGD02-4248-01	05/15/17 15:35	SO	L1.5	X	X	X																					3
		Totals Per Analysis (non QA samples)			15	17	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

EBERLINE SERVICES

Sample Log In Report

Oak Ridge Laboratory
601 Scarboro Rd.
Oak Ridge, TN 37830

Voice: (865) 481-0683
Fax: (865) 483-4621

Invoice	Accounts Payable Weston Solutions, Inc. 1090 King Georges Post Road Suite 201 Edison, NJ 08837	**Report Data**	Smita Sumbaly Weston Solutions, Inc. 1090 King Georges Post Rd Suite 201 Edison, NJ 08837
Voice	732-585-4425	*Voice*	732-585-4410
Fax		*Fax*	732-225-7037
Contact	Smita Sumbaly		
Voice	732-585-4410		
Fax	732-225-7037		

0011

Printed: 7/19/2017 5:43 PM

Eberline Services – Oak Ridge Laboratory

SAMPLE RECEIPT CHECKLIST
MP-001-2

WORK ORDER # 17-07091

SAMPLE MATRIX/MATRICES: (CIRCLE ONE OR BOTH)

AQUEOUS NON-AQUEOUS

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

WERE SAMPLES:

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

WERE CHAIN OF CUSTODY SEALS:

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

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

REMARKS: _____

SIGNATURE: [signature] DATE: 7-18-17

SECTION III

CASE NARRATIVE

EBERLINE SERVICES

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

EBS-OR-42707

September 27, 2017

Smita Sumbaly
Weston Solutions, Inc.
1090 King Georges Post Road, Suite 201
Edison, NJ 08837

CASE NARRATIVE
Work Order # 17-07091-OR

SAMPLE RECEIPT

This work order contains fifteen solid samples received 07/18/2017. These samples were analyzed for Isotopic Uranium, Isotopic Thorium and by Gamma Spectroscopy.

CLIENT ID	LAB ID	CLIENT ID	LAB ID
HTC-A08-BKGD01-0006-01	17-07091-04	HTC-A08-BKGD02-0006-01	17-07091-13
HTC-A08-BKGD01-0006-01 MS	17-07091-05	HTC-A08-BKGD02-0612-01	17-07091-14
HTC-A08-BKGD01-0006-01 MSD	17-07091-06	HTC-A08-BKGD02-1218-01	17-07091-15
HTC-A08-BKGD01-1218-01	17-07091-07	HTC-A08-BKGD02-1824-01	17-07091-16
HTC-A08-BKGD01-1824-01	17-07091-08	HTC-A08-BKGD02-2430-01	17-07091-17
HTC-A08-BKGD01-2430-01	17-07091-09	HTC-A08-BKGD02-3036-01	17-07091-18
HTC-A08-BKGD01-3036-01	17-07091-10	HTC-A08-BKGD02-3642-01	17-07091-19
HTC-A08-BKGD01-3642-01	17-07091-11	HTC-A08-BKGD02-4248-01	17-07091-20
HTC-A08-BKGD01-4248-01	17-07091-12		

ANALYTICAL METHODS

Isotopic Uranium was analyzed using EPA Method 908.0 Modified. Isotopic Thorium was analyzed using EPA Method 907.0 Modified. Gamma Spectroscopy was performed using EPA Method 901.1 Modified.

ANALYTICAL RESULTS

Combined Standard Uncertainty is reported at 2-sigma value.

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

SPECIAL CIRCUMSTANCES

Samples were dried and ground prior to analyses. Results are reported on a "dry weight" basis.

ANALYTICAL RESULTS CONTINUED

ISOTOPIC URANIUM

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

Samples demonstrated acceptable results for all Uranium determinations. The Uranium-233/234, Uranium-235/236 and Uranium-238 method blank demonstrated acceptable results. Chemical recovery was acceptable for all samples. Results for the Uranium-233/234, Uranium-235/236 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. Results for the Uranium-234 and Uranium-238 matrix spike and matrix spike duplicate 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 determinations. The Thorium-228, Thorium-230 and Thorium-232 method blank demonstrated acceptable results. Chemical recovery was acceptable for all samples. Results for the Thorium-228 duplicate demonstrated an acceptable relative percent difference and normalized difference. Results for the Thorium-230 and Thorium-232 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. Results for the Thorium-228, Thorium-230 and Thorium-232 matrix spike and matrix spike duplicate 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.

ANALYTICAL RESULTS CONTINUED

GAMMA SPECTROSCOPY CONTINUED

Initially samples were counted on an "as received basis" and preliminary data only was emailed. After the initial count, samples were dried, pulverized and sealed for Radon-222 ingrowth. Samples demonstrated acceptable results for all gamma emitting radionuclides as reported. Results for the method blank demonstrated acceptable results for all gamma emitting radionuclides as reported. Results for the Potassium-40, Radium-226 and Radium-228 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: 9/27/2017

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

SECTION IV

ANALYTICAL RESULTS SUMMARY

Eberline Analytical
Final Report of Analysis

Report To:

Smita Sumbaly
Weston Solutions, Inc.
1090 King Georges Post Rd Suite 201
Edison, NJ 08837

Work Order Details:

SDG:	**17-07091**
Purchase Order:	0094759
Analysis Category:	ENVIRONMENTAL
Sample Matrix:	SO

Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	Report Units
		21-day INGROWTH											
17-07091-01	LCS	KNOWN	07/19/17 00:00	7/18/2017	8/24/2017	17-07091	Cobalt-60	EPA 901.1 Modified	1.35E+02	5.27E+00			pCi/g
17-07091-01	LCS	KNOWN	07/19/17 00:00	7/18/2017	8/24/2017	17-07091	Cesium-137	EPA 901.1 Modified	8.44E+01	3.38E+00			pCi/g
17-07091-01	LCS	SPIKE	07/19/17 00:00	7/18/2017	8/24/2017	17-07091	Cobalt-60	EPA 901.1 Modified	1.22E+02	7.38E+00	9.67E+00	1.23E+00	pCi/g
17-07091-01	LCS	SPIKE	07/19/17 00:00	7/18/2017	8/24/2017	17-07091	Cesium-137	EPA 901.1 Modified	8.09E+01	9.89E+00	1.07E+01	1.61E+00	pCi/g
17-07091-02	MBL	BLANK	07/19/17 00:00	7/18/2017	8/24/2017	17-07091	Actinium-228	EPA 901.1 Modified	1.59E-03	1.22E-01	1.22E-01	1.80E-01	pCi/g
17-07091-02	MBL	BLANK	07/19/17 00:00	7/18/2017	8/24/2017	17-07091	Bismuth-212	EPA 901.1 Modified	6.39E-02	2.49E-01	2.49E-01	3.99E-01	pCi/g
17-07091-02	MBL	BLANK	07/19/17 00:00	7/18/2017	8/24/2017	17-07091	Bismuth-214	EPA 901.1 Modified	2.90E-02	5.85E-02	5.85E-02	9.82E-02	pCi/g
17-07091-02	MBL	BLANK	07/19/17 00:00	7/18/2017	8/24/2017	17-07091	Cesium-137	EPA 901.1 Modified	6.94E-03	3.33E-02	3.33E-02	5.67E-02	pCi/g
17-07091-02	MBL	BLANK	07/19/17 00:00	7/18/2017	8/24/2017	17-07091	Potassium-40	EPA 901.1 Modified	-1.19E-01	3.20E-01	3.20E-01	4.52E-01	pCi/g
17-07091-02	MBL	BLANK	07/19/17 00:00	7/18/2017	8/24/2017	17-07091	Protactinium-234m	EPA 901.1 Modified	2.17E+00	2.29E+00	2.30E+00	5.22E+00	pCi/g
17-07091-02	MBL	BLANK	07/19/17 00:00	7/18/2017	8/24/2017	17-07091	Lead-212	EPA 901.1 Modified	-7.69E-03	3.69E-02	3.69E-02	5.47E-02	pCi/g
17-07091-02	MBL	BLANK	07/19/17 00:00	7/18/2017	8/24/2017	17-07091	Lead-214	EPA 901.1 Modified	2.94E-02	5.06E-02	5.06E-02	8.56E-02	pCi/g
17-07091-02	MBL	BLANK	07/19/17 00:00	7/18/2017	8/24/2017	17-07091	Radium-224	EPA 901.1 Modified	2.40E-01	3.80E-01	3.80E-01	6.36E-01	pCi/g
17-07091-02	MBL	BLANK	07/19/17 00:00	7/18/2017	8/24/2017	17-07091	Radium-226	EPA 901.1 Modified	2.90E-02	5.85E-02	5.85E-02	9.82E-02	pCi/g
17-07091-02	MBL	BLANK	07/19/17 00:00	7/18/2017	8/24/2017	17-07091	Radium-228	EPA 901.1 Modified	1.59E-03	1.22E-01	1.22E-01	1.80E-01	pCi/g
17-07091-02	MBL	BLANK	07/19/17 00:00	7/18/2017	8/24/2017	17-07091	Thorium-234	EPA 901.1 Modified	6.17E-01	3.99E-01	4.01E-01	6.79E-01	pCi/g
17-07091-02	MBL	BLANK	07/19/17 00:00	7/18/2017	8/24/2017	17-07091	Thallium-208	EPA 901.1 Modified	1.55E-02	6.37E-02	6.37E-02	1.12E-01	pCi/g
17-07091-03	DUP	HTC-A08-BKGD01-0006-01	05/15/17 16:41	7/18/2017	8/24/2017	17-07091	Actinium-228	EPA 901.1 Modified	1.09E+00	3.21E-01	3.26E-01	9.45E-01	pCi/g
17-07091-03	DUP	HTC-A08-BKGD01-0006-01	05/15/17 16:41	7/18/2017	8/24/2017	17-07091	Bismuth-212	EPA 901.1 Modified	7.69E-01	5.56E-01	5.58E-01	8.70E-01	pCi/g
17-07091-03	DUP	HTC-A08-BKGD01-0006-01	05/15/17 16:41	7/18/2017	8/24/2017	17-07091	Bismuth-214	EPA 901.1 Modified	9.80E-01	1.92E-01	1.98E-01	4.97E-01	pCi/g
17-07091-03	DUP	HTC-A08-BKGD01-0006-01	05/15/17 16:41	7/18/2017	8/24/2017	17-07091	Cesium-137	EPA 901.1 Modified	1.78E-01	1.08E-01	1.09E-01	1.69E-01	pCi/g
17-07091-03	DUP	HTC-A08-BKGD01-0006-01	05/15/17 16:41	7/18/2017	8/24/2017	17-07091	Potassium-40	EPA 901.1 Modified	1.74E+01	2.45E+00	2.61E+00	1.07E+00	pCi/g
17-07091-03	DUP	HTC-A08-BKGD01-0006-01	05/15/17 16:41	7/18/2017	8/24/2017	17-07091	Protactinium-234m	EPA 901.1 Modified	5.00E+00	8.75E+00	8.76E+00	1.39E+01	pCi/g
17-07091-03	DUP	HTC-A08-BKGD01-0006-01	05/15/17 16:41	7/18/2017	8/24/2017	17-07091	Lead-212	EPA 901.1 Modified	1.38E+00	2.30E-01	2.40E-01	2.98E-01	pCi/g
17-07091-03	DUP	HTC-A08-BKGD01-0006-01	05/15/17 16:41	7/18/2017	8/24/2017	17-07091	Lead-214	EPA 901.1 Modified	8.72E-01	1.77E-01	1.83E-01	3.39E-01	pCi/g
17-07091-03	DUP	HTC-A08-BKGD01-0006-01	05/15/17 16:41	7/18/2017	8/24/2017	17-07091	Radium-224	EPA 901.1 Modified	1.26E+01	2.04E+00	2.14E+00	3.25E+00	pCi/g
17-07091-03	DUP	HTC-A08-BKGD01-0006-01	05/15/17 16:41	7/18/2017	8/24/2017	17-07091	Radium-226	EPA 901.1 Modified	9.80E-01	1.92E-01	1.98E-01	4.97E-01	pCi/g
17-07091-03	DUP	HTC-A08-BKGD01-0006-01	05/15/17 16:41	7/18/2017	8/24/2017	17-07091	Radium-228	EPA 901.1 Modified	1.09E+00	3.21E-01	3.26E-01	9.45E-01	pCi/g
17-07091-03	DUP	HTC-A08-BKGD01-0006-01	05/15/17 16:41	7/18/2017	8/24/2017	17-07091	Thorium-234	EPA 901.1 Modified	2.88E+00	1.84E+00	1.85E+00	3.03E+00	pCi/g
17-07091-03	DUP	HTC-A08-BKGD01-0006-01	05/15/17 16:41	7/18/2017	8/24/2017	17-07091	Thallium-208	EPA 901.1 Modified	1.11E+00	2.53E-01	2.60E-01	7.57E-02	pCi/g

0018

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

Eberline Analytical
Final Report of Analysis

Report To:

Smita Sumbaly
Weston Solutions, Inc.
1090 King Georges Post Rd Suite 201
Edison, NJ 08837

Work Order Details:

SDG:	**17-07091**
Purchase Order:	0094759
Analysis Category:	ENVIRONMENTAL
Sample Matrix:	SO

Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	Report Units
17-07091-04	DO	HTC-A08-BKGD01-0006-01	05/15/17 16:41	7/18/2017	8/24/2017	17-07091	Actinium-228	EPA 901.1 Modified	1.12E+00	2.91E-01	2.97E-01	6.06E-01	pCi/g
17-07091-04	DO	HTC-A08-BKGD01-0006-01	05/15/17 16:41	7/18/2017	8/24/2017	17-07091	Bismuth-212	EPA 901.1 Modified	5.12E-01	7.15E-01	7.15E-01	1.08E+00	pCi/g
17-07091-04	DO	HTC-A08-BKGD01-0006-01	05/15/17 16:41	7/18/2017	8/24/2017	17-07091	Bismuth-214	EPA 901.1 Modified	1.05E+00	3.11E-01	3.16E-01	4.98E-01	pCi/g
17-07091-04	DO	HTC-A08-BKGD01-0006-01	05/15/17 16:41	7/18/2017	8/24/2017	17-07091	Cesium-137	EPA 901.1 Modified	6.01E-02	9.88E-02	9.89E-02	1.48E-01	pCi/g
17-07091-04	DO	HTC-A08-BKGD01-0006-01	05/15/17 16:41	7/18/2017	8/24/2017	17-07091	Potassium-40	EPA 901.1 Modified	1.80E+01	2.58E+00	2.74E+00	1.53E+00	pCi/g
17-07091-04	DO	HTC-A08-BKGD01-0006-01	05/15/17 16:41	7/18/2017	8/24/2017	17-07091	Protactinium-234m	EPA 901.1 Modified	-6.60E+00	1.04E+01	1.04E+01	1.27E+01	pCi/g
17-07091-04	DO	HTC-A08-BKGD01-0006-01	05/15/17 16:41	7/18/2017	8/24/2017	17-07091	Lead-212	EPA 901.1 Modified	1.21E+00	2.02E-01	2.12E-01	2.50E-01	pCi/g
17-07091-04	DO	HTC-A08-BKGD01-0006-01	05/15/17 16:41	7/18/2017	8/24/2017	17-07091	Lead-214	EPA 901.1 Modified	9.54E-01	1.88E-01	1.95E-01	2.97E-01	pCi/g
17-07091-04	DO	HTC-A08-BKGD01-0006-01	05/15/17 16:41	7/18/2017	8/24/2017	17-07091	Radium-224	EPA 901.1 Modified	1.19E+01	1.92E+00	2.02E+00	3.12E+00	pCi/g
17-07091-04	DO	HTC-A08-BKGD01-0006-01	05/15/17 16:41	7/18/2017	8/24/2017	17-07091	Radium-226	EPA 901.1 Modified	1.05E+00	3.11E-01	3.16E-01	4.98E-01	pCi/g
17-07091-04	DO	HTC-A08-BKGD01-0006-01	05/15/17 16:41	7/18/2017	8/24/2017	17-07091	Radium-228	EPA 901.1 Modified	1.12E+00	2.91E-01	2.97E-01	6.06E-01	pCi/g
17-07091-04	DO	HTC-A08-BKGD01-0006-01	05/15/17 16:41	7/18/2017	8/24/2017	17-07091	Thorium-234	EPA 901.1 Modified	1.83E+00	1.35E+00	1.35E+00	2.06E+00	pCi/g
17-07091-04	DO	HTC-A08-BKGD01-0006-01	05/15/17 16:41	7/18/2017	8/24/2017	17-07091	Thallium-208	EPA 901.1 Modified	1.17E+00	2.40E-01	2.48E-01	7.57E-02	pCi/g
17-07091-07	TRG	HTC-A08-BKGD01-1218-01	05/15/17 16:35	7/18/2017	8/24/2017	17-07091	Actinium-228	EPA 901.1 Modified	1.02E+00	2.38E-01	2.43E-01	4.51E-01	pCi/g
17-07091-07	TRG	HTC-A08-BKGD01-1218-01	05/15/17 16:35	7/18/2017	8/24/2017	17-07091	Bismuth-212	EPA 901.1 Modified	8.25E-01	5.05E-01	5.07E-01	7.93E-01	pCi/g
17-07091-07	TRG	HTC-A08-BKGD01-1218-01	05/15/17 16:35	7/18/2017	8/24/2017	17-07091	Bismuth-214	EPA 901.1 Modified	9.04E-01	1.80E-01	1.86E-01	2.72E-01	pCi/g
17-07091-07	TRG	HTC-A08-BKGD01-1218-01	05/15/17 16:35	7/18/2017	8/24/2017	17-07091	Cesium-137	EPA 901.1 Modified	1.05E-02	3.09E-02	3.09E-02	9.17E-02	pCi/g
17-07091-07	TRG	HTC-A08-BKGD01-1218-01	05/15/17 16:35	7/18/2017	8/24/2017	17-07091	Potassium-40	EPA 901.1 Modified	1.97E+01	2.33E+00	2.54E+00	9.39E-01	pCi/g
17-07091-07	TRG	HTC-A08-BKGD01-1218-01	05/15/17 16:35	7/18/2017	8/24/2017	17-07091	Protactinium-234m	EPA 901.1 Modified	-1.16E-01	3.22E+00	3.22E+00	1.02E+01	pCi/g
17-07091-07	TRG	HTC-A08-BKGD01-1218-01	05/15/17 16:35	7/18/2017	8/24/2017	17-07091	Lead-212	EPA 901.1 Modified	1.22E+00	1.59E-01	1.71E-01	2.32E-01	pCi/g
17-07091-07	TRG	HTC-A08-BKGD01-1218-01	05/15/17 16:35	7/18/2017	8/24/2017	17-07091	Lead-214	EPA 901.1 Modified	9.01E-01	1.62E-01	1.69E-01	2.99E-01	pCi/g
17-07091-07	TRG	HTC-A08-BKGD01-1218-01	05/15/17 16:35	7/18/2017	8/24/2017	17-07091	Radium-224	EPA 901.1 Modified	1.62E+01	1.99E+00	2.16E+00	2.96E+00	pCi/g
17-07091-07	TRG	HTC-A08-BKGD01-1218-01	05/15/17 16:35	7/18/2017	8/24/2017	17-07091	Radium-226	EPA 901.1 Modified	9.04E-01	1.80E-01	1.86E-01	2.72E-01	pCi/g
17-07091-07	TRG	HTC-A08-BKGD01-1218-01	05/15/17 16:35	7/18/2017	8/24/2017	17-07091	Radium-228	EPA 901.1 Modified	1.02E+00	2.38E-01	2.43E-01	4.51E-01	pCi/g
17-07091-07	TRG	HTC-A08-BKGD01-1218-01	05/15/17 16:35	7/18/2017	8/24/2017	17-07091	Thorium-234	EPA 901.1 Modified	9.44E-01	1.26E+00	1.26E+00	1.65E+00	pCi/g
17-07091-07	TRG	HTC-A08-BKGD01-1218-01	05/15/17 16:35	7/18/2017	8/24/2017	17-07091	Thallium-208	EPA 901.1 Modified	1.08E+00	1.83E-01	1.91E-01	1.07E-01	pCi/g

0019

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

Eberline Analytical
Final Report of Analysis

Report To:

Smita Sumbaly
Weston Solutions, Inc.
1090 King Georges Post Rd Suite 201
Edison, NJ 08837

Work Order Details:

SDG:	**17-07091**
Purchase Order:	0094759
Analysis Category:	ENVIRONMENTAL
Sample Matrix:	SO

Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	Report Units
17-07091-08	TRG	HTC-A08-BKGD01-1824-01	05/15/17 16:32	7/18/2017	8/24/2017	17-07091	Actinium-228	EPA 901.1 Modified	1.38E+00	2.29E-01	2.39E-01	5.45E-01	pCi/g
17-07091-08	TRG	HTC-A08-BKGD01-1824-01	05/15/17 16:32	7/18/2017	8/24/2017	17-07091	Bismuth-212	EPA 901.1 Modified	9.40E-01	6.53E-01	6.55E-01	1.16E+00	pCi/g
17-07091-08	TRG	HTC-A08-BKGD01-1824-01	05/15/17 16:32	7/18/2017	8/24/2017	17-07091	Bismuth-214	EPA 901.1 Modified	1.04E+00	1.60E-01	1.69E-01	1.74E-01	pCi/g
17-07091-08	TRG	HTC-A08-BKGD01-1824-01	05/15/17 16:32	7/18/2017	8/24/2017	17-07091	Cesium-137	EPA 901.1 Modified	4.62E-02	6.61E-02	6.62E-02	1.05E-01	pCi/g
17-07091-08	TRG	HTC-A08-BKGD01-1824-01	05/15/17 16:32	7/18/2017	8/24/2017	17-07091	Potassium-40	EPA 901.1 Modified	2.36E+01	2.74E+00	2.99E+00	1.38E+00	pCi/g
17-07091-08	TRG	HTC-A08-BKGD01-1824-01	05/15/17 16:32	7/18/2017	8/24/2017	17-07091	Protactinium-234m	EPA 901.1 Modified	-2.28E+00	6.94E+00	6.94E+00	1.01E+01	pCi/g
17-07091-08	TRG	HTC-A08-BKGD01-1824-01	05/15/17 16:32	7/18/2017	8/24/2017	17-07091	Lead-212	EPA 901.1 Modified	1.43E+00	1.74E-01	1.89E-01	2.72E-01	pCi/g
17-07091-08	TRG	HTC-A08-BKGD01-1824-01	05/15/17 16:32	7/18/2017	8/24/2017	17-07091	Lead-214	EPA 901.1 Modified	1.09E+00	1.59E-01	1.69E-01	5.17E-01	pCi/g
17-07091-08	TRG	HTC-A08-BKGD01-1824-01	05/15/17 16:32	7/18/2017	8/24/2017	17-07091	Radium-224	EPA 901.1 Modified	3.97E+00	1.71E+00	1.72E+00	3.12E+00	pCi/g
17-07091-08	TRG	HTC-A08-BKGD01-1824-01	05/15/17 16:32	7/18/2017	8/24/2017	17-07091	Radium-226	EPA 901.1 Modified	1.04E+00	1.60E-01	1.69E-01	1.74E-01	pCi/g
17-07091-08	TRG	HTC-A08-BKGD01-1824-01	05/15/17 16:32	7/18/2017	8/24/2017	17-07091	Radium-228	EPA 901.1 Modified	1.38E+00	2.29E-01	2.39E-01	5.45E-01	pCi/g
17-07091-08	TRG	HTC-A08-BKGD01-1824-01	05/15/17 16:32	7/18/2017	8/24/2017	17-07091	Thorium-234	EPA 901.1 Modified	1.36E+00	1.29E+00	1.29E+00	2.15E+00	pCi/g
17-07091-08	TRG	HTC-A08-BKGD01-1824-01	05/15/17 16:32	7/18/2017	8/24/2017	17-07091	Thallium-208	EPA 901.1 Modified	1.04E+00	2.04E-01	2.11E-01	2.63E-01	pCi/g
17-07091-09	TRG	HTC-A08-BKGD01-2430-01	05/15/17 16:29	7/18/2017	8/24/2017	17-07091	Actinium-228	EPA 901.1 Modified	1.34E+00	2.18E-01	2.28E-01	3.48E-01	pCi/g
17-07091-09	TRG	HTC-A08-BKGD01-2430-01	05/15/17 16:29	7/18/2017	8/24/2017	17-07091	Bismuth-212	EPA 901.1 Modified	8.84E-01	5.65E-01	5.67E-01	9.06E-01	pCi/g
17-07091-09	TRG	HTC-A08-BKGD01-2430-01	05/15/17 16:29	7/18/2017	8/24/2017	17-07091	Bismuth-214	EPA 901.1 Modified	8.74E-01	1.49E-01	1.55E-01	2.02E-01	pCi/g
17-07091-09	TRG	HTC-A08-BKGD01-2430-01	05/15/17 16:29	7/18/2017	8/24/2017	17-07091	Cesium-137	EPA 901.1 Modified	4.62E-02	5.09E-02	5.09E-02	8.41E-02	pCi/g
17-07091-09	TRG	HTC-A08-BKGD01-2430-01	05/15/17 16:29	7/18/2017	8/24/2017	17-07091	Potassium-40	EPA 901.1 Modified	2.38E+01	2.69E+00	2.96E+00	7.75E-01	pCi/g
17-07091-09	TRG	HTC-A08-BKGD01-2430-01	05/15/17 16:29	7/18/2017	8/24/2017	17-07091	Protactinium-234m	EPA 901.1 Modified	1.05E+00	5.24E+00	5.24E+00	8.29E+00	pCi/g
17-07091-09	TRG	HTC-A08-BKGD01-2430-01	05/15/17 16:29	7/18/2017	8/24/2017	17-07091	Lead-212	EPA 901.1 Modified	1.25E+00	1.40E-01	1.54E-01	1.96E-01	pCi/g
17-07091-09	TRG	HTC-A08-BKGD01-2430-01	05/15/17 16:29	7/18/2017	8/24/2017	17-07091	Lead-214	EPA 901.1 Modified	9.52E-01	1.25E-01	1.34E-01	2.04E-01	pCi/g
17-07091-09	TRG	HTC-A08-BKGD01-2430-01	05/15/17 16:29	7/18/2017	8/24/2017	17-07091	Radium-224	EPA 901.1 Modified	4.00E+00	1.45E+00	1.47E+00	2.25E+00	pCi/g
17-07091-09	TRG	HTC-A08-BKGD01-2430-01	05/15/17 16:29	7/18/2017	8/24/2017	17-07091	Radium-226	EPA 901.1 Modified	8.74E-01	1.49E-01	1.55E-01	2.02E-01	pCi/g
17-07091-09	TRG	HTC-A08-BKGD01-2430-01	05/15/17 16:29	7/18/2017	8/24/2017	17-07091	Radium-228	EPA 901.1 Modified	1.34E+00	2.18E-01	2.28E-01	3.48E-01	pCi/g
17-07091-09	TRG	HTC-A08-BKGD01-2430-01	05/15/17 16:29	7/18/2017	8/24/2017	17-07091	Thorium-234	EPA 901.1 Modified	1.28E+00	8.04E-01	8.06E-01	1.29E+00	pCi/g
17-07091-09	TRG	HTC-A08-BKGD01-2430-01	05/15/17 16:29	7/18/2017	8/24/2017	17-07091	Thallium-208	EPA 901.1 Modified	1.00E+00	1.68E-01	1.76E-01	2.29E-01	pCi/g

0020

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

Eberline Analytical
Final Report of Analysis

Report To:

Smita Sumbaly
Weston Solutions, Inc.
1090 King Georges Post Rd Suite 201
Edison, NJ 08837

Work Order Details:

SDG:	**17-07091**
Purchase Order:	0094759
Analysis Category:	ENVIRONMENTAL
Sample Matrix:	SO

Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	Report Units
17-07091-10	TRG	HTC-A08-BKGD01-3036-01	05/15/17 16:26	7/18/2017	8/24/2017	17-07091	Actinium-228	EPA 901.1 Modified	1.27E+00	2.02E-01	2.13E-01	3.54E-01	pCi/g
17-07091-10	TRG	HTC-A08-BKGD01-3036-01	05/15/17 16:26	7/18/2017	8/24/2017	17-07091	Bismuth-212	EPA 901.1 Modified	7.47E-01	4.50E-01	4.52E-01	7.12E-01	pCi/g
17-07091-10	TRG	HTC-A08-BKGD01-3036-01	05/15/17 16:26	7/18/2017	8/24/2017	17-07091	Bismuth-214	EPA 901.1 Modified	9.42E-01	1.52E-01	1.59E-01	2.28E-01	pCi/g
17-07091-10	TRG	HTC-A08-BKGD01-3036-01	05/15/17 16:26	7/18/2017	8/24/2017	17-07091	Cesium-137	EPA 901.1 Modified	8.23E-03	4.86E-02	4.86E-02	7.31E-02	pCi/g
17-07091-10	TRG	HTC-A08-BKGD01-3036-01	05/15/17 16:26	7/18/2017	8/24/2017	17-07091	Potassium-40	EPA 901.1 Modified	2.57E+01	2.65E+00	2.96E+00	1.04E+00	pCi/g
17-07091-10	TRG	HTC-A08-BKGD01-3036-01	05/15/17 16:26	7/18/2017	8/24/2017	17-07091	Protactinium-234m	EPA 901.1 Modified	3.05E+00	4.81E+00	4.81E+00	7.88E+00	pCi/g
17-07091-10	TRG	HTC-A08-BKGD01-3036-01	05/15/17 16:26	7/18/2017	8/24/2017	17-07091	Lead-212	EPA 901.1 Modified	1.38E+00	1.50E-01	1.66E-01	2.60E-01	pCi/g
17-07091-10	TRG	HTC-A08-BKGD01-3036-01	05/15/17 16:26	7/18/2017	8/24/2017	17-07091	Lead-214	EPA 901.1 Modified	9.52E-01	1.51E-01	1.59E-01	2.29E-01	pCi/g
17-07091-10	TRG	HTC-A08-BKGD01-3036-01	05/15/17 16:26	7/18/2017	8/24/2017	17-07091	Radium-224	EPA 901.1 Modified	3.59E+00	1.24E+00	1.25E+00	2.94E+00	pCi/g
17-07091-10	TRG	HTC-A08-BKGD01-3036-01	05/15/17 16:26	7/18/2017	8/24/2017	17-07091	Radium-226	EPA 901.1 Modified	9.42E-01	1.52E-01	1.59E-01	2.28E-01	pCi/g
17-07091-10	TRG	HTC-A08-BKGD01-3036-01	05/15/17 16:26	7/18/2017	8/24/2017	17-07091	Radium-228	EPA 901.1 Modified	1.27E+00	2.02E-01	2.13E-01	3.54E-01	pCi/g
17-07091-10	TRG	HTC-A08-BKGD01-3036-01	05/15/17 16:26	7/18/2017	8/24/2017	17-07091	Thorium-234	EPA 901.1 Modified	2.06E+00	1.56E+00	1.56E+00	2.59E+00	pCi/g
17-07091-10	TRG	HTC-A08-BKGD01-3036-01	05/15/17 16:26	7/18/2017	8/24/2017	17-07091	Thallium-208	EPA 901.1 Modified	1.34E+00	2.40E-01	2.49E-01	2.76E-01	pCi/g
17-07091-11	TRG	HTC-A08-BKGD01-3642-01	05/15/17 16:23	7/18/2017	8/24/2017	17-07091	Actinium-228	EPA 901.1 Modified	1.32E+00	2.30E-01	2.40E-01	3.90E-01	pCi/g
17-07091-11	TRG	HTC-A08-BKGD01-3642-01	05/15/17 16:23	7/18/2017	8/24/2017	17-07091	Bismuth-212	EPA 901.1 Modified	1.01E+00	4.24E-01	4.27E-01	7.88E-01	pCi/g
17-07091-11	TRG	HTC-A08-BKGD01-3642-01	05/15/17 16:23	7/18/2017	8/24/2017	17-07091	Bismuth-214	EPA 901.1 Modified	1.02E+00	1.46E-01	1.55E-01	2.09E-01	pCi/g
17-07091-11	TRG	HTC-A08-BKGD01-3642-01	05/15/17 16:23	7/18/2017	8/24/2017	17-07091	Cesium-137	EPA 901.1 Modified	-3.68E-02	4.92E-02	4.93E-02	6.85E-02	pCi/g
17-07091-11	TRG	HTC-A08-BKGD01-3642-01	05/15/17 16:23	7/18/2017	8/24/2017	17-07091	Potassium-40	EPA 901.1 Modified	2.81E+01	2.95E+00	3.28E+00	1.30E+00	pCi/g
17-07091-11	TRG	HTC-A08-BKGD01-3642-01	05/15/17 16:23	7/18/2017	8/24/2017	17-07091	Protactinium-234m	EPA 901.1 Modified	5.75E+00	5.48E+00	5.49E+00	8.91E+00	pCi/g
17-07091-11	TRG	HTC-A08-BKGD01-3642-01	05/15/17 16:23	7/18/2017	8/24/2017	17-07091	Lead-212	EPA 901.1 Modified	1.45E+00	1.58E-01	1.75E-01	3.35E-01	pCi/g
17-07091-11	TRG	HTC-A08-BKGD01-3642-01	05/15/17 16:23	7/18/2017	8/24/2017	17-07091	Lead-214	EPA 901.1 Modified	1.24E+00	1.31E-01	1.46E-01	2.54E-01	pCi/g
17-07091-11	TRG	HTC-A08-BKGD01-3642-01	05/15/17 16:23	7/18/2017	8/24/2017	17-07091	Radium-224	EPA 901.1 Modified	5.03E+00	1.68E+00	1.70E+00	3.87E+00	pCi/g
17-07091-11	TRG	HTC-A08-BKGD01-3642-01	05/15/17 16:23	7/18/2017	8/24/2017	17-07091	Radium-226	EPA 901.1 Modified	1.02E+00	1.46E-01	1.55E-01	2.09E-01	pCi/g
17-07091-11	TRG	HTC-A08-BKGD01-3642-01	05/15/17 16:23	7/18/2017	8/24/2017	17-07091	Radium-228	EPA 901.1 Modified	1.32E+00	2.30E-01	2.40E-01	3.90E-01	pCi/g
17-07091-11	TRG	HTC-A08-BKGD01-3642-01	05/15/17 16:23	7/18/2017	8/24/2017	17-07091	Thorium-234	EPA 901.1 Modified	1.75E+00	1.19E+00	1.19E+00	1.61E+00	pCi/g
17-07091-11	TRG	HTC-A08-BKGD01-3642-01	05/15/17 16:23	7/18/2017	8/24/2017	17-07091	Thallium-208	EPA 901.1 Modified	1.24E+00	2.20E-01	2.29E-01	3.74E-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

EBERLINE SERVICES

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

Eberline Analytical
Final Report of Analysis

Report To:

Smita Sumbaly
Weston Solutions, Inc.
1090 King Georges Post Rd Suite 201
Edison, NJ 08837

Work Order Details:

SDG:	**17-07091**
Purchase Order:	0094759
Analysis Category:	ENVIRONMENTAL
Sample Matrix:	SO

Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	Report Units
17-07091-12	TRG	HTC-A08-BKGD01-4248-01	05/15/17 16:20	7/18/2017	8/24/2017	17-07091	Actinium-228	EPA 901.1 Modified	1.18E+00	1.87E-01	1.96E-01	3.26E-01	pCi/g
17-07091-12	TRG	HTC-A08-BKGD01-4248-01	05/15/17 16:20	7/18/2017	8/24/2017	17-07091	Bismuth-212	EPA 901.1 Modified	8.61E-01	3.12E-01	3.15E-01	4.59E-01	pCi/g
17-07091-12	TRG	HTC-A08-BKGD01-4248-01	05/15/17 16:20	7/18/2017	8/24/2017	17-07091	Bismuth-214	EPA 901.1 Modified	9.54E-01	1.53E-01	1.61E-01	2.30E-01	pCi/g
17-07091-12	TRG	HTC-A08-BKGD01-4248-01	05/15/17 16:20	7/18/2017	8/24/2017	17-07091	Cesium-137	EPA 901.1 Modified	-1.85E-02	5.07E-02	5.07E-02	7.34E-02	pCi/g
17-07091-12	TRG	HTC-A08-BKGD01-4248-01	05/15/17 16:20	7/18/2017	8/24/2017	17-07091	Potassium-40	EPA 901.1 Modified	2.37E+01	2.70E+00	2.97E+00	1.15E+00	pCi/g
17-07091-12	TRG	HTC-A08-BKGD01-4248-01	05/15/17 16:20	7/18/2017	8/24/2017	17-07091	Protactinium-234m	EPA 901.1 Modified	-9.57E-01	5.14E+00	5.14E+00	7.25E+00	pCi/g
17-07091-12	TRG	HTC-A08-BKGD01-4248-01	05/15/17 16:20	7/18/2017	8/24/2017	17-07091	Lead-212	EPA 901.1 Modified	1.08E+00	1.24E-01	1.36E-01	1.96E-01	pCi/g
17-07091-12	TRG	HTC-A08-BKGD01-4248-01	05/15/17 16:20	7/18/2017	8/24/2017	17-07091	Lead-214	EPA 901.1 Modified	8.65E-01	1.27E-01	1.35E-01	1.97E-01	pCi/g
17-07091-12	TRG	HTC-A08-BKGD01-4248-01	05/15/17 16:20	7/18/2017	8/24/2017	17-07091	Radium-224	EPA 901.1 Modified	2.40E+00	7.81E-01	7.90E-01	2.22E+00	pCi/g
17-07091-12	TRG	HTC-A08-BKGD01-4248-01	05/15/17 16:20	7/18/2017	8/24/2017	17-07091	Radium-226	EPA 901.1 Modified	9.54E-01	1.53E-01	1.61E-01	2.30E-01	**pCi/g**
17-07091-12	TRG	HTC-A08-BKGD01-4248-01	05/15/17 16:20	7/18/2017	8/24/2017	17-07091	Radium-228	EPA 901.1 Modified	1.18E+00	1.87E-01	1.96E-01	3.26E-01	**pCi/g**
17-07091-12	TRG	HTC-A08-BKGD01-4248-01	05/15/17 16:20	7/18/2017	8/24/2017	17-07091	Thorium-234	EPA 901.1 Modified	1.09E+00	7.96E-01	7.98E-01	1.25E+00	pCi/g
17-07091-12	TRG	HTC-A08-BKGD01-4248-01	05/15/17 16:20	7/18/2017	8/24/2017	17-07091	Thallium-208	EPA 901.1 Modified	9.23E-01	1.48E-01	1.55E-01	1.87E-01	pCi/g
17-07091-13	TRG	HTC-A08-BKGD02-0006-01	05/15/17 15:56	7/18/2017	8/24/2017	17-07091	Actinium-228	EPA 901.1 Modified	1.36E+00	3.18E-01	3.26E-01	6.16E-01	pCi/g
17-07091-13	TRG	HTC-A08-BKGD02-0006-01	05/15/17 15:56	7/18/2017	8/24/2017	17-07091	Bismuth-212	EPA 901.1 Modified	1.46E+00	7.36E-01	7.40E-01	1.11E+00	pCi/g
17-07091-13	TRG	HTC-A08-BKGD02-0006-01	05/15/17 15:56	7/18/2017	8/24/2017	17-07091	Bismuth-214	EPA 901.1 Modified	9.00E-01	1.89E-01	1.95E-01	2.39E-01	pCi/g
17-07091-13	TRG	HTC-A08-BKGD02-0006-01	05/15/17 15:56	7/18/2017	8/24/2017	17-07091	Cesium-137	EPA 901.1 Modified	1.73E-01	1.00E-01	1.01E-01	1.55E-01	pCi/g
17-07091-13	TRG	HTC-A08-BKGD02-0006-01	05/15/17 15:56	7/18/2017	8/24/2017	17-07091	Potassium-40	EPA 901.1 Modified	1.72E+01	2.62E+00	2.77E+00	2.21E+00	**pCi/g**
17-07091-13	TRG	HTC-A08-BKGD02-0006-01	05/15/17 15:56	7/18/2017	8/24/2017	17-07091	Protactinium-234m	EPA 901.1 Modified	-3.25E+00	1.01E+01	1.01E+01	1.36E+01	**pCi/g**
17-07091-13	TRG	HTC-A08-BKGD02-0006-01	05/15/17 15:56	7/18/2017	8/24/2017	17-07091	Lead-212	EPA 901.1 Modified	1.26E+00	1.96E-01	2.06E-01	2.38E-01	pCi/g
17-07091-13	TRG	HTC-A08-BKGD02-0006-01	05/15/17 15:56	7/18/2017	8/24/2017	17-07091	Lead-214	EPA 901.1 Modified	8.28E-01	1.79E-01	1.84E-01	2.87E-01	pCi/g
17-07091-13	TRG	HTC-A08-BKGD02-0006-01	05/15/17 15:56	7/18/2017	8/24/2017	17-07091	Radium-224	EPA 901.1 Modified	1.45E+01	1.93E+00	2.07E+00	3.06E+00	pCi/g
17-07091-13	TRG	HTC-A08-BKGD02-0006-01	05/15/17 15:56	7/18/2017	8/24/2017	17-07091	Radium-226	EPA 901.1 Modified	9.00E-01	1.89E-01	1.95E-01	2.39E-01	pCi/g
17-07091-13	TRG	HTC-A08-BKGD02-0006-01	05/15/17 15:56	7/18/2017	8/24/2017	17-07091	Radium-228	EPA 901.1 Modified	1.36E+00	3.18E-01	3.26E-01	6.16E-01	**pCi/g**
17-07091-13	TRG	HTC-A08-BKGD02-0006-01	05/15/17 15:56	7/18/2017	8/24/2017	17-07091	Thorium-234	EPA 901.1 Modified	3.21E+00	2.00E+00	2.01E+00	5.47E+00	pCi/g
17-07091-13	TRG	HTC-A08-BKGD02-0006-01	05/15/17 15:56	7/18/2017	8/24/2017	17-07091	Thallium-208	EPA 901.1 Modified	1.21E+00	2.67E-01	2.74E-01	3.90E-01	pCi/g

0022

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

Eberline Analytical
Final Report of Analysis

Report To:

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Work Order Details:

SDG:	**17-07091**
Purchase Order:	0094759
Analysis Category:	ENVIRONMENTAL
Sample Matrix:	SO

Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	Report Units
17-07091-14	TRG	HTC-A08-BKGD02-0612-01	05/15/17 15:53	7/18/2017	8/24/2017	17-07091	Actinium-228	EPA 901.1 Modified	1.27E+00	2.71E-01	2.78E-01	6.95E-01	pCi/g
17-07091-14	TRG	HTC-A08-BKGD02-0612-01	05/15/17 15:53	7/18/2017	8/24/2017	17-07091	Bismuth-212	EPA 901.1 Modified	2.54E-01	5.36E-01	5.36E-01	8.48E-01	pCi/g
17-07091-14	TRG	HTC-A08-BKGD02-0612-01	05/15/17 15:53	7/18/2017	8/24/2017	17-07091	Bismuth-214	EPA 901.1 Modified	9.86E-01	1.82E-01	1.89E-01	2.82E-01	pCi/g
17-07091-14	TRG	HTC-A08-BKGD02-0612-01	05/15/17 15:53	7/18/2017	8/24/2017	17-07091	Cesium-137	EPA 901.1 Modified	5.80E-03	6.77E-02	6.77E-02	1.02E-01	pCi/g
17-07091-14	TRG	HTC-A08-BKGD02-0612-01	05/15/17 15:53	7/18/2017	8/24/2017	17-07091	Potassium-40	EPA 901.1 Modified	1.89E+01	2.42E+00	2.60E+00	1.49E+00	pCi/g
17-07091-14	TRG	HTC-A08-BKGD02-0612-01	05/15/17 15:53	7/18/2017	8/24/2017	17-07091	Protactinium-234m	EPA 901.1 Modified	3.35E+00	6.50E+00	6.50E+00	1.07E+01	pCi/g
17-07091-14	TRG	HTC-A08-BKGD02-0612-01	05/15/17 15:53	7/18/2017	8/24/2017	17-07091	Lead-212	EPA 901.1 Modified	1.39E+00	1.82E-01	1.95E-01	2.84E-01	pCi/g
17-07091-14	TRG	HTC-A08-BKGD02-0612-01	05/15/17 15:53	7/18/2017	8/24/2017	17-07091	Lead-214	EPA 901.1 Modified	1.12E+00	1.87E-01	1.96E-01	2.65E-01	pCi/g
17-07091-14	TRG	HTC-A08-BKGD02-0612-01	05/15/17 15:53	7/18/2017	8/24/2017	17-07091	Radium-224	EPA 901.1 Modified	1.79E+01	2.20E+00	2.39E+00	3.28E+00	pCi/g
17-07091-14	TRG	HTC-A08-BKGD02-0612-01	05/15/17 15:53	7/18/2017	8/24/2017	17-07091	Radium-226	EPA 901.1 Modified	9.86E-01	1.82E-01	1.89E-01	2.82E-01	pCi/g
17-07091-14	TRG	HTC-A08-BKGD02-0612-01	05/15/17 15:53	7/18/2017	8/24/2017	17-07091	Radium-228	EPA 901.1 Modified	1.27E+00	2.71E-01	2.78E-01	6.95E-01	pCi/g
17-07091-14	TRG	HTC-A08-BKGD02-0612-01	05/15/17 15:53	7/18/2017	8/24/2017	17-07091	Thorium-234	EPA 901.1 Modified	3.53E+00	1.82E+00	1.83E+00	5.48E+00	pCi/g
17-07091-14	TRG	HTC-A08-BKGD02-0612-01	05/15/17 15:53	7/18/2017	8/24/2017	17-07091	Thallium-208	EPA 901.1 Modified	1.11E+00	2.08E-01	2.15E-01	2.28E-01	pCi/g
17-07091-15	TRG	HTC-A08-BKGD02-1218-01	05/15/17 15:50	7/18/2017	8/24/2017	17-07091	Actinium-228	EPA 901.1 Modified	1.19E+00	3.52E-01	3.57E-01	6.56E-01	pCi/g
17-07091-15	TRG	HTC-A08-BKGD02-1218-01	05/15/17 15:50	7/18/2017	8/24/2017	17-07091	Bismuth-212	EPA 901.1 Modified	9.48E-01	8.09E-01	8.10E-01	1.33E+00	pCi/g
17-07091-15	TRG	HTC-A08-BKGD02-1218-01	05/15/17 15:50	7/18/2017	8/24/2017	17-07091	Bismuth-214	EPA 901.1 Modified	1.24E+00	2.08E-01	2.17E-01	3.02E-01	pCi/g
17-07091-15	TRG	HTC-A08-BKGD02-1218-01	05/15/17 15:50	7/18/2017	8/24/2017	17-07091	Cesium-137	EPA 901.1 Modified	-3.00E-02	7.47E-02	7.47E-02	1.07E-01	pCi/g
17-07091-15	TRG	HTC-A08-BKGD02-1218-01	05/15/17 15:50	7/18/2017	8/24/2017	17-07091	Potassium-40	EPA 901.1 Modified	2.61E+01	2.97E+00	3.26E+00	1.13E+00	pCi/g
17-07091-15	TRG	HTC-A08-BKGD02-1218-01	05/15/17 15:50	7/18/2017	8/24/2017	17-07091	Protactinium-234m	EPA 901.1 Modified	4.67E+00	6.88E+00	6.88E+00	1.16E+01	pCi/g
17-07091-15	TRG	HTC-A08-BKGD02-1218-01	05/15/17 15:50	7/18/2017	8/24/2017	17-07091	Lead-212	EPA 901.1 Modified	1.78E+00	2.34E-01	2.51E-01	2.60E-01	pCi/g
17-07091-15	TRG	HTC-A08-BKGD02-1218-01	05/15/17 15:50	7/18/2017	8/24/2017	17-07091	Lead-214	EPA 901.1 Modified	1.23E+00	1.57E-01	1.69E-01	3.40E-01	pCi/g
17-07091-15	TRG	HTC-A08-BKGD02-1218-01	05/15/17 15:50	7/18/2017	8/24/2017	17-07091	Radium-224	EPA 901.1 Modified	2.09E+01	2.43E+00	2.66E+00	3.49E+00	pCi/g
17-07091-15	TRG	HTC-A08-BKGD02-1218-01	05/15/17 15:50	7/18/2017	8/24/2017	17-07091	Radium-226	EPA 901.1 Modified	1.24E+00	2.08E-01	2.17E-01	3.02E-01	pCi/g
17-07091-15	TRG	HTC-A08-BKGD02-1218-01	05/15/17 15:50	7/18/2017	8/24/2017	17-07091	Radium-228	EPA 901.1 Modified	1.19E+00	3.52E-01	3.57E-01	6.56E-01	pCi/g
17-07091-15	TRG	HTC-A08-BKGD02-1218-01	05/15/17 15:50	7/18/2017	8/24/2017	17-07091	Thorium-234	EPA 901.1 Modified	1.93E+00	1.37E+00	1.38E+00	1.86E+00	pCi/g
17-07091-15	TRG	HTC-A08-BKGD02-1218-01	05/15/17 15:50	7/18/2017	8/24/2017	17-07091	Thallium-208	EPA 901.1 Modified	1.11E+00	2.16E-01	2.24E-01	1.21E-01	pCi/g

0023

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

Eberline Analytical
Final Report of Analysis

Report To:

Smita Sumbaly
Weston Solutions, Inc.
1090 King Georges Post Rd Suite 201
Edison, NJ 08837

Work Order Details:

SDG:	**17-07091**
Purchase Order:	0094759
Analysis Category:	ENVIRONMENTAL
Sample Matrix:	SO

Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	Report Units
17-07091-16	TRG	HTC-A08-BKGD02-1824-01	05/15/17 15:47	7/18/2017	8/24/2017	17-07091	Actinium-228	EPA 901.1 Modified	1.43E+00	1.87E-01	2.01E-01	3.52E-01	pCi/g
17-07091-16	TRG	HTC-A08-BKGD02-1824-01	05/15/17 15:47	7/18/2017	8/24/2017	17-07091	Bismuth-212	EPA 901.1 Modified	1.26E+00	5.03E-01	5.08E-01	7.48E-01	pCi/g
17-07091-16	TRG	HTC-A08-BKGD02-1824-01	05/15/17 15:47	7/18/2017	8/24/2017	17-07091	Bismuth-214	EPA 901.1 Modified	1.12E+00	1.57E-01	1.67E-01	2.03E-01	pCi/g
17-07091-16	TRG	HTC-A08-BKGD02-1824-01	05/15/17 15:47	7/18/2017	8/24/2017	17-07091	Cesium-137	EPA 901.1 Modified	-9.58E-03	4.90E-02	4.90E-02	7.22E-02	pCi/g
17-07091-16	TRG	HTC-A08-BKGD02-1824-01	05/15/17 15:47	7/18/2017	8/24/2017	17-07091	Potassium-40	EPA 901.1 Modified	2.46E+01	2.56E+00	2.85E+00	1.10E+00	pCi/g
17-07091-16	TRG	HTC-A08-BKGD02-1824-01	05/15/17 15:47	7/18/2017	8/24/2017	17-07091	Protactinium-234m	EPA 901.1 Modified	1.22E+00	4.64E+00	4.64E+00	7.23E+00	pCi/g
17-07091-16	TRG	HTC-A08-BKGD02-1824-01	05/15/17 15:47	7/18/2017	8/24/2017	17-07091	Lead-212	EPA 901.1 Modified	1.41E+00	1.52E-01	1.68E-01	2.87E-01	pCi/g
17-07091-16	TRG	HTC-A08-BKGD02-1824-01	05/15/17 15:47	7/18/2017	8/24/2017	17-07091	Lead-214	EPA 901.1 Modified	1.15E+00	1.60E-01	1.71E-01	2.64E-01	pCi/g
17-07091-16	TRG	HTC-A08-BKGD02-1824-01	05/15/17 15:47	7/18/2017	8/24/2017	17-07091	Radium-224	EPA 901.1 Modified	4.50E+00	1.43E+00	1.45E+00	3.27E+00	pCi/g
17-07091-16	TRG	HTC-A08-BKGD02-1824-01	05/15/17 15:47	7/18/2017	8/24/2017	17-07091	Radium-226	EPA 901.1 Modified	1.12E+00	1.57E-01	1.67E-01	2.03E-01	pCi/g
17-07091-16	TRG	HTC-A08-BKGD02-1824-01	05/15/17 15:47	7/18/2017	8/24/2017	17-07091	Radium-228	EPA 901.1 Modified	1.43E+00	1.87E-01	2.01E-01	3.52E-01	pCi/g
17-07091-16	TRG	HTC-A08-BKGD02-1824-01	05/15/17 15:47	7/18/2017	8/24/2017	17-07091	Thorium-234	EPA 901.1 Modified	1.75E+00	1.18E+00	1.18E+00	1.59E+00	pCi/g
17-07091-16	TRG	HTC-A08-BKGD02-1824-01	05/15/17 15:47	7/18/2017	8/24/2017	17-07091	Thallium-208	EPA 901.1 Modified	1.29E+00	1.88E-01	1.99E-01	1.49E-01	pCi/g
17-07091-17	TRG	HTC-A08-BKGD02-2430-01	05/15/17 15:44	7/18/2017	8/24/2017	17-07091	Actinium-228	EPA 901.1 Modified	1.46E+00	1.98E-01	2.12E-01	4.99E-01	pCi/g
17-07091-17	TRG	HTC-A08-BKGD02-2430-01	05/15/17 15:44	7/18/2017	8/24/2017	17-07091	Bismuth-212	EPA 901.1 Modified	1.05E+00	4.47E-01	4.50E-01	6.60E-01	pCi/g
17-07091-17	TRG	HTC-A08-BKGD02-2430-01	05/15/17 15:44	7/18/2017	8/24/2017	17-07091	Bismuth-214	EPA 901.1 Modified	9.88E-01	1.53E-01	1.61E-01	2.03E-01	pCi/g
17-07091-17	TRG	HTC-A08-BKGD02-2430-01	05/15/17 15:44	7/18/2017	8/24/2017	17-07091	Cesium-137	EPA 901.1 Modified	1.49E-02	5.60E-02	5.60E-02	8.58E-02	pCi/g
17-07091-17	TRG	HTC-A08-BKGD02-2430-01	05/15/17 15:44	7/18/2017	8/24/2017	17-07091	Potassium-40	EPA 901.1 Modified	2.26E+01	2.64E+00	2.89E+00	1.28E+00	pCi/g
17-07091-17	TRG	HTC-A08-BKGD02-2430-01	05/15/17 15:44	7/18/2017	8/24/2017	17-07091	Protactinium-234m	EPA 901.1 Modified	6.18E+00	6.19E+00	6.20E+00	1.02E+01	pCi/g
17-07091-17	TRG	HTC-A08-BKGD02-2430-01	05/15/17 15:44	7/18/2017	8/24/2017	17-07091	Lead-212	EPA 901.1 Modified	1.51E+00	1.91E-01	2.06E-01	2.20E-01	pCi/g
17-07091-17	TRG	HTC-A08-BKGD02-2430-01	05/15/17 15:44	7/18/2017	8/24/2017	17-07091	Lead-214	EPA 901.1 Modified	1.09E+00	1.26E-01	1.38E-01	1.60E-01	pCi/g
17-07091-17	TRG	HTC-A08-BKGD02-2430-01	05/15/17 15:44	7/18/2017	8/24/2017	17-07091	Radium-224	EPA 901.1 Modified	9.56E+00	1.87E+00	1.93E+00	2.50E+00	pCi/g
17-07091-17	TRG	HTC-A08-BKGD02-2430-01	05/15/17 15:44	7/18/2017	8/24/2017	17-07091	Radium-226	EPA 901.1 Modified	9.88E-01	1.53E-01	1.61E-01	2.03E-01	pCi/g
17-07091-17	TRG	HTC-A08-BKGD02-2430-01	05/15/17 15:44	7/18/2017	8/24/2017	17-07091	Radium-228	EPA 901.1 Modified	1.46E+00	1.98E-01	2.12E-01	4.99E-01	pCi/g
17-07091-17	TRG	HTC-A08-BKGD02-2430-01	05/15/17 15:44	7/18/2017	8/24/2017	17-07091	Thorium-234	EPA 901.1 Modified	1.70E+00	8.12E-01	8.16E-01	1.32E+00	pCi/g
17-07091-17	TRG	HTC-A08-BKGD02-2430-01	05/15/17 15:44	7/18/2017	8/24/2017	17-07091	Thallium-208	EPA 901.1 Modified	1.05E+00	1.49E-01	1.59E-01	1.79E-01	pCi/g

0024

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

Eberline Analytical
Final Report of Analysis

Report To:

Smita Sumbaly
Weston Solutions, Inc.
1090 King Georges Post Rd Suite 201
Edison, NJ 08837

Work Order Details:

SDG:	**17-07091**
Purchase Order:	0094759
Analysis Category:	ENVIRONMENTAL
Sample Matrix:	SO

Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	Report Units
17-07091-18	TRG	HTC-A08-BKGD02-3036-01	05/15/17 15:41	7/18/2017	8/24/2017	17-07091	Actinium-228	EPA 901.1 Modified	1.23E+00	2.55E-01	2.62E-01	4.81E-01	pCi/g
17-07091-18	TRG	HTC-A08-BKGD02-3036-01	05/15/17 15:41	7/18/2017	8/24/2017	17-07091	Bismuth-212	EPA 901.1 Modified	7.12E-01	4.91E-01	4.92E-01	8.41E-01	pCi/g
17-07091-18	TRG	HTC-A08-BKGD02-3036-01	05/15/17 15:41	7/18/2017	8/24/2017	17-07091	Bismuth-214	EPA 901.1 Modified	9.91E-01	1.73E-01	1.80E-01	2.44E-01	pCi/g
17-07091-18	TRG	HTC-A08-BKGD02-3036-01	05/15/17 15:41	7/18/2017	8/24/2017	17-07091	Cesium-137	EPA 901.1 Modified	-1.05E-02	6.12E-02	6.12E-02	9.11E-02	pCi/g
17-07091-18	TRG	HTC-A08-BKGD02-3036-01	05/15/17 15:41	7/18/2017	8/24/2017	17-07091	Potassium-40	EPA 901.1 Modified	2.30E+01	2.58E+00	2.84E+00	8.79E-01	pCi/g
17-07091-18	TRG	HTC-A08-BKGD02-3036-01	05/15/17 15:41	7/18/2017	8/24/2017	17-07091	Protactinium-234m	EPA 901.1 Modified	-3.43E-01	2.61E+00	2.61E+00	1.01E+01	pCi/g
17-07091-18	TRG	HTC-A08-BKGD02-3036-01	05/15/17 15:41	7/18/2017	8/24/2017	17-07091	Lead-212	EPA 901.1 Modified	1.35E+00	1.67E-01	1.81E-01	2.37E-01	pCi/g
17-07091-18	TRG	HTC-A08-BKGD02-3036-01	05/15/17 15:41	7/18/2017	8/24/2017	17-07091	Lead-214	EPA 901.1 Modified	6.92E-01	1.75E-01	1.79E-01	3.33E-01	pCi/g
17-07091-18	TRG	HTC-A08-BKGD02-3036-01	05/15/17 15:41	7/18/2017	8/24/2017	17-07091	Radium-224	EPA 901.1 Modified	1.64E+01	2.02E+00	2.19E+00	2.96E+00	pCi/g
17-07091-18	TRG	HTC-A08-BKGD02-3036-01	05/15/17 15:41	7/18/2017	8/24/2017	17-07091	Radium-226	EPA 901.1 Modified	9.91E-01	1.73E-01	1.80E-01	2.44E-01	pCi/g
17-07091-18	TRG	HTC-A08-BKGD02-3036-01	05/15/17 15:41	7/18/2017	8/24/2017	17-07091	Radium-228	EPA 901.1 Modified	1.23E+00	2.55E-01	2.62E-01	4.81E-01	pCi/g
17-07091-18	TRG	HTC-A08-BKGD02-3036-01	05/15/17 15:41	7/18/2017	8/24/2017	17-07091	Thorium-234	EPA 901.1 Modified	2.93E+00	1.67E+00	1.68E+00	5.20E+00	pCi/g
17-07091-18	TRG	HTC-A08-BKGD02-3036-01	05/15/17 15:41	7/18/2017	8/24/2017	17-07091	Thallium-208	EPA 901.1 Modified	1.02E+00	1.97E-01	2.04E-01	2.40E-01	pCi/g
17-07091-19	TRG	HTC-A08-BKGD02-3642-01	05/15/17 15:38	7/18/2017	8/24/2017	17-07091	Actinium-228	EPA 901.1 Modified	7.75E-01	1.49E-01	1.54E-01	3.01E-01	pCi/g
17-07091-19	TRG	HTC-A08-BKGD02-3642-01	05/15/17 15:38	7/18/2017	8/24/2017	17-07091	Bismuth-212	EPA 901.1 Modified	7.35E-01	4.22E-01	4.24E-01	6.67E-01	pCi/g
17-07091-19	TRG	HTC-A08-BKGD02-3642-01	05/15/17 15:38	7/18/2017	8/24/2017	17-07091	Bismuth-214	EPA 901.1 Modified	7.90E-01	1.31E-01	1.37E-01	1.36E-01	pCi/g
17-07091-19	TRG	HTC-A08-BKGD02-3642-01	05/15/17 15:38	7/18/2017	8/24/2017	17-07091	Cesium-137	EPA 901.1 Modified	8.94E-03	3.61E-02	3.61E-02	5.61E-02	pCi/g
17-07091-19	TRG	HTC-A08-BKGD02-3642-01	05/15/17 15:38	7/18/2017	8/24/2017	17-07091	Potassium-40	EPA 901.1 Modified	1.81E+01	1.92E+00	2.13E+00	7.97E-01	pCi/g
17-07091-19	TRG	HTC-A08-BKGD02-3642-01	05/15/17 15:38	7/18/2017	8/24/2017	17-07091	Protactinium-234m	EPA 901.1 Modified	6.60E+00	3.62E+00	3.64E+00	6.75E+00	pCi/g
17-07091-19	TRG	HTC-A08-BKGD02-3642-01	05/15/17 15:38	7/18/2017	8/24/2017	17-07091	Lead-212	EPA 901.1 Modified	7.84E-01	9.75E-02	1.05E-01	1.88E-01	pCi/g
17-07091-19	TRG	HTC-A08-BKGD02-3642-01	05/15/17 15:38	7/18/2017	8/24/2017	17-07091	Lead-214	EPA 901.1 Modified	6.63E-01	9.30E-02	9.90E-02	1.49E-01	pCi/g
17-07091-19	TRG	HTC-A08-BKGD02-3642-01	05/15/17 15:38	7/18/2017	8/24/2017	17-07091	Radium-224	EPA 901.1 Modified	2.02E+00	8.84E-01	8.90E-01	2.13E+00	pCi/g
17-07091-19	TRG	HTC-A08-BKGD02-3642-01	05/15/17 15:38	7/18/2017	8/24/2017	17-07091	Radium-226	EPA 901.1 Modified	7.90E-01	1.31E-01	1.37E-01	1.36E-01	pCi/g
17-07091-19	TRG	HTC-A08-BKGD02-3642-01	05/15/17 15:38	7/18/2017	8/24/2017	17-07091	Radium-228	EPA 901.1 Modified	7.75E-01	1.49E-01	1.54E-01	3.01E-01	pCi/g
17-07091-19	TRG	HTC-A08-BKGD02-3642-01	05/15/17 15:38	7/18/2017	8/24/2017	17-07091	Thorium-234	EPA 901.1 Modified	1.25E+00	1.06E+00	1.06E+00	1.76E+00	pCi/g
17-07091-19	TRG	HTC-A08-BKGD02-3642-01	05/15/17 15:38	7/18/2017	8/24/2017	17-07091	Thallium-208	EPA 901.1 Modified	7.79E-01	1.17E-01	1.23E-01	8.56E-02	pCi/g

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

EBERLINE SERVICES

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

Eberline Analytical
Final Report of Analysis

Report To:

Smita Sumbaly
Weston Solutions, Inc.
1090 King Georges Post Rd Suite 201
Edison, NJ 08837

Work Order Details:

SDG:	**17-07091**
Purchase Order:	0094759
Analysis Category:	ENVIRONMENTAL
Sample Matrix:	SO

Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	Report Units
17-07091-20	TRG	HTC-A08-BKGD02-4248-01	05/15/17 15:35	7/18/2017	8/24/2017	17-07091	Actinium-228	EPA 901.1 Modified	6.32E-01	1.33E-01	1.37E-01	4.37E-01	pCi/g
17-07091-20	TRG	HTC-A08-BKGD02-4248-01	05/15/17 15:35	7/18/2017	8/24/2017	17-07091	Bismuth-212	EPA 901.1 Modified	5.64E-01	4.19E-01	4.20E-01	6.78E-01	pCi/g
17-07091-20	TRG	HTC-A08-BKGD02-4248-01	05/15/17 15:35	7/18/2017	8/24/2017	17-07091	Bismuth-214	EPA 901.1 Modified	6.26E-01	9.60E-02	1.01E-01	1.24E-01	pCi/g
17-07091-20	TRG	HTC-A08-BKGD02-4248-01	05/15/17 15:35	7/18/2017	8/24/2017	17-07091	Cesium-137	EPA 901.1 Modified	-5.09E-03	3.98E-02	3.98E-02	5.90E-02	pCi/g
17-07091-20	TRG	HTC-A08-BKGD02-4248-01	05/15/17 15:35	7/18/2017	8/24/2017	17-07091	Potassium-40	EPA 901.1 Modified	1.43E+01	1.73E+00	1.88E+00	6.40E-01	pCi/g
17-07091-20	TRG	HTC-A08-BKGD02-4248-01	05/15/17 15:35	7/18/2017	8/24/2017	17-07091	Protactinium-234m	EPA 901.1 Modified	8.30E-01	3.63E+00	3.63E+00	5.83E+00	pCi/g
17-07091-20	TRG	HTC-A08-BKGD02-4248-01	05/15/17 15:35	7/18/2017	8/24/2017	17-07091	Lead-212	EPA 901.1 Modified	6.63E-01	8.71E-02	9.35E-02	1.56E-01	pCi/g
17-07091-20	TRG	HTC-A08-BKGD02-4248-01	05/15/17 15:35	7/18/2017	8/24/2017	17-07091	Lead-214	EPA 901.1 Modified	7.40E-01	1.00E-01	1.07E-01	1.38E-01	pCi/g
17-07091-20	TRG	HTC-A08-BKGD02-4248-01	05/15/17 15:35	7/18/2017	8/24/2017	17-07091	Radium-224	EPA 901.1 Modified	4.86E+00	1.33E+00	1.36E+00	1.79E+00	pCi/g
17-07091-20	TRG	HTC-A08-BKGD02-4248-01	05/15/17 15:35	7/18/2017	8/24/2017	17-07091	Radium-226	EPA 901.1 Modified	6.26E-01	9.60E-02	1.01E-01	1.24E-01	pCi/g
17-07091-20	TRG	HTC-A08-BKGD02-4248-01	05/15/17 15:35	7/18/2017	8/24/2017	17-07091	Radium-228	EPA 901.1 Modified	6.32E-01	1.33E-01	1.37E-01	4.37E-01	pCi/g
17-07091-20	TRG	HTC-A08-BKGD02-4248-01	05/15/17 15:35	7/18/2017	8/24/2017	17-07091	Thorium-234	EPA 901.1 Modified	7.18E-01	6.15E-01	6.17E-01	9.68E-01	pCi/g
17-07091-20	TRG	HTC-A08-BKGD02-4248-01	05/15/17 15:35	7/18/2017	8/24/2017	17-07091	Thallium-208	EPA 901.1 Modified	6.13E-01	1.20E-01	1.24E-01	1.39E-01	pCi/g
17-07091-01	LCS	KNOWN	07/19/17 00:00	7/18/2017	9/1/2017	17-07091	Thorium-228	EPA 907.0 Modified	5.02E+00	1.81E-01			pCi/g
17-07091-01	LCS	SPIKE	07/19/17 00:00	7/18/2017	9/1/2017	17-07091	Thorium-228	EPA 907.0 Modified	5.98E+00	1.07E+00	1.21E+00	1.01E-01	pCi/g
17-07091-02	MBL	BLANK	07/19/17 00:00	7/18/2017	9/1/2017	17-07091	Thorium-228	EPA 907.0 Modified	3.80E-02	8.31E-02	8.32E-02	1.58E-01	pCi/g
17-07091-03	DUP	HTC-A08-BKGD01-0006-01	05/15/17 16:41	7/18/2017	9/1/2017	17-07091	Thorium-228	EPA 907.0 Modified	5.58E-01	2.06E-01	2.13E-01	9.99E-02	pCi/g
17-07091-04	DMSO	HTC-A08-BKGD01-0006-01	05/15/17 16:41	7/18/2017	9/1/2017	17-07091	Thorium-228	EPA 907.0 Modified	5.03E-01	2.10E-01	2.16E-01	1.13E-01	pCi/g
17-07091-05	MS	HTC-A08-BKGD01-0006-01 MS	05/15/17 16:41	7/18/2017	9/1/2017	17-07091	Thorium-228	EPA 907.0 Modified	9.13E+00	1.76E+00	1.96E+00	1.12E-01	pCi/g
17-07091-06	MSD	HTC-A08-BKGD01-0006-01 MSD	05/15/17 16:41	7/18/2017	9/1/2017	17-07091	Thorium-228	EPA 907.0 Modified	8.05E+00	1.51E+00	1.69E+00	9.35E-02	pCi/g
17-07091-07	TRG	HTC-A08-BKGD01-1218-01	05/15/17 16:35	7/18/2017	9/1/2017	17-07091	Thorium-228	EPA 907.0 Modified	1.36E+00	3.62E-01	3.84E-01	1.04E-01	pCi/g
17-07091-08	TRG	HTC-A08-BKGD01-1824-01	05/15/17 16:32	7/18/2017	9/1/2017	17-07091	Thorium-228	EPA 907.0 Modified	1.57E+00	4.38E-01	4.63E-01	1.21E-01	pCi/g
17-07091-09	TRG	HTC-A08-BKGD01-2430-01	05/15/17 16:29	7/18/2017	9/1/2017	17-07091	Thorium-228	EPA 907.0 Modified	1.37E+00	3.50E-01	3.73E-01	8.38E-02	pCi/g
17-07091-10	TRG	HTC-A08-BKGD01-3036-01	05/15/17 16:26	7/18/2017	9/1/2017	17-07091	Thorium-228	EPA 907.0 Modified	1.41E+00	3.74E-01	3.97E-01	1.34E-01	pCi/g
17-07091-11	TRG	HTC-A08-BKGD01-3642-01	05/15/17 16:23	7/18/2017	9/1/2017	17-07091	Thorium-228	EPA 907.0 Modified	1.30E+00	3.62E-01	3.82E-01	1.02E-01	pCi/g
17-07091-12	TRG	HTC-A08-BKGD01-4248-01	05/15/17 16:20	7/18/2017	9/1/2017	17-07091	Thorium-228	EPA 907.0 Modified	1.53E+00	3.98E-01	4.23E-01	1.26E-01	pCi/g
17-07091-13	TRG	HTC-A08-BKGD02-0006-01	05/15/17 15:56	7/18/2017	9/1/2017	17-07091	Thorium-228	EPA 907.0 Modified	1.02E+00	2.75E-01	2.91E-01	6.73E-02	pCi/g
17-07091-14	TRG	HTC-A08-BKGD02-0612-01	05/15/17 15:53	7/18/2017	9/1/2017	17-07091	Thorium-228	EPA 907.0 Modified	1.18E+00	3.42E-01	3.60E-01	1.13E-01	pCi/g
17-07091-15	TRG	HTC-A08-BKGD02-1218-01	05/15/17 15:50	7/18/2017	9/1/2017	17-07091	Thorium-228	EPA 907.0 Modified	1.38E+00	3.80E-01	4.02E-01	1.17E-01	pCi/g
17-07091-16	TRG	HTC-A08-BKGD02-1824-01	05/15/17 15:47	7/18/2017	9/1/2017	17-07091	Thorium-228	EPA 907.0 Modified	1.25E+00	3.53E-01	3.72E-01	1.01E-01	pCi/g
17-07091-17	TRG	HTC-A08-BKGD02-2430-01	05/15/17 15:44	7/18/2017	9/1/2017	17-07091	Thorium-228	EPA 907.0 Modified	1.40E+00	3.87E-01	4.09E-01	1.43E-01	pCi/g
17-07091-18	TRG	HTC-A08-BKGD02-3036-01	05/15/17 15:41	7/18/2017	9/1/2017	17-07091	Thorium-228	EPA 907.0 Modified	1.50E+00	5.12E-01	5.32E-01	1.80E-01	pCi/g
17-07091-19	TRG	HTC-A08-BKGD02-3642-01	05/15/17 15:38	7/18/2017	9/1/2017	17-07091	Thorium-228	EPA 907.0 Modified	7.65E-01	2.30E-01	2.41E-01	9.15E-02	pCi/g
17-07091-20	TRG	HTC-A08-BKGD02-4248-01	05/15/17 15:35	7/18/2017	9/1/2017	17-07091	Thorium-228	EPA 907.0 Modified	7.92E-01	2.74E-01	2.84E-01	1.22E-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

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Eberline Analytical
Final Report of Analysis

Report To:
Smita Sumbaly
Weston Solutions, Inc.
1090 King Georges Post Rd Suite 201
Edison, NJ 08837

Work Order Details:
SDG: **17-07091**
Purchase Order: 0094759
Analysis Category: ENVIRONMENTAL
Sample Matrix: SO

Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	Report Units
17-07091-01	LCS	KNOWN	07/19/17 00:00	7/18/2017	9/1/2017	17-07091	Thorium-230	EPA 907.0 Modified	5.43E+00	1.47E-01			pCi/g
17-07091-01	LCS	SPIKE	07/19/17 00:00	7/18/2017	9/1/2017	17-07091	Thorium-230	EPA 907.0 Modified	6.47E+00	1.15E+00	1.40E+00	1.27E-01	pCi/g
17-07091-02	MBL	BLANK	07/19/17 00:00	7/18/2017	9/1/2017	17-07091	Thorium-230	EPA 907.0 Modified	9.53E-02	1.04E-01	1.05E-01	1.55E-01	pCi/g
17-07091-03	DUP	HTC-A08-BKGD01-0006-01	05/15/17 16:41	7/18/2017	9/1/2017	17-07091	Thorium-230	EPA 907.0 Modified	4.81E-01	1.80E-01	1.89E-01	7.68E-02	pCi/g
17-07091-04	DMSO	HTC-A08-BKGD01-0006-01	05/15/17 16:41	7/18/2017	9/1/2017	17-07091	Thorium-230	EPA 907.0 Modified	3.28E-01	1.57E-01	1.62E-01	9.11E-02	pCi/g
17-07091-05	MS	HTC-A08-BKGD01-0006-01 MS	05/15/17 16:41	7/18/2017	9/1/2017	17-07091	Thorium-230	EPA 907.0 Modified	7.97E+00	1.54E+00	1.83E+00	8.03E-02	pCi/g
17-07091-06	MSD	HTC-A08-BKGD01-0006-01 MSD	05/15/17 16:41	7/18/2017	9/1/2017	17-07091	Thorium-230	EPA 907.0 Modified	6.67E+00	1.26E+00	1.50E+00	5.85E-02	pCi/g
17-07091-07	TRG	HTC-A08-BKGD01-1218-01	05/15/17 16:35	7/18/2017	9/1/2017	17-07091	Thorium-230	EPA 907.0 Modified	1.01E+00	2.85E-01	3.11E-01	8.98E-02	pCi/g
17-07091-08	TRG	HTC-A08-BKGD01-1824-01	05/15/17 16:32	7/18/2017	9/1/2017	17-07091	Thorium-230	EPA 907.0 Modified	1.23E+00	3.56E-01	3.88E-01	6.88E-02	pCi/g
17-07091-09	TRG	HTC-A08-BKGD01-2430-01	05/15/17 16:29	7/18/2017	9/1/2017	17-07091	Thorium-230	EPA 907.0 Modified	1.58E+00	3.74E-01	4.22E-01	6.01E-02	pCi/g
17-07091-10	TRG	HTC-A08-BKGD01-3036-01	05/15/17 16:26	7/18/2017	9/1/2017	17-07091	Thorium-230	EPA 907.0 Modified	1.12E+00	3.08E-01	3.38E-01	9.04E-02	pCi/g
17-07091-11	TRG	HTC-A08-BKGD01-3642-01	05/15/17 16:23	7/18/2017	9/1/2017	17-07091	Thorium-230	EPA 907.0 Modified	1.16E+00	3.23E-01	3.53E-01	7.66E-02	pCi/g
17-07091-12	TRG	HTC-A08-BKGD01-4248-01	05/15/17 16:20	7/18/2017	9/1/2017	17-07091	Thorium-230	EPA 907.0 Modified	9.02E-01	2.68E-01	2.91E-01	9.80E-02	pCi/g
17-07091-13	TRG	HTC-A08-BKGD02-0006-01	05/15/17 15:56	7/18/2017	9/1/2017	17-07091	Thorium-230	EPA 907.0 Modified	9.12E-01	2.46E-01	2.71E-01	6.90E-02	pCi/g
17-07091-14	TRG	HTC-A08-BKGD02-0612-01	05/15/17 15:53	7/18/2017	9/1/2017	17-07091	Thorium-230	EPA 907.0 Modified	1.11E+00	3.17E-01	3.46E-01	8.34E-02	pCi/g
17-07091-15	TRG	HTC-A08-BKGD02-1218-01	05/15/17 15:50	7/18/2017	9/1/2017	17-07091	Thorium-230	EPA 907.0 Modified	1.36E+00	3.64E-01	4.01E-01	1.02E-01	pCi/g
17-07091-16	TRG	HTC-A08-BKGD02-1824-01	05/15/17 15:47	7/18/2017	9/1/2017	17-07091	Thorium-230	EPA 907.0 Modified	1.18E+00	3.27E-01	3.58E-01	9.91E-02	pCi/g
17-07091-17	TRG	HTC-A08-BKGD02-2430-01	05/15/17 15:44	7/18/2017	9/1/2017	17-07091	Thorium-230	EPA 907.0 Modified	1.10E+00	3.17E-01	3.45E-01	1.26E-01	pCi/g
17-07091-18	TRG	HTC-A08-BKGD02-3036-01	05/15/17 15:41	7/18/2017	9/1/2017	17-07091	Thorium-230	EPA 907.0 Modified	8.91E-01	3.49E-01	3.66E-01	1.38E-01	pCi/g
17-07091-19	TRG	HTC-A08-BKGD02-3642-01	05/15/17 15:38	7/18/2017	9/1/2017	17-07091	Thorium-230	EPA 907.0 Modified	6.32E-01	1.96E-01	2.11E-01	7.93E-02	pCi/g
17-07091-20	TRG	HTC-A08-BKGD02-4248-01	05/15/17 15:35	7/18/2017	9/1/2017	17-07091	Thorium-230	EPA 907.0 Modified	7.59E-01	2.57E-01	2.73E-01	1.09E-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

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

Eberline Analytical
Final Report of Analysis

Report To:

Smita Sumbaly
Weston Solutions, Inc.
1090 King Georges Post Rd Suite 201
Edison, NJ 08837

Work Order Details:

SDG:	**17-07091**
Purchase Order:	0094759
Analysis Category:	ENVIRONMENTAL
Sample Matrix:	SO

Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	Report Units
17-07091-01	LCS	KNOWN	07/19/17 00:00	7/18/2017	9/1/2017	17-07091	Thorium-232	EPA 907.0 Modified	5.02E+00	1.81E-01			pCi/g
17-07091-01	LCS	SPIKE	07/19/17 00:00	7/18/2017	9/1/2017	17-07091	Thorium-232	EPA 907.0 Modified	5.88E+00	1.06E+00	1.18E+00	1.15E-01	pCi/g
17-07091-02	MBL	BLANK	07/19/17 00:00	7/18/2017	9/1/2017	17-07091	Thorium-232	EPA 907.0 Modified	4.76E-02	7.32E-02	7.33E-02	1.23E-01	pCi/g
17-07091-03	DUP	HTC-A08-BKGD01-0006-01	05/15/17 16:41	7/18/2017	9/1/2017	17-07091	Thorium-232	EPA 907.0 Modified	5.53E-01	1.95E-01	2.01E-01	6.50E-02	pCi/g
17-07091-04	DMSO	HTC-A08-BKGD01-0006-01	05/15/17 16:41	7/18/2017	9/1/2017	17-07091	Thorium-232	EPA 907.0 Modified	3.20E-01	1.52E-01	1.55E-01	6.73E-02	pCi/g
17-07091-05	MS	HTC-A08-BKGD01-0006-01 MS	05/15/17 16:41	7/18/2017	9/1/2017	17-07091	Thorium-232	EPA 907.0 Modified	7.85E+00	1.52E+00	1.67E+00	9.63E-02	pCi/g
17-07091-06	MSD	HTC-A08-BKGD01-0006-01 MSD	05/15/17 16:41	7/18/2017	9/1/2017	17-07091	Thorium-232	EPA 907.0 Modified	6.49E+00	1.23E+00	1.35E+00	6.69E-02	pCi/g
17-07091-07	TRG	HTC-A08-BKGD01-1218-01	05/15/17 16:35	7/18/2017	9/1/2017	17-07091	Thorium-232	EPA 907.0 Modified	1.24E+00	3.28E-01	3.46E-01	7.14E-02	pCi/g
17-07091-08	TRG	HTC-A08-BKGD01-1824-01	05/15/17 16:32	7/18/2017	9/1/2017	17-07091	Thorium-232	EPA 907.0 Modified	1.49E+00	4.07E-01	4.28E-01	7.86E-02	pCi/g
17-07091-09	TRG	HTC-A08-BKGD01-2430-01	05/15/17 16:29	7/18/2017	9/1/2017	17-07091	Thorium-232	EPA 907.0 Modified	1.14E+00	2.98E-01	3.15E-01	7.51E-02	pCi/g
17-07091-10	TRG	HTC-A08-BKGD01-3036-01	05/15/17 16:26	7/18/2017	9/1/2017	17-07091	Thorium-232	EPA 907.0 Modified	1.23E+00	3.28E-01	3.45E-01	8.20E-02	pCi/g
17-07091-11	TRG	HTC-A08-BKGD01-3642-01	05/15/17 16:23	7/18/2017	9/1/2017	17-07091	Thorium-232	EPA 907.0 Modified	1.23E+00	3.36E-01	3.53E-01	7.65E-02	pCi/g
17-07091-12	TRG	HTC-A08-BKGD01-4248-01	05/15/17 16:20	7/18/2017	9/1/2017	17-07091	Thorium-232	EPA 907.0 Modified	1.00E+00	2.87E-01	3.00E-01	8.67E-02	pCi/g
17-07091-13	TRG	HTC-A08-BKGD02-0006-01	05/15/17 15:56	7/18/2017	9/1/2017	17-07091	Thorium-232	EPA 907.0 Modified	8.38E-01	2.32E-01	2.44E-01	4.80E-02	pCi/g
17-07091-14	TRG	HTC-A08-BKGD02-0612-01	05/15/17 15:53	7/18/2017	9/1/2017	17-07091	Thorium-232	EPA 907.0 Modified	1.09E+00	3.16E-01	3.31E-01	1.29E-01	pCi/g
17-07091-15	TRG	HTC-A08-BKGD02-1218-01	05/15/17 15:50	7/18/2017	9/1/2017	17-07091	Thorium-232	EPA 907.0 Modified	1.47E+00	3.85E-01	4.06E-01	1.12E-01	pCi/g
17-07091-16	TRG	HTC-A08-BKGD02-1824-01	05/15/17 15:47	7/18/2017	9/1/2017	17-07091	Thorium-232	EPA 907.0 Modified	1.38E+00	3.64E-01	3.83E-01	6.02E-02	pCi/g
17-07091-17	TRG	HTC-A08-BKGD02-2430-01	05/15/17 15:44	7/18/2017	9/1/2017	17-07091	Thorium-232	EPA 907.0 Modified	1.13E+00	3.21E-01	3.37E-01	1.00E-01	pCi/g
17-07091-18	TRG	HTC-A08-BKGD02-3036-01	05/15/17 15:41	7/18/2017	9/1/2017	17-07091	Thorium-232	EPA 907.0 Modified	9.96E-01	3.74E-01	3.84E-01	1.17E-01	pCi/g
17-07091-19	TRG	HTC-A08-BKGD02-3642-01	05/15/17 15:38	7/18/2017	9/1/2017	17-07091	Thorium-232	EPA 907.0 Modified	5.36E-01	1.76E-01	1.82E-01	6.05E-02	pCi/g
17-07091-20	TRG	HTC-A08-BKGD02-4248-01	05/15/17 15:35	7/18/2017	9/1/2017	17-07091	Thorium-232	EPA 907.0 Modified	7.39E-01	2.50E-01	2.59E-01	8.34E-02	pCi/g

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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

Eberline Analytical
Final Report of Analysis

Report To:

Smita Sumbaly
Weston Solutions, Inc.
1090 King Georges Post Rd Suite 201
Edison, NJ 08837

Work Order Details:

SDG:	**17-07091**
Purchase Order:	0094759
Analysis Category:	ENVIRONMENTAL
Sample Matrix:	SO

Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	Report Units
17-07091-01	LCS	KNOWN	07/19/17 00:00	7/18/2017	9/7/2017	17-07091	Uranium-233/234	EPA 908.0 Modified	8.18E+00	2.95E-01			pCi/g
17-07091-01	LCS	SPIKE	07/19/17 00:00	7/18/2017	9/7/2017	17-07091	Uranium-233/234	EPA 908.0 Modified	6.36E+00	9.04E-01	1.01E+00	9.24E-02	pCi/g
17-07091-02	MBL	BLANK	07/19/17 00:00	7/18/2017	9/7/2017	17-07091	Uranium-233/234	EPA 908.0 Modified	5.62E-02	5.33E-02	5.35E-02	6.53E-02	pCi/g
17-07091-03	DUP	HTC-A08-BKGD01-0006-01	05/15/17 16:41	7/18/2017	9/7/2017	17-07091	Uranium-233/234	EPA 908.0 Modified	6.30E-01	1.84E-01	1.89E-01	1.14E-01	pCi/g
17-07091-04	DMSO	HTC-A08-BKGD01-0006-01	05/15/17 16:41	7/18/2017	9/7/2017	17-07091	Uranium-233/234	EPA 908.0 Modified	5.73E-01	1.61E-01	1.67E-01	5.42E-02	pCi/g
17-07091-05	MS	HTC-A08-BKGD01-0006-01 MS	05/15/17 16:41	7/18/2017	9/7/2017	17-07091	Uranium-233/234	EPA 908.0 Modified	7.80E+00	9.50E-01	1.10E+00	5.61E-02	pCi/g
17-07091-06	MSD	HTC-A08-BKGD01-0006-01 MSD	05/15/17 16:41	7/18/2017	9/7/2017	17-07091	Uranium-233/234	EPA 908.0 Modified	7.23E+00	8.89E-01	1.03E+00	6.32E-02	pCi/g
17-07091-07	TRG	HTC-A08-BKGD01-1218-01	05/15/17 16:35	7/18/2017	9/7/2017	17-07091	Uranium-233/234	EPA 908.0 Modified	8.36E-01	2.37E-01	2.44E-01	8.23E-02	pCi/g
17-07091-08	TRG	HTC-A08-BKGD01-1824-01	05/15/17 16:32	7/18/2017	9/7/2017	17-07091	Uranium-233/234	EPA 908.0 Modified	7.16E-01	2.14E-01	2.20E-01	9.89E-02	pCi/g
17-07091-09	TRG	HTC-A08-BKGD01-2430-01	05/15/17 16:29	7/18/2017	9/7/2017	17-07091	Uranium-233/234	EPA 908.0 Modified	7.88E-01	2.30E-01	2.37E-01	7.73E-02	pCi/g
17-07091-10	TRG	HTC-A08-BKGD01-3036-01	05/15/17 16:26	7/18/2017	9/7/2017	17-07091	Uranium-233/234	EPA 908.0 Modified	8.07E-01	2.19E-01	2.27E-01	6.26E-02	pCi/g
17-07091-11	TRG	HTC-A08-BKGD01-3642-01	05/15/17 16:23	7/18/2017	9/7/2017	17-07091	Uranium-233/234	EPA 908.0 Modified	7.64E-01	2.36E-01	2.42E-01	1.00E-01	pCi/g
17-07091-12	TRG	HTC-A08-BKGD01-4248-01	05/15/17 16:20	7/18/2017	9/7/2017	17-07091	Uranium-233/234	EPA 908.0 Modified	7.34E-01	2.18E-01	2.25E-01	1.03E-01	pCi/g
17-07091-13	TRG	HTC-A08-BKGD02-0006-01	05/15/17 15:56	7/18/2017	9/7/2017	17-07091	Uranium-233/234	EPA 908.0 Modified	7.13E-01	2.13E-01	2.19E-01	8.82E-02	pCi/g
17-07091-14	TRG	HTC-A08-BKGD02-0612-01	05/15/17 15:53	7/18/2017	9/7/2017	17-07091	Uranium-233/234	EPA 908.0 Modified	6.66E-01	2.06E-01	2.11E-01	9.58E-02	pCi/g
17-07091-15	TRG	HTC-A08-BKGD02-1218-01	05/15/17 15:50	7/18/2017	9/7/2017	17-07091	Uranium-233/234	EPA 908.0 Modified	7.71E-01	2.28E-01	2.34E-01	9.62E-02	pCi/g
17-07091-16	TRG	HTC-A08-BKGD02-1824-01	05/15/17 15:47	7/18/2017	9/7/2017	17-07091	Uranium-233/234	EPA 908.0 Modified	8.59E-01	2.26E-01	2.34E-01	7.20E-02	pCi/g
17-07091-17	TRG	HTC-A08-BKGD02-2430-01	05/15/17 15:44	7/18/2017	9/7/2017	17-07091	Uranium-233/234	EPA 908.0 Modified	8.85E-01	2.36E-01	2.44E-01	8.45E-02	pCi/g
17-07091-18	TRG	HTC-A08-BKGD02-3036-01	05/15/17 15:41	7/18/2017	9/7/2017	17-07091	Uranium-233/234	EPA 908.0 Modified	5.70E-01	1.80E-01	1.85E-01	7.73E-02	pCi/g
17-07091-19	TRG	HTC-A08-BKGD02-3642-01	05/15/17 15:38	7/18/2017	9/7/2017	17-07091	Uranium-233/234	EPA 908.0 Modified	5.33E-01	1.81E-01	1.85E-01	8.36E-02	pCi/g
17-07091-20	TRG	HTC-A08-BKGD02-4248-01	05/15/17 15:35	7/18/2017	9/7/2017	17-07091	Uranium-233/234	EPA 908.0 Modified	6.46E-01	2.00E-01	2.05E-01	8.66E-02	pCi/g

0029

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

Eberline Analytical
Final Report of Analysis

Report To:

Smita Sumbaly
Weston Solutions, Inc.
1090 King Georges Post Rd Suite 201
Edison, NJ 08837

Work Order Details:

SDG:	**17-07091**
Purchase Order:	0094759
Analysis Category:	ENVIRONMENTAL
Sample Matrix:	SO

Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	Report Units
17-07091-01	LCS	SPIKE	07/19/17 00:00	7/18/2017	9/7/2017	17-07091	Uranium-235/236	EPA 908.0 Modified	5.65E-01	2.04E-01	2.08E-01	8.27E-02	pCi/g
17-07091-02	MBL	BLANK	07/19/17 00:00	7/18/2017	9/7/2017	17-07091	Uranium-235/236	EPA 908.0 Modified	4.70E-02	5.35E-02	5.36E-02	7.06E-02	pCi/g
17-07091-03	DUP	HTC-A08-BKGD01-0006-01	05/15/17 16:41	7/18/2017	9/7/2017	17-07091	Uranium-235/236	EPA 908.0 Modified	5.97E-02	7.49E-02	7.50E-02	1.20E-01	pCi/g
17-07091-04	DMSO	HTC-A08-BKGD01-0006-01	05/15/17 16:41	7/18/2017	9/7/2017	17-07091	Uranium-235/236	EPA 908.0 Modified	7.40E-02	6.74E-02	6.76E-02	8.39E-02	pCi/g
17-07091-05	MS	HTC-A08-BKGD01-0006-01 MS	05/15/17 16:41	7/18/2017	9/7/2017	17-07091	Uranium-235/236	EPA 908.0 Modified	5.32E-01	1.74E-01	1.78E-01	7.44E-02	pCi/g
17-07091-06	MSD	HTC-A08-BKGD01-0006-01 MSD	05/15/17 16:41	7/18/2017	9/7/2017	17-07091	Uranium-235/236	EPA 908.0 Modified	4.23E-01	1.52E-01	1.55E-01	6.83E-02	pCi/g
17-07091-07	TRG	HTC-A08-BKGD01-1218-01	05/15/17 16:35	7/18/2017	9/7/2017	17-07091	Uranium-235/236	EPA 908.0 Modified	1.44E-01	1.07E-01	1.07E-01	1.08E-01	pCi/g
17-07091-08	TRG	HTC-A08-BKGD01-1824-01	05/15/17 16:32	7/18/2017	9/7/2017	17-07091	Uranium-235/236	EPA 908.0 Modified	1.43E-01	1.03E-01	1.03E-01	9.68E-02	pCi/g
17-07091-09	TRG	HTC-A08-BKGD01-2430-01	05/15/17 16:29	7/18/2017	9/7/2017	17-07091	Uranium-235/236	EPA 908.0 Modified	1.06E-01	8.82E-02	8.85E-02	7.58E-02	pCi/g
17-07091-10	TRG	HTC-A08-BKGD01-3036-01	05/15/17 16:26	7/18/2017	9/7/2017	17-07091	Uranium-235/236	EPA 908.0 Modified	1.05E-01	8.49E-02	8.53E-02	8.47E-02	pCi/g
17-07091-11	TRG	HTC-A08-BKGD01-3642-01	05/15/17 16:23	7/18/2017	9/7/2017	17-07091	Uranium-235/236	EPA 908.0 Modified	1.34E-01	1.03E-01	1.04E-01	8.20E-02	pCi/g
17-07091-12	TRG	HTC-A08-BKGD01-4248-01	05/15/17 16:20	7/18/2017	9/7/2017	17-07091	Uranium-235/236	EPA 908.0 Modified	6.89E-02	7.75E-02	7.77E-02	1.09E-01	pCi/g
17-07091-13	TRG	HTC-A08-BKGD02-0006-01	05/15/17 15:56	7/18/2017	9/7/2017	17-07091	Uranium-235/236	EPA 908.0 Modified	6.91E-02	7.60E-02	7.62E-02	1.04E-01	pCi/g
17-07091-14	TRG	HTC-A08-BKGD02-0612-01	05/15/17 15:53	7/18/2017	9/7/2017	17-07091	Uranium-235/236	EPA 908.0 Modified	1.35E-01	9.69E-02	9.74E-02	7.19E-02	pCi/g
17-07091-15	TRG	HTC-A08-BKGD02-1218-01	05/15/17 15:50	7/18/2017	9/7/2017	17-07091	Uranium-235/236	EPA 908.0 Modified	9.28E-02	8.82E-02	8.84E-02	1.08E-01	pCi/g
17-07091-16	TRG	HTC-A08-BKGD02-1824-01	05/15/17 15:47	7/18/2017	9/7/2017	17-07091	Uranium-235/236	EPA 908.0 Modified	4.19E-02	5.41E-02	5.42E-02	7.53E-02	pCi/g
17-07091-17	TRG	HTC-A08-BKGD02-2430-01	05/15/17 15:44	7/18/2017	9/7/2017	17-07091	Uranium-235/236	EPA 908.0 Modified	7.15E-02	7.38E-02	7.39E-02	9.33E-02	pCi/g
17-07091-18	TRG	HTC-A08-BKGD02-3036-01	05/15/17 15:41	7/18/2017	9/7/2017	17-07091	Uranium-235/236	EPA 908.0 Modified	5.83E-02	6.32E-02	6.33E-02	7.61E-02	pCi/g
17-07091-19	TRG	HTC-A08-BKGD02-3642-01	05/15/17 15:38	7/18/2017	9/7/2017	17-07091	Uranium-235/236	EPA 908.0 Modified	3.15E-02	4.82E-02	4.83E-02	7.19E-02	pCi/g
17-07091-20	TRG	HTC-A08-BKGD02-4248-01	05/15/17 15:35	7/18/2017	9/7/2017	17-07091	Uranium-235/236	EPA 908.0 Modified	6.49E-02	6.71E-02	6.72E-02	7.08E-02	pCi/g

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

EBERLINE SERVICES

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

Eberline Analytical
Final Report of Analysis

Report To:

Smita Sumbaly
Weston Solutions, Inc.
1090 King Georges Post Rd Suite 201
Edison, NJ 08837

Work Order Details:

SDG:	**17-07091**
Purchase Order:	0094759
Analysis Category:	ENVIRONMENTAL
Sample Matrix:	SO

Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	Report Units
17-07091-01	LCS	KNOWN	07/19/17 00:00	7/18/2017	9/7/2017	17-07091	Uranium-238	EPA 908.0 Modified	7.93E+00	2.85E-01			pCi/g
17-07091-01	LCS	SPIKE	07/19/17 00:00	7/18/2017	9/7/2017	17-07091	Uranium-238	EPA 908.0 Modified	6.40E+00	9.07E-01	1.02E+00	7.33E-02	pCi/g
17-07091-02	MBL	BLANK	07/19/17 00:00	7/18/2017	9/7/2017	17-07091	Uranium-238	EPA 908.0 Modified	9.39E-02	6.87E-02	6.91E-02	7.45E-02	pCi/g
17-07091-03	DUP	HTC-A08-BKGD01-0006-01	05/15/17 16:41	7/18/2017	9/7/2017	17-07091	Uranium-238	EPA 908.0 Modified	5.55E-01	1.67E-01	1.72E-01	8.27E-02	pCi/g
17-07091-04	DMSO	HTC-A08-BKGD01-0006-01	05/15/17 16:41	7/18/2017	9/7/2017	17-07091	Uranium-238	EPA 908.0 Modified	5.59E-01	1.59E-01	1.64E-01	5.80E-02	pCi/g
17-07091-05	MS	HTC-A08-BKGD01-0006-01 MS	05/15/17 16:41	7/18/2017	9/7/2017	17-07091	Uranium-238	EPA 908.0 Modified	8.19E+00	9.89E-01	1.15E+00	5.58E-02	pCi/g
17-07091-06	MSD	HTC-A08-BKGD01-0006-01 MSD	05/15/17 16:41	7/18/2017	9/7/2017	17-07091	Uranium-238	EPA 908.0 Modified	7.27E+00	8.93E-01	1.03E+00	6.29E-02	pCi/g
17-07091-07	TRG	HTC-A08-BKGD01-1218-01	05/15/17 16:35	7/18/2017	9/7/2017	17-07091	Uranium-238	EPA 908.0 Modified	8.08E-01	2.31E-01	2.38E-01	6.94E-02	pCi/g
17-07091-08	TRG	HTC-A08-BKGD01-1824-01	05/15/17 16:32	7/18/2017	9/7/2017	17-07091	Uranium-238	EPA 908.0 Modified	6.69E-01	2.06E-01	2.11E-01	1.02E-01	pCi/g
17-07091-09	TRG	HTC-A08-BKGD01-2430-01	05/15/17 16:29	7/18/2017	9/7/2017	17-07091	Uranium-238	EPA 908.0 Modified	5.52E-01	1.88E-01	1.92E-01	7.01E-02	pCi/g
17-07091-10	TRG	HTC-A08-BKGD01-3036-01	05/15/17 16:26	7/18/2017	9/7/2017	17-07091	Uranium-238	EPA 908.0 Modified	6.75E-01	1.98E-01	2.03E-01	5.44E-02	pCi/g
17-07091-11	TRG	HTC-A08-BKGD01-3642-01	05/15/17 16:23	7/18/2017	9/7/2017	17-07091	Uranium-238	EPA 908.0 Modified	6.87E-01	2.21E-01	2.27E-01	8.95E-02	pCi/g
17-07091-12	TRG	HTC-A08-BKGD01-4248-01	05/15/17 16:20	7/18/2017	9/7/2017	17-07091	Uranium-238	EPA 908.0 Modified	6.00E-01	1.94E-01	1.99E-01	8.80E-02	pCi/g
17-07091-13	TRG	HTC-A08-BKGD02-0006-01	05/15/17 15:56	7/18/2017	9/7/2017	17-07091	Uranium-238	EPA 908.0 Modified	6.94E-01	2.08E-01	2.14E-01	5.82E-02	pCi/g
17-07091-14	TRG	HTC-A08-BKGD02-0612-01	05/15/17 15:53	7/18/2017	9/7/2017	17-07091	Uranium-238	EPA 908.0 Modified	6.21E-01	1.96E-01	2.01E-01	6.65E-02	pCi/g
17-07091-15	TRG	HTC-A08-BKGD02-1218-01	05/15/17 15:50	7/18/2017	9/7/2017	17-07091	Uranium-238	EPA 908.0 Modified	7.46E-01	2.22E-01	2.28E-01	8.20E-02	pCi/g
17-07091-16	TRG	HTC-A08-BKGD02-1824-01	05/15/17 15:47	7/18/2017	9/7/2017	17-07091	Uranium-238	EPA 908.0 Modified	7.71E-01	2.11E-01	2.18E-01	6.08E-02	pCi/g
17-07091-17	TRG	HTC-A08-BKGD02-2430-01	05/15/17 15:44	7/18/2017	9/7/2017	17-07091	Uranium-238	EPA 908.0 Modified	7.95E-01	2.20E-01	2.27E-01	7.01E-02	pCi/g
17-07091-18	TRG	HTC-A08-BKGD02-3036-01	05/15/17 15:41	7/18/2017	9/7/2017	17-07091	Uranium-238	EPA 908.0 Modified	7.45E-01	2.09E-01	2.15E-01	7.71E-02	pCi/g
17-07091-19	TRG	HTC-A08-BKGD02-3642-01	05/15/17 15:38	7/18/2017	9/7/2017	17-07091	Uranium-238	EPA 908.0 Modified	4.38E-01	1.62E-01	1.65E-01	7.29E-02	pCi/g
17-07091-20	TRG	HTC-A08-BKGD02-4248-01	05/15/17 15:35	7/18/2017	9/7/2017	17-07091	Uranium-238	EPA 908.0 Modified	5.68E-01	1.85E-01	1.89E-01	7.18E-02	pCi/g

0031

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

SECTION V

ANALYTICAL STANDARD

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

U-8

CERTIFICATE OF CALIBRATION
ALPHA STANDARD SOLUTION

Radionuclide:	U-238NAT	Customer:	TMA EBERLINE
Half Life:	(4.468 ± 0.005) x 10^9 years	P.O.No.:	OR2778
Catalog No.:	7338	Reference Date:	January 1 1995 12:00 PST.
Source No.:	479-50	Contained Radioactivity:	(Total U) 8.016 μCi
		Contained Radioactivity:	(Total U) 297 kBq

Description of Solution

a. Mass of solution: 65.2896 g in a 50 ml flame sealed ampoule

b. Chemical form: Uranyl Nitrate in H2O

c. Carrier content: None

d. Density: Approximately 1.3202 g/ml @ 20°C.

Radioimpurities

Refer to attached technical data sheet

Radioactive Daughters

Refer to attached technical data sheet

Radionuclide Concentration

(Total U) 0.1228 μCi/g.

Method of Calibration

Activity calculations are based upon known specific activity and mass.

Uncertainty of Measurement

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

NIST Traceability

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

Leak Test(s)

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

Notes

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

ERIC ALLAS
QUALITY CONTROL

29 DECEMBER 1994
Date Signed

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

EBERLINE SERVICES

QUALITY CONTROL PROGRAM
MP-009

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

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

CURRENT DATE: 7/12/2017 0:00

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

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

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

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

Chemical Composition of Standard Solution
Uranyl nitrate in dilute HNO_3

Dilution Instructions:

Dilution Solvent Used: 1M HNO_3

Dilute to a volume of 1000.00 milliliters

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

And after dilution the activity of this solution is 1.77955E+04 dpm/ml

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

Expiration Date: June 28, 2018

Verified & Approved By _____ Date: 7/12/2017 0:00

QC Approval _____ Date: 7/25/17

EBERLINE SERVICES

QUALITY CONTROL PROGRAM
MP-009

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

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

MP-009
Solution Reference # IPL 479-50
Date 7/12/2017 0:00
Solution # U-8a

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

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

Chemical Composition of Standard Solution
Uranly Nitrate in 1M HNO_3

Dilution Instructions:
Dilution Solvent Used 1M HNO_3

SECONDARY VOLUMETRIC DILUTION

Vol. Parent Solution: 4.0000 ml
Total Activity: 7.1182E+04 dpm
Final Volume: 1000.00 ml

Final Activity Concentration: 7.1182E+01 dpm/ml

NOTES:

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

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

Isotopic ratios from manufacturer's data sheet

Expiration Date: June 28, 2018

Verified & Approved By _____ Date: 7/12/2017 0:00

QC Approval _____ Date: 7/25/17

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

Method of measurement (see reverse of this certificate)

Accuracy Random uncertainty is: ± 0.7% Systematic uncertainty: ± 0.5%
Overall uncertainty in the radioactive concentration quoted above: ± 1.7%
Overall uncertainty is defined on the reverse of this certificate.

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

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

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

Not measured

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

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

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

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

Approved Signatory

Roger Wiltshire

Project Ref. AE2315

Roger Wiltshire

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

EBERLINE SERVICES

QUALITY CONTROL PROGRAM
MP-009

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

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

CURRENT DATE: 11/7/2016 0:00

SOLUTION REFERENCE #: AEA/Amersham 92/232/67

SOLUTION #: U-10

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

Radionuclide: ^{232}U

Reference Date: 3/1/2000 0:00

Certified Activity: 9.760E-01 µCi

Certified Concentration: µCi per gram

Ampoule /Solution Gross: Weight, Grams

Empty Ampoule: Weight, Grams

Solution Net: Weight, Grams

Total Activity in Ampoule: 0.9760 µCi

Chemical Composition of Standard Solution

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

Dilution Instructions:

Dilution Solvent Used: 2M HNO_3

Dilute to a volume of 1000.00 milliliters

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

And after dilution the activity of this solution is 2.167E+03 dpm/ml

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

Expiration Date: October 7, 2017

Verified & Approved By _____ Date: 11/7/2016 0:00

QC Approval _____ Date: 11/10/16

EBERLINE SERVICES

QUALITY CONTROL PROGRAM
MP-009

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

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

MP-009
Solution Reference # AEA/Amersham 92/232/67

Date 11/7/2016 0:00
Solution # U-10a

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

Radionuclide of Interest ^{232}U
Parent Solution Conc. 2.167E+03 dpm/ml

Reference Date 3/1/2000 0:00

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

Dilution Instructions:

Dilution Solvent Used 2M HNO_3

SECONDARY VOLUMETRIC DILUTION

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

Final Activity Concentration: 2.1670E+01 dpm/ml

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 7, 2017

Verified & Approved By _____ Date: 11/7/2016 0:00

QC Approval _____ Date: 11/10/16

Th-18

Isotope Products Laboratories
An Eckert & Ziegler Company

24937 Avenue Tibbitts
Valencia, California 91355

Tel 661•309•1010
Fax 661•257•8303

CERTIFICATE OF CALIBRATION
ALPHA STANDARD SOLUTION

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

Physical Description:

A. Mass of solution: 5.0147 g in 5 mL flame-sealed ampoule
B. Chemical form: $Th(NO_3)_4$ in 0.1M HNO_3
C. Carrier content: 10µg Th/mL
D. Density: 1.0016 g/mL @ 20°C.

Radioimpurities:

None detected (daughters in equilibrium)

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

Method of Calibration:

This source was prepared from a weighed aliquot of solution whose activity in µCi/g was determined using gamma ray spectrometry.
Peak energy used for integration: 193.5 keV
Branching ratio used: 0.0441 gammas per decay

Uncertainty of Measurement:

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

Notes:

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

Ann U Khan — Quality Control

9-Jan-02 — Date Signed

IPL Ref. No.: 867-54

EBERLINE SERVICES

QUALITY CONTROL PROGRAM
MP-009

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

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

CURRENT DATE: 8/16/2017 0:00

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

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

Radionuclide: ^{229}Th
Reference Date: 1/15/2002 0:00
Certified Activity: 1.013E+00 µCi
Certified Concentration: µCi per gram

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

Chemical Composition of Standard Solution
$^{229}Th(NO_3)_4$ in 0.1M HNO_3

Dilution Instructions:

Dilution Solvent Used: 0.1 M HNO_3

Dilute to a volume of 1000.00 milliliters

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

And after dilution the activity of this solution is 2.249E+03 dpm/ml

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

Expiration Date: August 11, 2018

Verified & Approved By _____ Date: 8/16/2017 0:00

QC Approval _____ Date: 8/16/17

EBERLINE SERVICES

QUALITY CONTROL PROGRAM
MP-009

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

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

MP-009
Solution Reference # IPL 867-54

Date 8/16/2017 0:00
Solution # Th-18a

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

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

Reference Date 1/15/2002 0:00

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

Dilution Instructions:

Dilution Solvent Used 0.1M HNO_3

SECONDARY VOLUMETRIC DILUTION

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

Final Activity Concentration: 2.2490E+01 dpm/ml

NOTES:

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

Expiration Date: August 11, 2018

Verified & Approved By _____ Date: 8/16/2017 0:00

QC Approval _____ Date: 8/16/17

QA/QC REVIEWED
Date 10/14/91 Initials

CERTIFICATE OF CALIBRATION
ALPHA STANDARD SOLUTION

Received
OCT 14 1991
TMA/Eberline
Oak Ridge Lab

Radionuclide	Th-230	Customer:	TMA EBERLINE
Half Life:	(7.54 ± 0.03) x 10^4 years	P.O.No.:	TT4944
Catalog No.:	7230	Reference Date:	November 1 1991 12:00 PST.
Source No.:	388-116	Contained Radioactivity:	1.036 µCi.

Description of Solution

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

Radioimpurities

See attached technical data sheet

Radioactive Daughters

See attached technical data sheet

Radionuclide Concentration

0.207 µCi/gram.

Method of Calibration

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

Uncertainty of Measurement

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

NIST Traceability

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

Notes

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

QUALITY CONTROL

ISOTOPE PRODUCTS LABORATORIES
1800 No. Keystone Street.,
Burbank, California 91504
(818) 843 - 7000

EBERLINE SERVICES

QUALITY CONTROL PROGRAM
MP-009

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

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

CURRENT DATE: 2/28/2017 0:00

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

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

Radionuclide: ^{230}Thorium
Reference Date: 11/1/1991 0:00
Certified Activity: 1.036E+00 µCi
Certified Concentration: µCi 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
$^{230}Th(NO_3)_4$ in 0.1N HNO_3

Dilution Instructions:
Dilution Solvent Used: 0.1N HNO_3

Dilute to a volume of 1000.00 milliliters

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

And after dilution the activity of this solution is 2.300E+03 dpm/ml

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

Expiration Date: February 1, 2018

Recertified By _____ Date: 2/28/2017 0:00

QC Approval _____ Date: 3/1/17

EBERLINE SERVICES

QUALITY CONTROL PROGRAM
MP-009

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

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

MP-009

Solution Reference # IPL 388-116

Date 2/28/2017 0:00

Solution # Th-1b

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

Radionuclide of Interest ^{230}Thorium

Reference Date 11/1/1991 0:00

Parent Solution Conc. 2.30E+03 dpm/ml

Chemical Composition of Standard Solution

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

Dilution Instructions:

Dilution Solvent Used 0.1N HNO_3

SECONDARY VOLUMETRIC DILUTION

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

Final Activity Concentration: 2.2999E+01 dpm/ml

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

NOTES:

Expiration Date: February 1, 2018

Recertified By _____ Date: 2/28/2017 0:00

QC Approval _____ Date: 3/1/17

Th-18

Isotope Products Laboratories
An Eckert & Ziegler Company

24937 Avenue Tibbitts
Valencia, California 91355

Tel 661•309•1010
Fax 661•257•8303

CERTIFICATE OF CALIBRATION
ALPHA STANDARD SOLUTION

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

Physical Description:

A. Mass of solution: 5.0147 g in 5 mL flame-sealed ampoule
B. Chemical form: $Th(NO_3)_4$ in 0.1M HNO_3
C. Carrier content: 10µg Th/mL
D. Density: 1.0016 g/mL @ 20°C.

Radioimpurities:

None detected (daughters in equilibrium)

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

Method of Calibration:

This source was prepared from a weighed aliquot of solution whose activity in µCi/g was determined using gamma ray spectrometry.
Peak energy used for integration: 193.5 keV
Branching ratio used: 0.0441 gammas per decay

Uncertainty of Measurement:

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

Notes:

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

Quality Control — 9-Jan-02 Date Signed — IPL Ref. No.: 867-54

EBERLINE SERVICES

QUALITY CONTROL PROGRAM
MP-009

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

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

CURRENT DATE: 8/16/2017 0:00

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

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

Radionuclide: ^{229}Th
Reference Date: 1/15/2002 0:00
Certified Activity: 1.013E+00 µCi
Certified Concentration: µCi per gram

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

Chemical Composition of Standard Solution
$^{229}Th(NO_3)_4$ in 0.1M HNO_3

Dilution Instructions:

Dilution Solvent Used: 0.1 M HNO_3

Dilute to a volume of 1000.00 milliliters

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

And after dilution the activity of this solution is 2.249E+03 dpm/ml

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

Expiration Date: August 11, 2018

Verified & Approved By _____ Date: 8/16/2017 0:00

QC Approval _____ Date: 8/16/17

EBERLINE SERVICES

QUALITY CONTROL PROGRAM
MP-009

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

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

MP-009
Solution Reference # IPL 867-54

Date 8/16/2017 0:00
Solution # Th-18a

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

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

Reference Date 1/15/2002 0:00

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

Dilution Instructions:

Dilution Solvent Used 0.1M HNO_3

SECONDARY VOLUMETRIC DILUTION

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

Final Activity Concentration: 2.2490E+01 dpm/ml

NOTES:

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

Expiration Date: August 11, 2018

Verified & Approved By _____ Date: 8/16/2017 0:00

QC Approval _____ Date: 8/16/17

Eckert & Ziegler
Analytics

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

CERTIFICATE OF CALIBRATION

Standard Reference Source

GAS - 1602

SRS Number: 104852
Source Description: Sand in 16 Ounce PP Omega Jar Filled to Capacity
Product Code: 8401-EG-SAN
Customer: Eberline Analytical Corporation
P.O. Number: OR-1610009, Item 4

This standard radionuclide source was prepared from an aliquot measured gravimetrically from a master radionuclide solution calibrated with a germanium gamma-ray spectrometer system. Additional radionuclides were added gravimetrically from solutions calibrated by gamma-ray spectrometry, ionization chamber, or liquid scintillation counting. Calibration and purity were checked using germanium gamma-ray spectrometry. 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 (NIST) 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."

Reference Date: 01-October-2016 12:00 PM EST

MGS Mixture

Isotope	Gamma-Ray Energy, keV	Half-Life, d	Activity, Bq	Flux, s^{-1}	Uncertainty u_A, %	Uncertainty u_B, %	Uncertainty U, %*	Calibration Method**
Am-241	59.5	1.580E+05	9.500E+03	1.976E+03	0.1	1.8	3.6	4π LS
Cd-109	88.0	4.614E+02	7.668E+04	2.837E+03	0.5	2.0	4.1	HPGe
Co-57	122.1	2.717E+02	2.240E+03	1.917E+03	0.4	1.7	3.4	HPGe
Ce-139	165.9	1.376E+02	2.655E+03	2.124E+03	0.4	1.7	3.6	HPGe
Hg-203	279.2	4.659E+01	6.065E+03	4.947E+03	0.3	1.7	3.5	HPGe
Sn-113	391.7	1.151E+02	4.528E+03	2.942E+03	0.4	1.9	3.9	HPGe
Cs-137	661.7	1.099E+04	2.249E+03	1.914E+03	0.7	1.9	4.1	HPGe
Y-88	898.0	1.066E+02	7.415E+03	6.948E+03	0.7	1.7	3.7	HPGe
Y-88	1836.1			7.356E+03	0.7	1.7	3.7	
Co-60	1173.2	1.925E+03	3.562E+03	3.557E+03	0.7	1.8	3.9	HPGe
Co-60	1332.5			3.561E+03	0.7	1.8	3.9	

Mixed Gamma (MGS) master solution is EZA's eight isotope mixture which is calibrated quarterly and consists of Cd-109, Co-57, Ce-139, Hg-203, Sn-113, Cs-137, Y-88, and Co-60. ***Uncertainty:** U - Relative expanded uncertainty, k = 2. See NIST Technical Note 1297, "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results." ****Calibration Methods:** 4π LS - 4π Liquid Scintillation Counting, HPGe - High Purity Germanium Gamma-Ray Spectrometer, IC - Ionization Chamber.

(Certificate continued on reverse side)

Corporate Office
24937 Avenue Tibbitts Valencia, California 91355

Laboratory
1380 Seaboard Industrial Blvd. Atlanta, Georgia 30318

SECTION VI

QUALITY CONTROL SAMPLE RESULTS SUMMARY

WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
17-07091	UUISO Apex	1	pCi	g	Weston Solutions, 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		77.78%	15.90%	100.00%	3.60%	8.18E+00	2.95E-01	6.36E+00	1.01E+00	U-8a	3.20E+01	3.60E+00	5.68E-01
U-238		80.77%	15.86%	100.00%	3.60%	7.93E+00	2.85E-01	6.40E+00	1.02E+00	U-8a	3.10E+01	3.60E+00	5.68E-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)
U-234	1.52	89.19%	8.10E+00	2.92E-01	7.80E+00	1.10E+00	5.73E-01	1.67E-01	1.01E+00	U-8a	3.20E+01	3.60	5.68E-01
U-238	0.36	97.25%	7.85E+00	2.82E-01	8.19E+00	1.15E+00	5.59E-01	1.64E-01	1.01E+00	U-8a	3.10E+01	3.60	5.68E-01

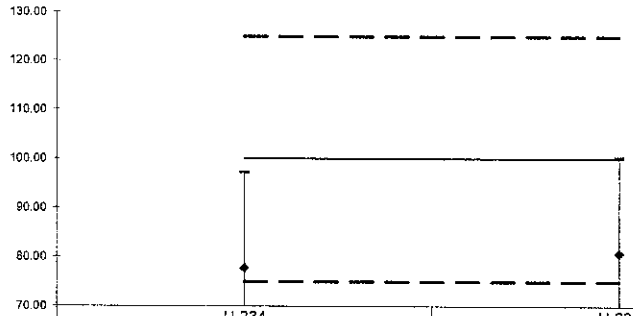
Duplicate Results / QC Summary

Analyte	Normalized Difference	RPD	Original Result	Original CSU	Duplicate Result	Duplicate CSU	LCS Relative Bias	LCS % R		MS % R	MS ND	Rep RPD	Rep ND
U-234	0.44	9.46	5.73E-01	1.67E-01	6.30E-01	1.89E-01	0.78	OK					OK
U-238	0.03	0.69	5.59E-01	1.64E-01	5.55E-01	1.72E-01	0.81	OK					OK
U-235	0.28	21.48	7.40E-02	6.76E-02	5.97E-02	7.50E-02		OK					OK

0050

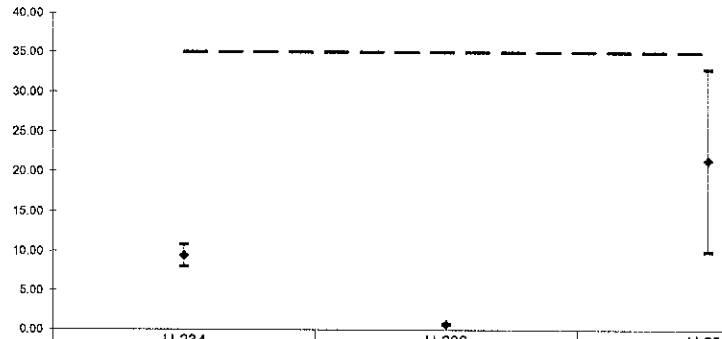
WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
17-07091	UUISO Apex	1	pCi	g	Weston Solutions, Inc.

LCS % Recovery



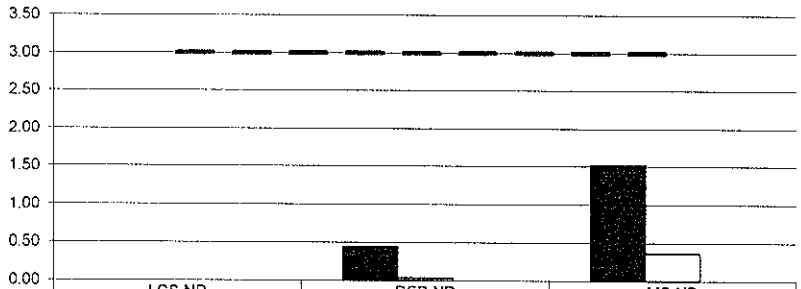
	U-234	U-238
Lower Error	58.28	61.31
Upper Error	97.28	100.23
%R	77.78	80.77
LCL	75	75
Mean	100	100
UCL	125	125

Replicate Sample RPD



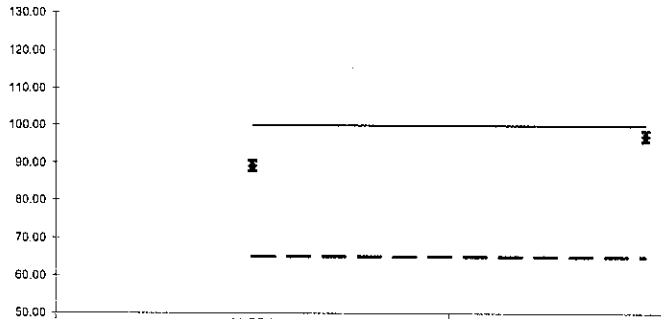
	U-234	U-238	U-235
Lower Error	10.86	0.80	32.94
Upper Error	8.06	0.59	10.02
RPD	9.46	0.69	21.48
CL	35	35	35

Normalized Difference



	LCS ND	REP ND	MS ND
U-234	0.00	0.44	1.52
U-238	0.00	0.03	0.36
	0.00	0.00	0.00
UCL	3	3	3

Matrix Spike % Recovery



	U-234	U-238
Lower Error	87.79	95.81
Upper Error	90.58	98.68
%R	89.19	97.25
LCL	65	65
Mean	100	100
UCL	135	135

0051

WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
17-07091	UUISO Apex	1	pCi	g	Weston Solutions, 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		77.78%	15.90%	100.00%	3.60%	8.18E+00	2.95E-01	6.36E+00	1.01E+00	U-8a	3.20E+01	3.60E+00	5.68E-01
U-238		80.77%	15.86%	100.00%	3.60%	7.93E+00	2.85E-01	6.40E+00	1.02E+00	U-8a	3.10E+01	3.60E+00	5.68E-01

Matrix Spike Duplicate

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)
U-234	2.57	82.75%	8.05E+00	2.90E-01	7.23E+00	1.03E+00	5.73E-01	1.67E-01	1.01E+00	U-8a	3.20E+01	3.60	5.63E-01
U-238	1.99	86.15%	7.80E+00	2.81E-01	7.27E+00	1.03E+00	5.59E-01	1.64E-01	1.01E+00	U-8a	3.10E+01	3.60	5.63E-01

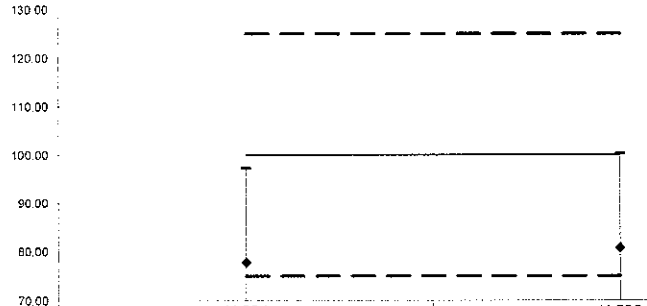
Duplicate Results / QC Summary

Analyte	Normalized Difference	RPD	Original Result	Original CSU	Duplicate Result	Duplicate CSU	LCS Relative Bias	LCS % R		MS % R	MS ND	Rep RPD	Rep ND
U-234	0.44	9.46	5.73E-01	1.67E-01	6.30E-01	1.89E-01	0.78	OK					OK
U-238	0.03	0.69	5.59E-01	1.64E-01	5.55E-01	1.72E-01	0.81	OK					OK
U-235	0.28	21.48	7.40E-02	6.76E-02	5.97E-02	7.50E-02		OK					OK

0052

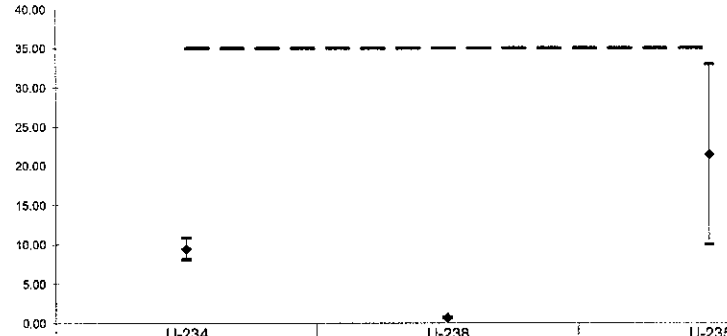
WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
17-07091	UUISO Apex	1	pCi	g	Weston Solutions, Inc.

LCS % Recovery



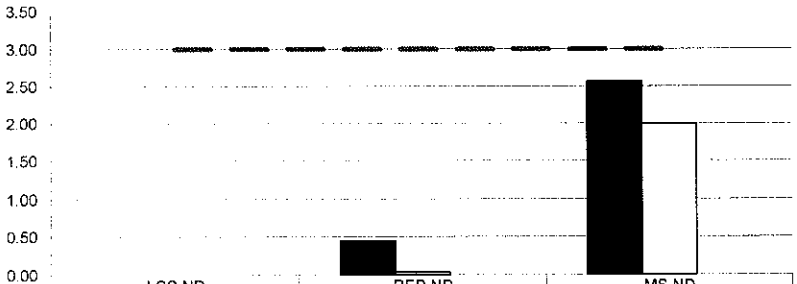
	U-234	U-238
Lower Error	58.28	61.31
Upper Error	97.28	100.23
%R	77.78	80.77
LCL	75	75
Mean	100	100
UCL	125	125

Replicate Sample RPD



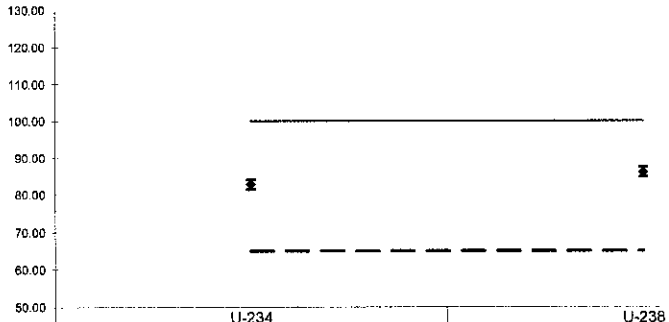
	U-234	U-238	U-235
Lower Error	10.86	0.80	32.94
Upper Error	8.06	0.59	10.02
RPD	9.46	0.69	21.48
CL	35	35	35

Normalized Difference



	LCS ND	REP ND	MS ND
U-234	0.00	0.44	2.57
U-238	0.00	0.03	1.99
	0.00	0.00	0.00
UCL	3	3	3

Matrix Spike % Recovery



	U-234	U-238
Lower Error	81.43	84.84
Upper Error	84.07	87.47
%R	82.75	86.15
LCL	65	65
Mean	100	100
UCL	135	135

0053

WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
17-07091	ThISO Apex	1	pCi	g	Weston Solutions, Inc.

Laboratory Control Sample

Analyte		LCS Measured	CSU Measured	LCS Expected	Uncert. Expected	Known	Known Error	Result	CSU	Standard ID	Standard ACT (dpm)	Standard Error	Standard Added (g)
TH-228		118.94%	20.29%	100.00%	3.60%	5.02E+00	1.81E-01	5.98E+00	1.21E+00	Th-8b	1.04E+02	3.60E+00	1.08E-01
TH-230		119.20%	21.61%	100.00%	2.70%	5.43E+00	1.47E-01	6.47E+00	1.40E+00	Th-1b	2.35E+01	2.70E+00	5.12E-01
TH-232		117.13%	20.07%	100.00%	3.60%	5.02E+00	1.81E-01	5.88E+00	1.18E+00	Th-8b	1.04E+02	3.60E+00	1.08E-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)
TH-228	0.33	104.08%	8.29E+00	2.98E-01	9.13E+00	1.96E+00	5.03E-01	2.16E-01	1.02E+00	Th-8b	1.04E+02	3.60	1.81E-01
TH-230	0.92	112.70%	6.78E+00	1.83E-01	7.97E+00	1.83E+00	3.28E-01	1.62E-01	1.02E+00	Th-1b	2.35E+01	2.70	6.52E-01
TH-232	0.87	90.89%	8.29E+00	2.98E-01	7.85E+00	1.67E+00	3.20E-01	1.55E-01	1.02E+00	Th-8b	1.04E+02	3.60	1.81E-01

Duplicate Results

Analyte	Normalized Difference	RPD	Original Result	Original CSU	Duplicate Result	Duplicate CSU
TH-228	0.36	10.36	5.03E-01	2.16E-01	5.58E-01	2.13E-01
TH-230	1.20	37.77	3.28E-01	1.62E-01	4.81E-01	1.89E-01
TH-232	1.80	53.42	3.20E-01	1.55E-01	5.53E-01	2.01E-01

QC Summary

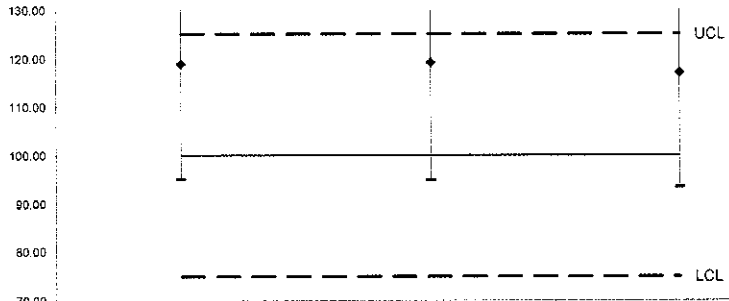
LCS Relative Bias	LCS % R		MS % R	MS ND	Rep RPD	Rep ND
1.19	OK					OK
1.19	OK					OK
1.17	OK					OK

0054

Version

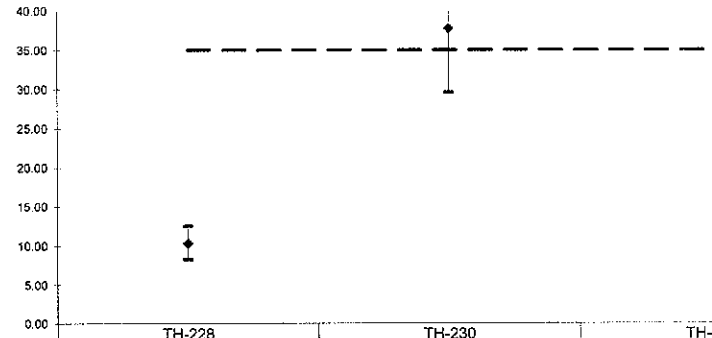
WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
17-07091	ThISO Apex	1	pCi	g	Weston Solutions, Inc.

LCS % Recovery



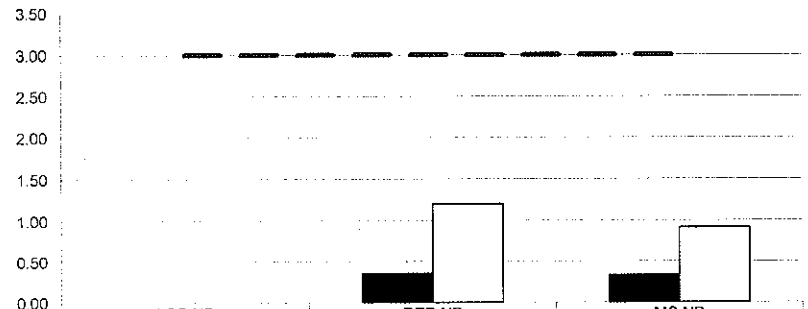
	TH-228	TH-230	TH-232
Lower Error	95.05	94.89	93.47
Upper Error	142.83	143.51	140.80
%R	118.94	119.20	117.13
LCL	75	75	75
Mean	100	100	100
UCL	125	125	125

Replicate Sample RPD



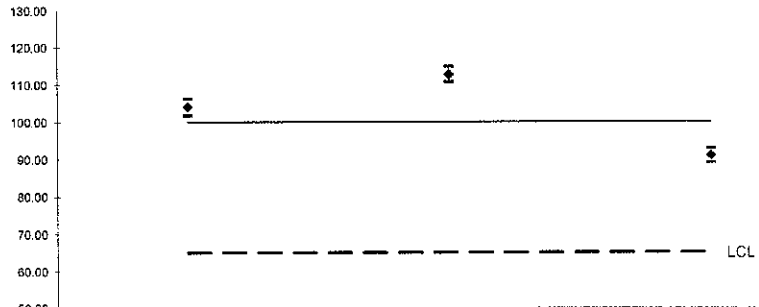
	TH-228	TH-230	TH-232
Lower Error	12.45	45.97	64.30
Upper Error	8.27	29.57	42.54
RPD	10.36	37.77	53.42
CL	35	35	35

Normalized Difference



	LCS ND	REP ND	MS ND
TH-228	0.00	0.36	0.33
TH-230	0.00	1.20	0.92
UCL	3	3	3

Matrix Spike % Recovery



	TH-228	TH-230	TH-232
Lower Error	101.82	110.68	88.92
Upper Error	106.34	114.71	92.86
%R	104.08	112.70	90.89
LCL	65	65	65
Mean	100	100	100
UCL	135	135	135

0055

WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
17-07091	ThISO Apex	1	pCi	g	Weston Solutions, Inc.

Laboratory Control Sample

Analyte		LCS Measured	CSU Measured	LCS Expected	Uncert. Expected	Known	Known Error	Result	CSU	Standard ID	Standard ACT (dpm)	Standard Error	Standard Added (g)
TH-228		118.94%	20.29%	100.00%	3.60%	5.02E+00	1.81E-01	5.98E+00	1.21E+00	Th-8b	1.04E+02	3.60E+00	1.08E-01
TH-230		119.20%	21.61%	100.00%	2.70%	5.43E+00	1.47E-01	6.47E+00	1.40E+00	Th-1b	2.35E+01	2.70E+00	5.12E-01
TH-232		117.13%	20.07%	100.00%	3.60%	5.02E+00	1.81E-01	5.88E+00	1.18E+00	Th-8b	1.04E+02	3.60E+00	1.08E-01

Matrix Spike Duplicate

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)
TH-228	0.44	105.29%	7.17E+00	2.58E-01	8.05E+00	1.69E+00	5.03E-01	2.16E-01	1.02E+00	Th-8b	1.04E+02	3.60	1.57E-01
TH-230	0.25	103.19%	6.14E+00	1.66E-01	6.67E+00	1.50E+00	3.28E-01	1.62E-01	1.02E+00	Th-1b	2.35E+01	2.70	5.91E-01
TH-232	1.43	86.04%	7.17E+00	2.58E-01	6.49E+00	1.35E+00	3.20E-01	1.55E-01	1.02E+00	Th-8b	1.04E+02	3.60	1.57E-01

Duplicate Results / QC Summary

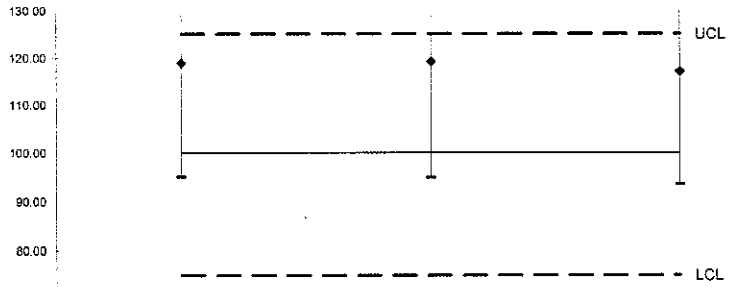
Analyte	Normalized Difference	RPD	Original Result	Original CSU	Duplicate Result	Duplicate CSU	LCS Relative Bias	LCS % R		MS % R	MS ND	Rep RPD	Rep ND
TH-228	0.36	10.36	5.03E-01	2.16E-01	5.58E-01	2.13E-01	1.19	OK					OK
TH-230	1.20	37.77	3.28E-01	1.62E-01	4.81E-01	1.89E-01	1.19	OK					OK
TH-232	1.80	53.42	3.20E-01	1.55E-01	5.53E-01	2.01E-01	1.17	OK					OK

0056

Version

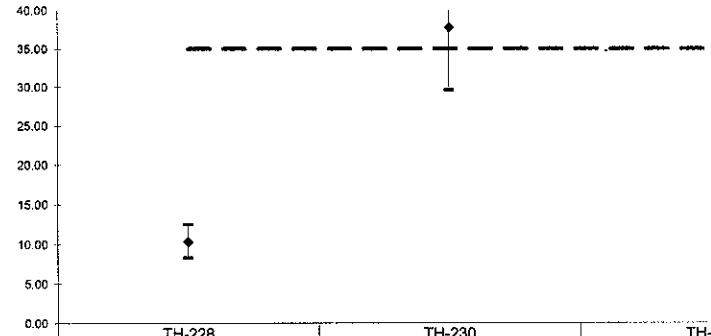
WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
17-07091	ThISO Apex	1	pCi	g	Weston Solutions, Inc.

LCS % Recovery



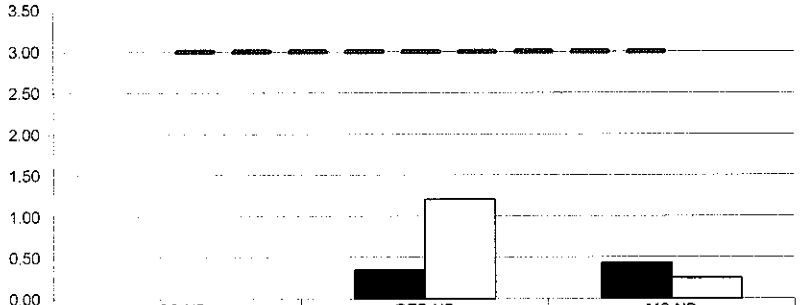
	TH-228	TH-230	TH-232
Lower Error	95.05	94.89	93.47
Upper Error	142.83	143.51	140.80
%R	118.94	119.20	117.13
LCL	75	75	75
Mean	100	100	100
UCL	125	125	125

Replicate Sample RPD



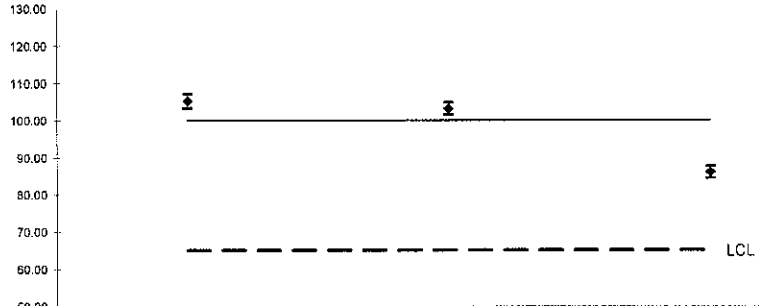
	TH-228	TH-230	TH-232
Lower Error	12.45	45.97	64.30
Upper Error	8.27	29.57	42.54
RPD	10.36	37.77	53.42
CL	35	35	35

Normalized Difference



	LCS ND	REP ND	MS ND
TH-228	0.00	0.36	0.44
TH-230	0.00	1.20	0.25
UCL	3	3	3

Matrix Spike % Recovery



	TH-228	TH-230	TH-232
Lower Error	103.35	101.52	84.43
Upper Error	107.24	104.86	87.65
%R	105.29	103.19	86.04
LCL	65	65	65
Mean	100	100	100
UCL	135	135	135

0067

Eberline Analytical
Analysis Control Chart

WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
17-07091	Gamma	2	pCi	g	Weston Solutions, 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		90.05%	7.94%	100.00%	3.89%	1.35E+02	5.27E+00	1.22E+02	9.67E+00	GAS-1402	1.35E+02	5.27E+00	7.36E+02
CS-137		95.89%	13.26%	100.00%	4.01%	8.44E+01	3.38E+00	8.09E+01	1.07E+01	GAS-1402	8.44E+01	3.38E+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)

Duplicate Results

Analyte	Normalized Difference	RPD	Original Result	Original CSU	Duplicate Result	Duplicate CSU
K-40	0.29	3.15	1.80E+01	2.74E+00	1.74E+01	2.61E+00
RA-226	0.35	6.51	1.05E+00	3.16E-01	9.80E-01	1.98E-01
RA-228	0.12	2.42	1.12E+00	2.97E-01	1.09E+00	3.26E-01

QC Summary

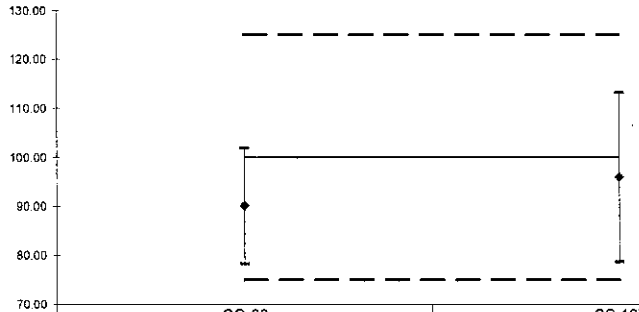
LCS Relative Bias	LCS % R		MS % R	MS ND	Rep RPD	Rep ND
0.90	OK		<CS-137	K-40>	NA	
0.96	OK		<CO-60	RA-226>	NA	OK
				RA-228>	NA	OK

0058

Version

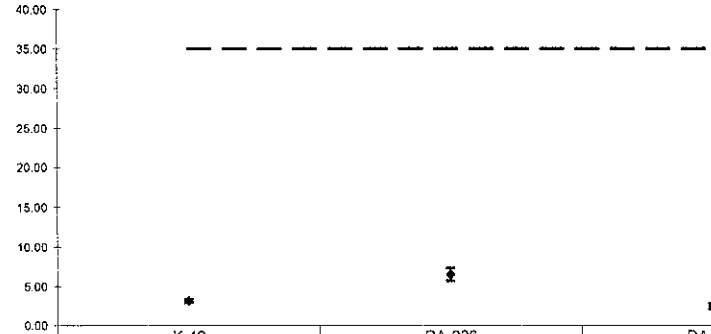
WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
17-07091	Gamma	2	pCi	g	Weston Solutions, Inc.

LCS % Recovery



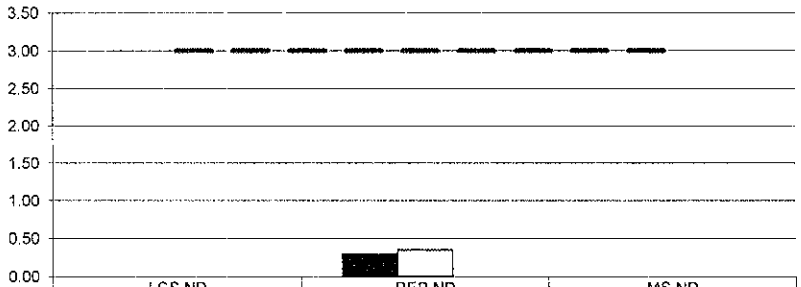
	CO-60	CS-137
Lower Error	78.22	78.63
Upper Error	101.88	113.15
%R	90.05	95.89
LCL	75	75
Mean	100	100
UCL	125	125

Replicate Sample RPD



	K-40	RA-226	RA-228
Lower Error	3.39	7.33	2.76
Upper Error	2.92	5.68	2.08
RPD	3.15	6.51	2.42
CL	35	35	35

Normalized Difference



	LCS ND	REP ND	MS ND
CO-60	0.00	0.29	0.00
CS-137	0.00	0.35	0.00
	0.00	0.00	0.00
UCL	3	3	3

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	17-07091
		Analysis Code	UUISO
		Run Number	1

#	Date	Dept	User	Notes
1	08/15/17 04:46	PREP	JHARVEY	ALIQUOTED AND ADDED SPIKES AND TRACERS- ADDED HF AND DRIED SAMPLES DOWN- ADDED MIXED ACIDS AND TOOK SAMPLES TO DRYNESS- SUBMITTED SAMPLES TO SEPARATIONS

JHarvey
8/15/17

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	17-07091
		Analysis Code	UUISO
		Run Number	1

#	Date	Dept	User	Notes
1	08/15/17 04:46	PREP	JHARVEY	ALIQUOTED AND ADDED SPIKES AND TRACERS- ADDED HF AND DRIED SAMPLES DOWN- ADDED MIXED ACIDS AND TOOK SAMPLES TO DRYNESS- SUBMITTED SAMPLES TO SEPARATIONS
2	09/06/17 16:32	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.

9/6/17

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	17-07091
Analysis Code	UUISO
Run Number	1

#	Date	Dept	User	Notes
1	08/15/17 04:46	PREP	JHARVEY	ALIQUOTED AND ADDED SPIKES AND TRACERS- ADDED HF AND DRIED SAMPLES DOWN- ADDED MIXED ACIDS AND TOOK SAMPLES TO DRYNESS- SUBMITTED SAMPLES TO SEPARATIONS
2	09/06/17 16:32	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	09/07/17 11:44	CHEM	JDEMELAS	Added 0.1 ml Neodymium Carrier, 0.3 ml Titanous Chloride and 1 ml HF to samples in C-Tubes and mixed; Immersed samples in ice bath for minimum of 1 hour; Setup filters, added Alcohol and Carbon Substrate, then added samples; When samples were filtered, added 10 ml DI H2O rinses from C-Tubes and filtered; Rinsed with Alcohol; When rinsates were filtered, placed filters in new, labeled Petri Dishes; and Set T-0. Completed documentation and sent sample set to the Count Room.

9/7/17

EBERLINE SERVICES

Reagents Used in an Analysis

Internal Work Order	
17-07091	
Analysis Code	Run
UUISO	1

Reagent ID	Reagent Name	Reagent Concentration	Analyst ID	Date Recorded
019093P	Hydrofluoric Acid	Reagent Grade	JHARVEY	8/15/2017
018971P	Nitric Acid	Reagent Grade	JHARVEY	8/15/2017
019133P	Perchloric Acid	Reagent Grade	JHARVEY	8/15/2017
018550P	Sulfuric Acid	Reagent Grade	JHARVEY	8/15/2017
018798P	Anion Exchange Resin	Reagent Grade	JDEMELAS	9/6/2017
019183D01	Hydrochloric Acid	0.5N	JDEMELAS	9/6/2017
019202S	Hydrochloric Acid	6.5N	JDEMELAS	9/6/2017
019134P	Hydrochloric Acid	Reagent Grade	JDEMELAS	9/6/2017
019247S	Hydrochloric Acid	8N	JDEMELAS	9/6/2017
019259S	HCl - NH4I	8N - 0.1M	JDEMELAS	9/6/2017
019238S	HCl - HF	6.5N - 0.04N	JDEMELAS	9/6/2017
018890S	Neodymium Carrier	1 mg/ml	JDEMELAS	9/7/2017
019038P	Titanous Chloride	Reagent Grade	JDEMELAS	9/7/2017
019227P	Hydrofluoric Acid	Reagent Grade	JDEMELAS	9/7/2017
019063P	Ethyl Alcohol	1	JDEMELAS	9/7/2017
019225S	Carbon substrate	Solution	JDEMELAS	9/7/2017

Alpha #1

Date	Sample #	Client	Load Time	CT Time	Analysis	Tech
8/31/17	1708068A (1-6)	MPA	1508	2hr50m	Rak	KB
9/1/17	Daily Pulser	LAB	0459	1	[illegible]	—
9/1/17	SECCAL(3-[illegible])	LAB	1135	2hr50m	[illegible]	—
9/1	1708126A(1-5)	Smoky Mount	0839	2hr50m	Pu[illegible]	C
9/1	1708126A(1)	Smoky Mount	0839	2hr50m	Pu[illegible]	C
9/1/17	1707091A(19-20)	Weston	1409	2hr50m	Th	KB
9/1/17	1708122A(1-4)	USA	1410	2hr50m	UU	KB
9/1/17	System Blksel	Lab	1728	16.40hr	[illegible]	KB
9/3/17	Daily Pulser	Lab	0948	10min	[illegible]	KB
9/3/17	1708038A(4)	UCOR	1000	2hr50m	Th	KB
9/3/17	1708038A(4)	UCOR	1001	2hr50m	Th[illegible]	KB
9/5	Daily Pulser	LAB	0522	1	[illegible]	—
9/5/17	1708075A(1-4)	UCOR	1512	2hr50m	iso-u	AG
9/5/17	1708075ANT(4)	UCOR	1512	2hr50m	iso-u(NT)	AG
9/5/17	Reagent test 109	Lab	1512	2hr50m	u (NT)	AG
9/6	Daily Pulser	LAB	0575	1	[illegible]	—
9/6	1708092A(14,16)	UCOR	0575	2hr50m	UU[illegible]	—
9/6	1708126A(1-4)	Smoky Mount	0539	2hr50m	Am241	C
9/6	1708075A(1-4)	UCOR	0841	2hr50m	Th[illegible]	C
9/6	1708064A(1,2)	UCOR	0842	2hr50m	Am241	C
~~9/6/17~~	~~1708075A(2)~~	~~UCOR~~	~~1204~~	~~2hr50m~~	~~Am241~~	~~KB~~
~~9/6/17~~	~~1708064A(1,3,5)~~	~~UCOR~~	~~1207~~	~~2hr50m~~	~~Am243~~	~~KB~~
9/7	Daily Pulser	LAB	0521	1	[illegible]	—
9/7/17	1709002A(1-5)	USA	1021	2hr50m	Rak	KB
9/7/17	1707091A(1-6)	Weston	1407	2hr50m	UU	KB

Alpha #3

Date	Sample #	Client	Load Time	CT Time	Independent Tech	
9/7/17	1708072A(1-4)	Grace	1256	2h.50	Pu242	KB
9/7/17	1708072A(1-5)	Grace	1257	2h.50	PU	KB
9/7/17	1707091A(7-19)	Weston	1409	2h.50	UU	KB
9/7/17	1707091A(20)	Weston	1431	2h.50	UU	KB

ISO-TH NOTES

EBERLINE SERVICES

Work Order Analysis Notes

Oak Ridge Laboratory
601 Scarboro Rd.
Oak Ridge, TN 37830
Voice: 865.481.0683
www.eberlineservices.com

Internal Work Order	17-07091
Analysis Code	ThISO
Run Number	1

#	Date	Dept	User	Notes
1	08/15/17 04:46	PREP	JHARVEY	ALIQUOTED AND ADDED SPIKES AND TRACERS- ADDED HF AND DRIED SAMPLES DOWN- ADDED MIXED ACIDS AND TOOK SAMPLES TO DRYNESS- SUBMITTED SAMPLES TO SEPARATIONS

JHarvey
8/15/17

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	17-07091
		Analysis Code	ThISO
		Run Number	1

#	Date	Dept	User	Notes
1	08/15/17 04:46	PREP	JHARVEY	ALIQUOTED AND ADDED SPIKES AND TRACERS- ADDED HF AND DRIED SAMPLES DOWN- ADDED MIXED ACIDS AND TOOK SAMPLES TO DRYNESS- SUBMITTED SAMPLES TO SEPARATIONS
2	08/31/17 17:33	CHEM	JDEMELAS	Added concentrated HNO3 to sample beakers and heated to dryness; Added 20 ml 8N HNO3 to samples and transferred to new, labeled C-Tubes, adding 8N HNO3 to bring volume to ~35 ml; Preconditioned resin columns with 50 ml 8N HNO3; Centrifuged samples as needed, and passed through columns; Rinsed C-Tubes with 20 ml 8N HNO3; Centrifuged rinsates and loaded onto columns; Rinsed columns with 40 ml 8N HNO3; Eluted Thorium with 50 ml of 8N HCl into clean, labeled 100-ml beakers; Dried-down samples on hotplate; Dissolved samples in ~10 ml of concentrated HCl; Transferred to new, labeled C-Tubes with deiononized water, bringing volume to ~15ml. Set samples aside for later precipitation and filtering.

8/31/17

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	17-07091
Analysis Code	ThISO
Run Number	1

#	Date	Dept	User	Notes
1	08/15/17 04:46	PREP	JHARVEY	ALIQUOTED AND ADDED SPIKES AND TRACERS- ADDED HF AND DRIED SAMPLES DOWN- ADDED MIXED ACIDS AND TOOK SAMPLES TO DRYNESS- SUBMITTED SAMPLES TO SEPARATIONS
2	08/31/17 17:33	CHEM	JDEMELAS	Added concentrated HNO3 to sample beakers and heated to dryness; Added 20 ml 8N HNO3 to samples and transferred to new, labeled C-Tubes, adding 8N HNO3 to bring volume to ~35 ml; Preconditioned resin columns with 50 ml 8N HNO3; Centrifuged samples as needed, and passed through columns; Rinsed C-Tubes with 20 ml 8N HNO3; Centrifuged rinsates and loaded onto columns; Rinsed columns with 40 ml 8N HNO3; Eluted Thorium with 50 ml of 8N HCl into clean, labeled 100-ml beakers; Dried-down samples on hotplate; Dissolved samples in ~10 ml of concentrated HCl; Transferred to new, labeled C-Tubes with deiononized water, bringing volume to ~15ml. Set samples aside for later precipitation and filtering.
3	09/01/17 05:43	CHEM	TSMITH	Followed steps 12.2.5 to 12.4.5 in AP-005 . (Precipitated and filtered samples for Thorium)

9-1-17
JMR

EBERLINE SERVICES

Reagents Used in an Analysis

Internal Work Order	
17-07091	
Analysis Code	Run
ThISO	1

Reagent ID	Reagent Name	Reagent Concentration	Analyst ID	Date Recorded
019093P	Hydrofluoric Acid	Reagent Grade	JHARVEY	8/15/2017
018971P	Nitric Acid	Reagent Grade	JHARVEY	8/15/2017
019133P	Perchloric Acid	Reagent Grade	JHARVEY	8/15/2017
018550P	Sulfuric Acid	Reagent Grade	JHARVEY	8/15/2017
017553P	Anion Exchange Resin	Reagent Grade	JDEMELAS	8/31/2017
019242S	Hydrochloric Acid	8N	JDEMELAS	8/31/2017
019134P	Hydrochloric Acid	Reagent Grade	JDEMELAS	8/31/2017
019092P	Nitric Acid	Reagent Grade	JDEMELAS	8/31/2017
019243S	Nitric Acid	8N	JDEMELAS	8/31/2017
019225S	Carbon substrate	Solution	TSMITH	9/1/2017
019106S	Cerrium Carrier	0.1mg/ml	TSMITH	9/1/2017
019063P	Ethyl Alcohol	1	TSMITH	9/1/2017
019227P	Hydrofluoric Acid	Reagent Grade	TSMITH	9/1/2017

Alpha #1

Date	Sample #	Client	Load Time	CT Time	Analyst	Tech
8/31/17	1708068A (1-6)	MPA	1508	2h50m	Rak	KB
9/1/17	Daily Pulse	LAB	0459	"	[illegible]	—
9/1/17	SECCAL(3-[illegible])	LAB	1135	2h50m	[illegible]	—
9/1/17	1708126A(1-5)	Smoky Mount	0839	2h50m	Pu[illegible]	C
9/1/17	1708126A(1)	Smoky Mount	0839	2h50m	Pu[illegible]	C
9/1/17	1707091A(19-20)	Weston	1409	2h50m	Th	KB
9/1/17	1708122A(1-4)	USA	1410	2h50m	[illegible]	KB

Alpha #3

Date	Sample #	Client	Load Time	C Time	Analyzed	Tech
8/29/17	1708014A(1-11)	Accutest	1729	2hr50	Rak	KB
8/29/17	1707089A(19-20)	Weston	1730	2hr50	UU	KB
8/30	Daily Pulse	LAB	0522	1	[illegible]	
8/30	1708116A(1-5)	Smoky Mount	0833	2hr50	Pu242	C
8/30	1708116A(1-5)	Smoky Mount	0834	2hr50	UU Iso	C
8/30	1707090A(1-6)	Weston	0835	2hr50	UU Iso	C
8/30	1708099A(1-8)	Zion	0836	5hr35	Pu Iso	C
8/30/17	1707090A(12-20)	Weston	1130	2hr50	UU	KB
8/30/17	1707089A(1-7)	Weston	1131	2hr50	Th	KB
8/30/17	1708122A(1-4)	USA	1424	2hr50	Rak	KB
8/30/17	1707089A(8-20)	Weston	1426	2hr50	Th	KB
8/31	Daily Pulse	LAB	0518	1	[illegible]	
8/31	1708019A(1-6)	Amo	0913	2hr50	Th Iso	C
8/31	1707090A(1-18)	Weston	0913	2hr50	Th Iso	C
8/31/17	1708116A(5)	Smoky Mt. Solutn	1212	2hr50	Am241	KB
8/31/17	1708085A(1-4,6,8,10,12,13)	UCOR	1213	2hr50	UU	KB
8/31/17	1708099A(1-7)	ESLLC Zion	1215	5hr35	Am241	KB
8/31/17	1708099A(1-7)	ESLLC Zion	1216	5hr35	Am243	KB
8/31/17	1708085A(14,18)	UCOR	1508	2hr50	UU	KB
8/31/17	1708029A(1-7)	Accutest	1509	2hr50	Rak	KB
8/31/17	1708064A(1-3,5)	UCOR	1815	2hr50	Rak	KB
8/31/17	1708075A(1-4)	UCOR	1816	2hr50	Rak	KB
9/1/17	Daily Pulse	LAB	0913	1	[illegible]	C
9/1/17	SECCAL(33-48)	LAB	0516	2hr50	[illegible]	C
9/1/17	SECCAL(49-60)	LAB	0457	2hr50	[illegible]	C
9/1/17	1708126A(2-4)	Smoky Mount	0839	2hr50	Pu242	C
9/1	1708064A(1-3,5,8)	UCOR	0841	2hr50	Pu Iso	C
9/1	1708064A(1-3,5)	UCOR	0842	2hr50	Pu242	C
9/1	1708064A(1,2)	UCOR	0842	2hr50	NP237	C
9/1/17	1707091A(1-3)	Weston	1024	2hr50	Th	KB
9/1/17	1708099A(1-7)	ESLLC Zion	1025	5hr35	Np	KB
9/1/17	1707091A(4-15)	Weston	1138	2hr50	Th	KB
9/1/17	1708064A(3,5)	UCOR	1137	2hr50	Np	KB
9/1/17	1707091A(16,17,18)	Weston	1317	2hr50	Th Iso	C

GAMMA NOTES

GE1

DATE	SAmple #	Client	Load Time	CT Time	Analysis	Tech
8/23/17	1707090-15	Weston	1541	1hr	✓	KB
8/23/17	1707090-17	Weston	1642	1hr	✓	KB
8/23/17	1707135-08	ERA	1745	8hrs	✓	KB
8/24	G4F16	LAB	0516	15	✓	C
8/24	DWlyR	LAB	0538	15	✓	
8/24	1707090-19	Weston	0555	1hr	✓	—
8/24	1708003-06	Weston	0702	1hr	✓	—
8/24	1708003-09	Weston	0805	1hr	✓	—
8/24	1708086-01	Ind Enviro	0907	15	Bm	C
8/24	1708086-03	Ind Enviro	0924	15	Bm	
8/24	1707091-~~08~~ 10	Weston	0940	1hr	✓	—
8/24	1707091-11	Weston	1041	1hr	✓	—
8/24	1708010-01	Access	1142	15	Bm	C
8/24	1708010-03	Access	1158	15	Bm	C
8/24/17	1707091-16	Weston	1214	1hr	✓	KB
8/24/17	1707091-19	Weston	1315	1hr	✓	KB

GE 2

DATE	SAmple #	Client	Load Time	CT. Time	Analysis	Tech
8/22/17	1708095-03	Eden Foods	1608	2hr	✓	KB
8/22/17	1708095-04	Eden Foods	1810	2hr	✓	KB
8/23	~~CA~~ 81601	KB	0517	15	✓	C
8/23	[illegible]	KB	0544	15	✓	—
8/23	1707088-17	Weston	[illegible]	[illegible]	✓	—
8/23	1707089-03	Weston	0705	[illegible]	✓	C
8/23	1707089-04	Weston	0811	[illegible]	✓	C
8/23	1707089-11	Weston	0917	[illegible]	✓	—
8/23	1707089-15	Weston	1017	[illegible]	✓	✓
8/23	1707089-02	Weston	1119	[illegible]	✓	—
8/23/17	1708086-02	Indust+Env.	1220	15 min	Ba	KB
8/23/17	1707090-06	Weston	1237	1hr	✓	KB
8/23/17	1707090-08	Weston	1339	1hr	✓	KB
8/23/17	1707090-12	Weston	1440	1hr	✓	KB
8/23/17	1708095-06	Eden Foods	1542	2hr	✓	KB
8/23/17	1708095-01	Eden Foods	1744	30 min	✓	KB
8/23/17	1708095-08	Eden Foods	1815	2hr	✓	KB
8/24	~~CA~~ 81601	KB	0517	15	✓	—
8/24	[illegible]	KB	0528	15	✓	—
8/24	1707090-20	Weston	0555	[illegible]	✓	—
8/24	1708003-07	Weston	0702	[illegible]	✓	—
8/24	1708003-02	Weston	0806	[illegible]	✓	—
8/24	1708086-02	Ind+Envir	0907	15	Ba	C
8/24	1708086-04	Ind+Envir	0924	15	Ba	
8/24	1707091-09	Weston	0940	[illegible]	✓	—
8/24	1707091-12	Weston	1041	[illegible]	✓	—
8/24	1708010-02	Access	1143	15	Ba	C
8/24	1708010-04	Access	1158	15	Ba	
8/24/17	1707091-17	Weston	1214	1hr	✓	KB
8/24/17	1707091-20	Weston	1315	1hr	✓	KB

GE 3

DATE	SAmple #	Client	LoadTime	CTiTime	Analysis	Tech
8/22/17	1707088-12	Weston	1727	1hr	✓	KB
8/22/17	1708095-05	Eden Foods	1828	2hr	✓	KB
8/23	~~CAS~~ 1602	LAB	0517	15	✓	[illegible]
8/23	[illegible]	LAB	0541	15	✓	
8/23	1707088-18	Weston	0601	1hr	✓	—
8/23	1707089-05	Weston	0705	1hr	✓	—
8/23	1707089-08	Weston	0811	1hr	✓	—
8/23	1707089-12	Weston	0917	1hr	✓	—
8/23	1707089-16	Weston	1017	1hr	✓	—
8/23	1707089-01	Weston	1119	3hr	✓	—
8/23	1707090-01	Weston	1152	3hr	✓	—
8/23/17	1708086-04	Indust.+Env.	1223	15 min	Ba	KB
8/23/17	1707090-02	Weston	1232	1hr	✓	KB
8/23/17	1707090-10	Weston	1339	1hr	✓	KB
8/23/17	1707090-13	Weston	1440	1hr	✓	KB
8/23/17	1708095-07	Eden Foods	1542	2hr	✓	KB
8/23/17	1708095-09	Eden Foods	1751	2hr	✓	KB
8/24	~~CAS~~ 1602	LAB	0517	15	✓	[illegible]
8/24	[illegible]	LAB	0538	15	✓	
8/24	1708003-03	Weston	0552	1hr	✓	[illegible]
8/24	1708003-04	Weston	0702	1hr	✓	
8/24	1708003-01	Weston	0806	3hr	✓	—
8/24	1707091-07	Weston	0838	1hr	✓	—
8/24	1707091-08	Weston	0935	1hr	✓	—
8/24	1708107-01	USA	1039	15	Ba	[illegible]
8/24	1708107-03	USA	1055	15	Ba	[illegible]
8/24	1707091-14	Weston	1111	1hr	✓	—
8/24/17	1707091-15	Weston	1212	1hr	✓	KB
8/24/17	1707091-18	Weston	1313	1hr	✓	KB

GE 4

DATE	SAmple #	Client	Load Time	CT. Time	Analysis	Tech
8/22/17	1708002-01	MPA	1454	15 mins	Ba	KB
8/22/17	1708002-05	MPA	1519	15 mins	Ba	KB
8/22/17	1708006-02	UCOR	1536	15 mins	Ba	KB
8/22/17	1708011-02	MPA	1553	15 min	Ba	KB
8/22/17	1708011-05	MPA	1610	15 min	Ba	KB
8/22/17	1707088-10	Weston	1626	1 hr	✓	KB
8/22/17	1707088-13	Weston	1727	1 hr	✓	KB
8/22/17	1708095-02	Eden Foods	1828	2 hr	✓	KB
8/23	GAW16	LAB	0517	15	✓	[illegible]
8/23	DWLyR	LAB	0544	15	✓	
8/23	1707088-19	Weston	0601	[illegible]	✓	—
8/23	1707089-06	Weston	0705	[illegible]	✓	—
8/23	1707089-09	Weston	0811	[illegible]	✓	—
8/23	1707089-13	Weston	0817	[illegible]	✓	—
8/23	1707089-17	Weston	1017	[illegible]	✓	—
8/23	1707090-03	Weston	1119	[illegible]	✓	[illegible]
8/23	1707090-04	Weston	1237	[illegible]	✓	
8/23/17	1708086-03	Indust+Env	1220	15 mins	Ba	KB
8/23/17	1707090-09	Weston	1339	1 hr	✓	KB
8/23/17	1707090-14	Weston	1441	1 hr	✓	KB
8/23/17	1707090-16	Weston	1541	1 hr	✓	KB
8/23/17	1707090-18	Weston	1642	1 hr	✓	KB
8/23/17	1708079-01	James R. Reed	1744	30 mins	✓	KB
8/23/17	1708079-02	James R. Reed	1816	6 hr	✓	KB
8/24	GAW14	LAB	0517	15	✓	[illegible]
8/24	DWLyR	LAB	0538	15	✓	
8/24	GAW16	LAB	0555	15	✓	—
8/24	1708003-05	Weston	0608	[illegible]	✓	—
8/24	1708003-08	Weston	0719	[illegible]	✓	—
8/24	1707091-03	Weston	0820	[illegible]	✓	[illegible]
8/24	1707091-04	Weston	0923	[illegible]	✓	[illegible]
8/24	1708107A-02	USA	1025	15	Ba	[illegible]
8/24	1708107-04	USA	1041	15	Ba	
8/24	1707091-13	Weston	1057	[illegible]	✓	—

GE 4

DATE	SAmple #	Client	Load Time	CT Time	Analysis	Tech
8/24/17	1707091-01	Weston	1259	30mins	r	KB
8/24/17	1707091-02	Weston	1229	1hr	r	KB

SECTION VIII

ANALYTICAL DATA (ISOTOPIC URANIUM)

Eberline Analytical
Oak Ridge Laboratory
Analysis Sheet

17-07091
UUISO
Run 1

Work Order	17-07091
Analysis Code	UUISO
Run	1
Date Received	7/18/2017
Lab Deadline	8/10/2017
Client	Weston Solutions, Inc.
Project	94759
Report Level	4
Activity Units	pCi
Aliquot Units	g
Matrix	SO
Method	EPA 908.0 Modified
Instrument Type	Alpha Spectroscopy
Radiometric Tracer	U-232
Radiometric Sol#	U-10a
Tracer Act (dpm/g)	18.32
Carrier	
Carrier Conc (mg/ml)	

Internal Fraction	Sample Desc	Client ID	Login CPM	Sample Date	Sample Aliquot
01	LCS	LCS		07/19/17 00:00	1.0000E+00
02	MBL	BLANK		07/19/17 00:00	1.0000E+00
03	DUP	HTC-A08-BKGD01-0006-01	46	05/15/17 16:41	1.0099E+00
04	DO	HTC-A08-BKGD01-0006-01	46	05/15/17 16:41	1.0101E+00
05	TRG	HTC-A08-BKGD01-0006-01 MS	33	05/15/17 16:41	1.0103E+00
06	TRG	HTC-A08-BKGD01-0006-01 MSD	33	05/15/17 16:41	1.0098E+00
07	TRG	HTC-A08-BKGD01-1218-01	41	05/15/17 16:35	1.0066E+00
08	TRG	HTC-A08-BKGD01-1824-01	30	05/15/17 16:32	1.0090E+00
09	TRG	HTC-A08-BKGD01-2430-01	34	05/15/17 16:29	1.0239E+00
10	TRG	HTC-A08-BKGD01-3036-01	44	05/15/17 16:26	1.0108E+00
11	TRG	HTC-A08-BKGD01-3642-01	43	05/15/17 16:23	1.0197E+00
12	TRG	HTC-A08-BKGD01-4248-01	30	05/15/17 16:20	1.0524E+00
13	TRG	HTC-A08-BKGD02-0006-01	47	05/15/17 15:56	1.0541E+00
14	TRG	HTC-A08-BKGD02-0612-01	38	05/15/17 15:53	1.0719E+00
15	TRG	HTC-A08-BKGD02-1218-01	47	05/15/17 15:50	1.0248E+00
16	TRG	HTC-A08-BKGD02-1824-01	38	05/15/17 15:47	1.0240E+00
17	TRG	HTC-A08-BKGD02-2430-01	40	05/15/17 15:44	1.0236E+00
18	TRG	HTC-A08-BKGD02-3036-01	32	05/15/17 15:41	1.0113E+00
19	TRG	HTC-A08-BKGD02-3642-01	33	05/15/17 15:38	1.0164E+00
20	TRG	HTC-A08-BKGD02-4248-01	43	05/15/17 15:35	1.0267E+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.

17-07091
UUISO
Run 1

Internal Fraction	Sample Desc	Tracer Aliquot (g)	Tracer Total ACT (dpm)	Radiometric Tracer (pCi)	Radiometric % Rec	Grav Carrier Added (ml)	Grav Filter Tare (g)	Grav Filter Final (g)	Grav Filter Net (g)	Grav % Rec	Mean % Rec	SAF 1*	SAF 2*
01	LCS	0.6828	12.5		0.00								
02	MBL	0.6757	12.4		0.00								
03	DUP	0.6726	12.3		0.00								
04	DO	0.6723	12.3		0.00								
05	TRG	0.6718	12.3		0.00								
06	TRG	0.6721	12.3		0.00								
07	TRG	0.6727	12.3		0.00								
08	TRG	0.6725	12.3		0.00								
09	TRG	0.6710	12.3		0.00								
10	TRG	0.6719	12.3		0.00								
11	TRG	0.6712	12.3		0.00								
12	TRG	0.6724	12.3		0.00								
13	TRG	0.6721	12.3		0.00								
14	TRG	0.6715	12.3		0.00								
15	TRG	0.6714	12.3		0.00								
16	TRG	0.6715	12.3		0.00								
17	TRG	0.6708	12.3		0.00								
18	TRG	0.6820	12.5		0.00								
19	TRG	0.6733	12.3		0.00								
20	TRG	0.6717	12.3		0.00								

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

17-07091
UUISO
Run 1

Internal Fraction	Sample Desc	Rough Prep Date	Rough Prep By	Prep Date	Prep By	Sep t0 Date/Time	Sep t0 By	Sep t1 Date/Time	Sep t1 By
01	LCS			08/14/17 13:40	JPACHELLA	09/07/17 12:59	JDEMELAS		
02	MBL			08/14/17 13:40	JPACHELLA	09/07/17 12:59	JDEMELAS		
03	DUP			08/14/17 13:40	JPACHELLA	09/07/17 12:59	JDEMELAS		
04	DO	08/03/17 06:56	KSALLINGS	08/14/17 13:40	JPACHELLA	09/07/17 12:59	JDEMELAS		
05	TRG	08/03/17 06:56	KSALLINGS	08/14/17 13:40	JPACHELLA	09/07/17 12:59	JDEMELAS		
06	TRG	08/03/17 06:56	KSALLINGS	08/14/17 13:40	JPACHELLA	09/07/17 12:59	JDEMELAS		
07	TRG	08/03/17 06:56	KSALLINGS	08/14/17 13:40	JPACHELLA	09/07/17 12:59	JDEMELAS		
08	TRG	08/03/17 06:56	KSALLINGS	08/14/17 13:40	JPACHELLA	09/07/17 12:59	JDEMELAS		
09	TRG	08/03/17 06:56	KSALLINGS	08/14/17 13:40	JPACHELLA	09/07/17 12:59	JDEMELAS		
10	TRG	08/03/17 06:56	KSALLINGS	08/14/17 13:40	JPACHELLA	09/07/17 12:59	JDEMELAS		
11	TRG	08/03/17 06:56	KSALLINGS	08/14/17 13:40	JPACHELLA	09/07/17 12:59	JDEMELAS		
12	TRG	08/03/17 06:56	KSALLINGS	08/14/17 13:40	JPACHELLA	09/07/17 12:59	JDEMELAS		
13	TRG	08/03/17 06:56	KSALLINGS	08/14/17 13:40	JPACHELLA	09/07/17 12:59	JDEMELAS		
14	TRG	08/03/17 06:56	KSALLINGS	08/14/17 13:40	JPACHELLA	09/07/17 12:59	JDEMELAS		
15	TRG	08/03/17 06:56	KSALLINGS	08/14/17 13:40	JPACHELLA	09/07/17 12:59	JDEMELAS		
16	TRG	08/03/17 06:56	KSALLINGS	08/14/17 13:40	JPACHELLA	09/07/17 12:59	JDEMELAS		
17	TRG	08/03/17 06:56	KSALLINGS	08/14/17 13:40	JPACHELLA	09/07/17 12:59	JDEMELAS		
18	TRG	08/03/17 06:56	KSALLINGS	08/14/17 13:40	JPACHELLA	09/07/17 12:59	JDEMELAS		
19	TRG	08/03/17 06:56	KSALLINGS	08/14/17 13:40	JPACHELLA	09/07/17 12:59	JDEMELAS		
20	TRG	08/03/17 06:56	KSALLINGS	08/14/17 13:40	JPACHELLA	09/07/17 12:59	JDEMELAS		

* 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: 17-07091-UUISO-1

Client: Weston Solutions, Inc.
Eberline Analytical Work Order: 17-07091
Analysis Code: UUISO
Run: 1

Lab Fraction	Nuclide	Sample Desc	Client Identification	Activity Units	Results	Error Estimate	MDA	LCS Known	LCS %R	LCS Flag	RPD Flag	MDA Flag	Blank Flag
01	U-234	LCS	LCS	pCi/g	6.36E+00	9.04E-01	9.24E-02	8.18E+00	77.78	OK		OK	
02	U-234	MBL	BLANK	pCi/g	5.62E-02	5.33E-02	6.53E-02					OK	OK
03	U-234	DUP	HTC-A08-BKGD01-0006-01	pCi/g	6.30E-01	1.84E-01	1.14E-01				OK	OK	
04	U-234	DO	HTC-A08-BKGD01-0006-01	pCi/g	5.73E-01	1.61E-01	5.42E-02					OK	
05	U-234	TRG	HTC-A08-BKGD01-0006-01 MS	pCi/g	7.80E+00	9.50E-01	5.61E-02					OK	
06	U-234	TRG	HTC-A08-BKGD01-0006-01 MSD	pCi/g	7.23E+00	8.89E-01	6.32E-02					OK	
07	U-234	TRG	HTC-A08-BKGD01-1218-01	pCi/g	8.36E-01	2.37E-01	8.23E-02					OK	
08	U-234	TRG	HTC-A08-BKGD01-1824-01	pCi/g	7.16E-01	2.14E-01	9.89E-02					OK	
09	U-234	TRG	HTC-A08-BKGD01-2430-01	pCi/g	7.88E-01	2.30E-01	7.73E-02					OK	
10	U-234	TRG	HTC-A08-BKGD01-3036-01	pCi/g	8.07E-01	2.19E-01	6.26E-02					OK	
11	U-234	TRG	HTC-A08-BKGD01-3642-01	pCi/g	7.64E-01	2.36E-01	1.00E-01					OK	
12	U-234	TRG	HTC-A08-BKGD01-4248-01	pCi/g	7.34E-01	2.18E-01	1.03E-01					OK	
13	U-234	TRG	HTC-A08-BKGD02-0006-01	pCi/g	7.13E-01	2.13E-01	8.82E-02					OK	
14	U-234	TRG	HTC-A08-BKGD02-0612-01	pCi/g	6.66E-01	2.06E-01	9.58E-02					OK	
15	U-234	TRG	HTC-A08-BKGD02-1218-01	pCi/g	7.71E-01	2.28E-01	9.62E-02					OK	
16	U-234	TRG	HTC-A08-BKGD02-1824-01	pCi/g	8.59E-01	2.26E-01	7.20E-02					OK	
17	U-234	TRG	HTC-A08-BKGD02-2430-01	pCi/g	8.85E-01	2.36E-01	8.45E-02					OK	
18	U-234	TRG	HTC-A08-BKGD02-3036-01	pCi/g	5.70E-01	1.80E-01	7.73E-02					OK	
19	U-234	TRG	HTC-A08-BKGD02-3642-01	pCi/g	5.33E-01	1.81E-01	8.36E-02					OK	
20	U-234	TRG	HTC-A08-BKGD02-4248-01	pCi/g	6.46E-01	2.00E-01	8.66E-02					OK	

Preliminary Data Report & Analytical Calculations
Work Order: 17-07091-UUISO-1

Run: 1
Analysis Code: UUISO
Eberline Analytical Work Order: 17-07091
Client: Weston Solutions, Inc.
9800

Lab Fraction	Nuclide	Sample Desc	Sample Date	Sample Aliquot	Radiometric % Rec	Grav % Rec	Mean % Rec	SAF	Sep t0 Date/Time	Sep t1 Date/Time
01	U-234	LCS	07/19/17 00:00	1.00E+00	121.19	0.00	0.00		9/7/2017 12:59	
02	U-234	MBL	07/19/17 00:00	1.00E+00	129.18	0.00	0.00		9/7/2017 12:59	
03	U-234	DUP	05/15/17 16:41	1.01E+00	124.24	0.00	0.00		9/7/2017 12:59	
04	U-234	DO	05/15/17 16:41	1.01E+00	127.79	0.00	0.00		9/7/2017 12:59	
05	U-234	TRG	05/15/17 16:41	1.01E+00	130.74	0.00	0.00		9/7/2017 12:59	
06	U-234	TRG	05/15/17 16:41	1.01E+00	134.85	0.00	0.00		9/7/2017 12:59	
07	U-234	TRG	05/15/17 16:35	1.01E+00	107.15	0.00	0.00		9/7/2017 12:59	
08	U-234	TRG	05/15/17 16:32	1.01E+00	110.41	0.00	0.00		9/7/2017 12:59	
09	U-234	TRG	05/15/17 16:29	1.02E+00	108.51	0.00	0.00		9/7/2017 12:59	
10	U-234	TRG	05/15/17 16:26	1.01E+00	122.91	0.00	0.00		9/7/2017 12:59	
11	U-234	TRG	05/15/17 16:23	1.02E+00	109.80	0.00	0.00		9/7/2017 12:59	
12	U-234	TRG	05/15/17 16:20	1.05E+00	125.53	0.00	0.00		9/7/2017 12:59	
13	U-234	TRG	05/15/17 15:56	1.05E+00	118.84	0.00	0.00		9/7/2017 12:59	
14	U-234	TRG	05/15/17 15:53	1.07E+00	130.03	0.00	0.00		9/7/2017 12:59	
15	U-234	TRG	05/15/17 15:50	1.02E+00	111.21	0.00	0.00		9/7/2017 12:59	
16	U-234	TRG	05/15/17 15:47	1.02E+00	123.39	0.00	0.00		9/7/2017 12:59	
17	U-234	TRG	05/15/17 15:44	1.02E+00	116.15	0.00	0.00		9/7/2017 12:59	
18	U-234	TRG	05/15/17 15:41	1.01E+00	114.51	0.00	0.00		9/7/2017 12:59	
19	U-234	TRG	05/15/17 15:38	1.02E+00	126.71	0.00	0.00		9/7/2017 12:59	
20	U-234	TRG	05/15/17 15:35	1.03E+00	108.28	0.00	0.00		9/7/2017 12:59	

Preliminary Data Report & Analytical Calculations

Work Order: 17-07091-UUISO-1

Client: Weston Solutions, Inc.
Eberline Analytical Work Order: 17-07091
Analysis Code: UUISO
Run: 1
Z800

Lab Fraction	Nuclide	Sample Desc	Counting Date/Time	Halflife (days)	Detect	Carrier	Count Time	Counts	Bkg CPM	Eff
01	U-234	LCS	09/07/17 14:07		A_Spec	Alpha_003	170	4.54 E+02	7.00 E-03	15.6
02	U-234	MBL	09/07/17 14:07		A_Spec	Alpha_004	170.02	5.15 E+00	5.00 E-03	18.8
03	U-234	DUP	09/07/17 14:07		A_Spec	Alpha_010	170.02	5.57 E+01	2.50 E-02	18.7
04	U-234	DO	09/07/17 14:07		A_Spec	Alpha_011	170	5.55 E+01	3.00 E-03	19.9
05	U-234	TRG	09/07/17 14:07		A_Spec	Alpha_012	170	7.29 E+02	3.00 E-03	18.8
06	U-234	TRG	09/07/17 14:07		A_Spec	Alpha_014	170.02	6.85 E+02	5.00 E-03	18.5
07	U-234	TRG	09/07/17 14:07		A_Spec	Alpha_045	170	5.73 E+01	4.00 E-03	16.9
08	U-234	TRG	09/07/17 14:07		A_Spec	Alpha_046	170	5.15 E+01	9.00 E-03	17.1
09	U-234	TRG	09/07/17 14:07		A_Spec	Alpha_047	170	5.35 E+01	3.00 E-03	16.2
10	U-234	TRG	09/07/17 14:07		A_Spec	Alpha_048	170	6.17 E+01	2.00 E-03	16.3
11	U-234	TRG	09/07/17 14:08		A_Spec	Alpha_049	170	4.80 E+01	6.00 E-03	14.9
12	U-234	TRG	09/07/17 14:08		A_Spec	Alpha_050	170	5.23 E+01	1.00 E-02	14.3
13	U-234	TRG	09/07/17 14:08		A_Spec	Alpha_053	170	5.10 E+01	6.00 E-03	15.1
14	U-234	TRG	09/07/17 14:08		A_Spec	Alpha_054	170	4.76 E+01	8.00 E-03	13.6
15	U-234	TRG	09/07/17 14:08		A_Spec	Alpha_056	170	5.28 E+01	7.00 E-03	15.9
16	U-234	TRG	09/07/17 14:08		A_Spec	Alpha_057	170	6.73 E+01	4.00 E-03	16.5
17	U-234	TRG	09/07/17 14:08		A_Spec	Alpha_058	170	6.60 E+01	6.00 E-03	16.6
18	U-234	TRG	09/07/17 14:08		A_Spec	Alpha_059	170	4.42 E+01	5.00 E-03	17.8
19	U-234	TRG	09/07/17 14:08		A_Spec	Alpha_060	170	3.82 E+01	5.00 E-03	14.8
20	U-234	TRG	09/07/17 14:31		A_Spec	Alpha_052	170	4.70 E+01	6.00 E-03	17.4

Preliminary Data Report & Analytical Calculations

Work Order: 17-07091-UUISO-1

Run: 1
Analysis Code: UUISO
Eberline Analytical Work Order: 17-07091
Client: Weston Solutions, Inc.

Lab Fraction	Nuclide	Sample Desc	Client Identification	Activity Units	Results	Error Estimate	MDA	LCS Known	LCS %R	LCS Flag	RPD Flag	MDA Flag	Blank Flag
01	U-238	LCS	LCS	pCi/g	6.40E+00	9.07E-01	7.33E-02	7.93E+00	80.77	OK		OK	
02	U-238	MBL	BLANK	pCi/g	9.39E-02	6.87E-02	7.45E-02					OK	OK
03	U-238	DUP	HTC-A08-BKGD01-0006-01	pCi/g	5.55E-01	1.67E-01	8.27E-02				OK	OK	
04	U-238	DO	HTC-A08-BKGD01-0006-01	pCi/g	5.59E-01	1.59E-01	5.80E-02					OK	
05	U-238	TRG	HTC-A08-BKGD01-0006-01 MS	pCi/g	8.19E+00	9.89E-01	5.58E-02					OK	
06	U-238	TRG	HTC-A08-BKGD01-0006-01 MSD	pCi/g	7.27E+00	8.93E-01	6.29E-02					OK	
07	U-238	TRG	HTC-A08-BKGD01-1218-01	pCi/g	8.08E-01	2.31E-01	6.94E-02					OK	
08	U-238	TRG	HTC-A08-BKGD01-1824-01	pCi/g	6.69E-01	2.06E-01	1.02E-01					OK	
09	U-238	TRG	HTC-A08-BKGD01-2430-01	pCi/g	5.52E-01	1.88E-01	7.01E-02					OK	
10	U-238	TRG	HTC-A08-BKGD01-3036-01	pCi/g	6.75E-01	1.98E-01	5.44E-02					OK	
11	U-238	TRG	HTC-A08-BKGD01-3642-01	pCi/g	6.87E-01	2.21E-01	8.95E-02					OK	
12	U-238	TRG	HTC-A08-BKGD01-4248-01	pCi/g	6.00E-01	1.94E-01	8.80E-02					OK	
13	U-238	TRG	HTC-A08-BKGD02-0006-01	pCi/g	6.94E-01	2.08E-01	5.82E-02					OK	
14	U-238	TRG	HTC-A08-BKGD02-0612-01	pCi/g	6.21E-01	1.96E-01	6.65E-02					OK	
15	U-238	TRG	HTC-A08-BKGD02-1218-01	pCi/g	7.46E-01	2.22E-01	8.20E-02					OK	
16	U-238	TRG	HTC-A08-BKGD02-1824-01	pCi/g	7.71E-01	2.11E-01	6.08E-02					OK	
17	U-238	TRG	HTC-A08-BKGD02-2430-01	pCi/g	7.95E-01	2.20E-01	7.01E-02					OK	
18	U-238	TRG	HTC-A08-BKGD02-3036-01	pCi/g	7.45E-01	2.09E-01	7.71E-02					OK	
19	U-238	TRG	HTC-A08-BKGD02-3642-01	pCi/g	4.38E-01	1.62E-01	7.29E-02					OK	
20	U-238	TRG	HTC-A08-BKGD02-4248-01	pCi/g	5.68E-01	1.85E-01	7.18E-02					OK	

8800

Preliminary Data Report & Analytical Calculations
Work Order: 17-07091-UUISO-1

Run: 1
Analysis Code: UUISO
Eberline Analytical Work Order: 17-07091
Client: Weston Solutions, Inc.
6800

Lab Fraction	Nuclide	Sample Desc	Sample Date	Sample Aliquot	Radiometric % Rec	Grav % Rec	Mean % Rec	SAF	Sep t0 Date/Time	Sep t1 Date/Time
01	U-238	LCS	07/19/17 00:00	1.00E+00	121.19	0.00	0.00		9/7/2017 12:59	
02	U-238	MBL	07/19/17 00:00	1.00E+00	129.18	0.00	0.00		9/7/2017 12:59	
03	U-238	DUP	05/15/17 16:41	1.01E+00	124.24	0.00	0.00		9/7/2017 12:59	
04	U-238	DO	05/15/17 16:41	1.01E+00	127.79	0.00	0.00		9/7/2017 12:59	
05	U-238	TRG	05/15/17 16:41	1.01E+00	130.74	0.00	0.00		9/7/2017 12:59	
06	U-238	TRG	05/15/17 16:41	1.01E+00	134.85	0.00	0.00		9/7/2017 12:59	
07	U-238	TRG	05/15/17 16:35	1.01E+00	107.15	0.00	0.00		9/7/2017 12:59	
08	U-238	TRG	05/15/17 16:32	1.01E+00	110.41	0.00	0.00		9/7/2017 12:59	
09	U-238	TRG	05/15/17 16:29	1.02E+00	108.51	0.00	0.00		9/7/2017 12:59	
10	U-238	TRG	05/15/17 16:26	1.01E+00	122.91	0.00	0.00		9/7/2017 12:59	
11	U-238	TRG	05/15/17 16:23	1.02E+00	109.80	0.00	0.00		9/7/2017 12:59	
12	U-238	TRG	05/15/17 16:20	1.05E+00	125.53	0.00	0.00		9/7/2017 12:59	
13	U-238	TRG	05/15/17 15:56	1.05E+00	118.84	0.00	0.00		9/7/2017 12:59	
14	U-238	TRG	05/15/17 15:53	1.07E+00	130.03	0.00	0.00		9/7/2017 12:59	
15	U-238	TRG	05/15/17 15:50	1.02E+00	111.21	0.00	0.00		9/7/2017 12:59	
16	U-238	TRG	05/15/17 15:47	1.02E+00	123.39	0.00	0.00		9/7/2017 12:59	
17	U-238	TRG	05/15/17 15:44	1.02E+00	116.15	0.00	0.00		9/7/2017 12:59	
18	U-238	TRG	05/15/17 15:41	1.01E+00	114.51	0.00	0.00		9/7/2017 12:59	
19	U-238	TRG	05/15/17 15:38	1.02E+00	126.71	0.00	0.00		9/7/2017 12:59	
20	U-238	TRG	05/15/17 15:35	1.03E+00	108.28	0.00	0.00		9/7/2017 12:59	

Preliminary Data Report & Analytical Calculations

Work Order: 17-07091-UUISO-1

Run: 1
Analysis Code: UUISO
Eberline Analytical Work Order: 17-07091
Client: Weston Solutions, Inc.
0600

Lab Fraction	Nuclide	Sample Desc	Counting Date/Time	Halflife (days)	Detect	Carrier	Count Time	Counts	Bkg CPM	Eff
01	U-238	LCS	09/07/17 14:07		A_Spec	Alpha_003	170	4.58 E+02	3.00 E-03	15.6
02	U-238	MBL	09/07/17 14:07		A_Spec	Alpha_004	170.02	8.64 E+00	8.00 E-03	18.8
03	U-238	DUP	09/07/17 14:07		A_Spec	Alpha_010	170.02	4.93 E+01	1.00 E-02	18.7
04	U-238	DO	09/07/17 14:07		A_Spec	Alpha_011	170	5.43 E+01	4.00 E-03	19.9
05	U-238	TRG	09/07/17 14:07		A_Spec	Alpha_012	170	7.69 E+02	3.00 E-03	18.8
06	U-238	TRG	09/07/17 14:07		A_Spec	Alpha_014	170.02	6.92 E+02	5.00 E-03	18.5
07	U-238	TRG	09/07/17 14:07		A_Spec	Alpha_045	170	5.57 E+01	2.00 E-03	16.9
08	U-238	TRG	09/07/17 14:07		A_Spec	Alpha_046	170	4.83 E+01	1.00 E-02	17.1
09	U-238	TRG	09/07/17 14:07		A_Spec	Alpha_047	170	3.77 E+01	2.00 E-03	16.2
10	U-238	TRG	09/07/17 14:07		A_Spec	Alpha_048	170	5.18 E+01	1.00 E-03	16.3
11	U-238	TRG	09/07/17 14:08		A_Spec	Alpha_049	170	4.33 E+01	4.00 E-03	14.9
12	U-238	TRG	09/07/17 14:08		A_Spec	Alpha_050	170	4.30 E+01	6.00 E-03	14.3
13	U-238	TRG	09/07/17 14:08		A_Spec	Alpha_053	170	4.98 E+01	1.00 E-03	15.1
14	U-238	TRG	09/07/17 14:08		A_Spec	Alpha_054	170	4.47 E+01	2.00 E-03	13.6
15	U-238	TRG	09/07/17 14:08		A_Spec	Alpha_056	170	5.13 E+01	4.00 E-03	15.9
16	U-238	TRG	09/07/17 14:08		A_Spec	Alpha_057	170	6.07 E+01	2.00 E-03	16.5
17	U-238	TRG	09/07/17 14:08		A_Spec	Alpha_058	170	5.95 E+01	3.00 E-03	16.6
18	U-238	TRG	09/07/17 14:08		A_Spec	Alpha_059	170	5.80 E+01	0.00 E+00	17.8
19	U-238	TRG	09/07/17 14:08		A_Spec	Alpha_060	170	3.15 E+01	3.00 E-03	14.8
20	U-238	TRG	09/07/17 14:31		A_Spec	Alpha_052	170	4.15 E+01	3.00 E-03	17.4

Preliminary Data Report & Analytical Calculations

Work Order: 17-07091-UUISO-1

Run: 1
Analysis Code: UUISO
Eberline Analytical Work Order: 17-07091
Client: Weston Solutions, Inc.

Lab Fraction	Nuclide	Sample Desc	Client Identification	Activity Units	Results	Error Estimate	MDA	LCS Known	LCS %R	LCS Flag	RPD Flag	MDA Flag	Blank Flag
01	U-235	LCS	LCS	pCi/g	5.65E-01	2.04E-01	8.27E-02					OK	
02	U-235	MBL	BLANK	pCi/g	4.70E-02	5.35E-02	7.06E-02					OK	OK
03	U-235	DUP	HTC-A08-BKGD01-0006-01	pCi/g	5.97E-02	7.49E-02	1.20E-01				NA	OK	
04	U-235	DO	HTC-A08-BKGD01-0006-01	pCi/g	7.40E-02	6.74E-02	8.39E-02					OK	
05	U-235	TRG	HTC-A08-BKGD01-0006-01 MS	pCi/g	5.32E-01	1.74E-01	7.44E-02					OK	
06	U-235	TRG	HTC-A08-BKGD01-0006-01 MSD	pCi/g	4.23E-01	1.52E-01	6.83E-02					OK	
07	U-235	TRG	HTC-A08-BKGD01-1218-01	pCi/g	1.44E-01	1.07E-01	1.08E-01					OK	
08	U-235	TRG	HTC-A08-BKGD01-1824-01	pCi/g	1.43E-01	1.03E-01	9.68E-02					OK	
09	U-235	TRG	HTC-A08-BKGD01-2430-01	pCi/g	1.06E-01	8.82E-02	7.58E-02					OK	
10	U-235	TRG	HTC-A08-BKGD01-3036-01	pCi/g	1.05E-01	8.49E-02	8.47E-02					OK	
11	U-235	TRG	HTC-A08-BKGD01-3642-01	pCi/g	1.34E-01	1.03E-01	8.20E-02					OK	
12	U-235	TRG	HTC-A08-BKGD01-4248-01	pCi/g	6.89E-02	7.75E-02	1.09E-01					OK	
13	U-235	TRG	HTC-A08-BKGD02-0006-01	pCi/g	6.91E-02	7.60E-02	1.04E-01					OK	
14	U-235	TRG	HTC-A08-BKGD02-0612-01	pCi/g	1.35E-01	9.69E-02	7.19E-02					OK	
15	U-235	TRG	HTC-A08-BKGD02-1218-01	pCi/g	9.28E-02	8.82E-02	1.08E-01					OK	
16	U-235	TRG	HTC-A08-BKGD02-1824-01	pCi/g	4.19E-02	5.41E-02	7.53E-02					OK	
17	U-235	TRG	HTC-A08-BKGD02-2430-01	pCi/g	7.15E-02	7.38E-02	9.33E-02					OK	
18	U-235	TRG	HTC-A08-BKGD02-3036-01	pCi/g	5.83E-02	6.32E-02	7.61E-02					OK	
19	U-235	TRG	HTC-A08-BKGD02-3642-01	pCi/g	3.15E-02	4.82E-02	7.19E-02					OK	
20	U-235	TRG	HTC-A08-BKGD02-4248-01	pCi/g	6.49E-02	6.71E-02	7.08E-02					OK	

Preliminary Data Report & Analytical Calculations

Work Order: 17-07091-UUISO-1

Run: 1
Analysis Code: UUISO
Eberline Analytical Work Order: 17-07091
Client: Weston Solutions, Inc.
0092

Lab Fraction	Nuclide	Sample Desc	Sample Date	Sample Aliquot	Radiometric % Rec	Grav % Rec	Mean % Rec	SAF	Sep t0 Date/Time	Sep t1 Date/Time
01	U-235	LCS	07/19/17 00:00	1.00E+00	121.19	0.00	0.00		9/7/2017 12:59	
02	U-235	MBL	07/19/17 00:00	1.00E+00	129.18	0.00	0.00		9/7/2017 12:59	
03	U-235	DUP	05/15/17 16:41	1.01E+00	124.24	0.00	0.00		9/7/2017 12:59	
04	U-235	DO	05/15/17 16:41	1.01E+00	127.79	0.00	0.00		9/7/2017 12:59	
05	U-235	TRG	05/15/17 16:41	1.01E+00	130.74	0.00	0.00		9/7/2017 12:59	
06	U-235	TRG	05/15/17 16:41	1.01E+00	134.85	0.00	0.00		9/7/2017 12:59	
07	U-235	TRG	05/15/17 16:35	1.01E+00	107.15	0.00	0.00		9/7/2017 12:59	
08	U-235	TRG	05/15/17 16:32	1.01E+00	110.41	0.00	0.00		9/7/2017 12:59	
09	U-235	TRG	05/15/17 16:29	1.02E+00	108.51	0.00	0.00		9/7/2017 12:59	
10	U-235	TRG	05/15/17 16:26	1.01E+00	122.91	0.00	0.00		9/7/2017 12:59	
11	U-235	TRG	05/15/17 16:23	1.02E+00	109.80	0.00	0.00		9/7/2017 12:59	
12	U-235	TRG	05/15/17 16:20	1.05E+00	125.53	0.00	0.00		9/7/2017 12:59	
13	U-235	TRG	05/15/17 15:56	1.05E+00	118.84	0.00	0.00		9/7/2017 12:59	
14	U-235	TRG	05/15/17 15:53	1.07E+00	130.03	0.00	0.00		9/7/2017 12:59	
15	U-235	TRG	05/15/17 15:50	1.02E+00	111.21	0.00	0.00		9/7/2017 12:59	
16	U-235	TRG	05/15/17 15:47	1.02E+00	123.39	0.00	0.00		9/7/2017 12:59	
17	U-235	TRG	05/15/17 15:44	1.02E+00	116.15	0.00	0.00		9/7/2017 12:59	
18	U-235	TRG	05/15/17 15:41	1.01E+00	114.51	0.00	0.00		9/7/2017 12:59	
19	U-235	TRG	05/15/17 15:38	1.02E+00	126.71	0.00	0.00		9/7/2017 12:59	
20	U-235	TRG	05/15/17 15:35	1.03E+00	108.28	0.00	0.00		9/7/2017 12:59	

Preliminary Data Report & Analytical Calculations

Work Order: 17-07091-UUISO-1

Run: 1
Analysis Code: UUISO
Eberline Analytical Work Order: 17-07091
Client: Weston Solutions, Inc.
0093

Lab Fraction	Nuclide	Sample Desc	Counting Date/Time	Halflife (days)	Detect	Carrier	Count Time	Counts	Bkg CPM	Eff
01	U-235	LCS	09/07/17 14:07		A_Spec	Alpha_003	170	3.27 E+01	2.00 E-03	15.6
02	U-235	MBL	09/07/17 14:07		A_Spec	Alpha_004	170.02	3.49 E+00	3.00 E-03	18.8
03	U-235	DUP	09/07/17 14:07		A_Spec	Alpha_010	170.02	4.28 E+00	1.60 E-02	18.7
04	U-235	DO	09/07/17 14:07		A_Spec	Alpha_011	170	5.81 E+00	7.00 E-03	19.9
05	U-235	TRG	09/07/17 14:07		A_Spec	Alpha_012	170	4.03 E+01	4.00 E-03	18.8
06	U-235	TRG	09/07/17 14:07		A_Spec	Alpha_014	170.02	3.25 E+01	3.00 E-03	18.5
07	U-235	TRG	09/07/17 14:07		A_Spec	Alpha_045	170	8.00 E+00	0.00 E+00	16.9
08	U-235	TRG	09/07/17 14:07		A_Spec	Alpha_046	170	8.32 E+00	4.00 E-03	17.1
09	U-235	TRG	09/07/17 14:07		A_Spec	Alpha_047	170	5.83 E+00	1.00 E-03	16.2
10	U-235	TRG	09/07/17 14:07		A_Spec	Alpha_048	170	6.49 E+00	3.00 E-03	16.3
11	U-235	TRG	09/07/17 14:08		A_Spec	Alpha_049	170	6.83 E+00	1.00 E-03	14.9
12	U-235	TRG	09/07/17 14:08		A_Spec	Alpha_050	170	3.98 E+00	6.00 E-03	14.3
13	U-235	TRG	09/07/17 14:08		A_Spec	Alpha_053	170	4.00 E+00	0.00 E+00	15.1
14	U-235	TRG	09/07/17 14:08		A_Spec	Alpha_054	170	7.83 E+00	1.00 E-03	13.6
15	U-235	TRG	09/07/17 14:08		A_Spec	Alpha_056	170	5.15 E+00	5.00 E-03	15.9
16	U-235	TRG	09/07/17 14:08		A_Spec	Alpha_057	170	2.66 E+00	2.00 E-03	16.5
17	U-235	TRG	09/07/17 14:08		A_Spec	Alpha_058	170	4.32 E+00	4.00 E-03	16.6
18	U-235	TRG	09/07/17 14:08		A_Spec	Alpha_059	170	3.66 E+00	2.00 E-03	17.8
19	U-235	TRG	09/07/17 14:08		A_Spec	Alpha_060	170	1.83 E+00	1.00 E-03	14.8
20	U-235	TRG	09/07/17 14:31		A_Spec	Alpha_052	170	3.83 E+00	1.00 E-03	17.4

Count Room Report
Client: Weston Solutions, Inc.

17-07091-UUISO-1 (pCi/g) in SO
Tracer ID: U-10a

Internal Fraction	Sample Desc	Client ID	Sample Date	Sample Aliquot	Tracer Aliquot (g)	Tracer ACT (dpm)	Radiometric Tracer (pCi)	Radiometric % Rec	SAF 1*	SAF 2*
01	LCS	LCS	07/19/17 00:00	1.0000	0.6828	12.5089		0.00		
02	MBL	BLANK	07/19/17 00:00	1.0000	0.6757	12.3788		0.00		
03	DUP	HTC-A08-BKGD01-0006-01	05/15/17 16:41	1.0099	0.6726	12.3220		0.00		
04	DO	HTC-A08-BKGD01-0006-01	05/15/17 16:41	1.0101	0.6723	12.3165		0.00		
05	TRG	HTC-A08-BKGD01-0006-01 MS	05/15/17 16:41	1.0103	0.6718	12.3074		0.00		
06	TRG	TC-A08-BKGD01-0006-01 MS	05/15/17 16:41	1.0098	0.6721	12.3129		0.00		
07	TRG	HTC-A08-BKGD01-1218-01	05/15/17 16:35	1.0066	0.6727	12.3239		0.00		
08	TRG	HTC-A08-BKGD01-1824-01	05/15/17 16:32	1.0090	0.6725	12.3202		0.00		
09	TRG	HTC-A08-BKGD01-2430-01	05/15/17 16:29	1.0239	0.6710	12.2927		0.00		
10	TRG	HTC-A08-BKGD01-3036-01	05/15/17 16:26	1.0108	0.6719	12.3092		0.00		
11	TRG	HTC-A08-BKGD01-3642-01	05/15/17 16:23	1.0197	0.6712	12.2964		0.00		
12	TRG	HTC-A08-BKGD01-4248-01	05/15/17 16:20	1.0524	0.6724	12.3184		0.00		
13	TRG	HTC-A08-BKGD02-0006-01	05/15/17 15:56	1.0541	0.6721	12.3129		0.00		
14	TRG	HTC-A08-BKGD02-0612-01	05/15/17 15:53	1.0719	0.6715	12.3019		0.00		
15	TRG	HTC-A08-BKGD02-1218-01	05/15/17 15:50	1.0248	0.6714	12.3000		0.00		
16	TRG	HTC-A08-BKGD02-1824-01	05/15/17 15:47	1.0240	0.6715	12.3019		0.00		
17	TRG	HTC-A08-BKGD02-2430-01	05/15/17 15:44	1.0236	0.6708	12.2891		0.00		
18	TRG	HTC-A08-BKGD02-3036-01	05/15/17 15:41	1.0113	0.6820	12.4942		0.00		
19	TRG	HTC-A08-BKGD02-3642-01	05/15/17 15:38	1.0164	0.6733	12.3349		0.00		
20	TRG	HTC-A08-BKGD02-4248-01	05/15/17 15:35	1.0267	0.6717	12.3055		0.00		

Spike and Tracer Worksheet

Internal Work Order	Run	Analysis Code	Date	Technician	Technician Initials	Witness Initials
17-07091	1	UUISO	8/14/2017 13:18	JPACHELLA	JMP	

LCS & Matrix Spikes					LCS	MS	LCSD	MSD	LCS		MS		LCSD		MSD	
Isotope	Sol #	Activity dpm/g	Solution Date	Approx Addition	Volume Used (g)	Volume Used (g)	Volume Used (g)	Volume Used (g)	Known pCi	Error Estimate	Added pCi	Error Estimate	Known pCi	Error Estimate	Added pCi	Error Estimate
U-234	U-8a	32.000	8/14/2017	0.550	0.5676	0.5641		0.5632	8.18	0.295	8.13	0.293	0.00	0.000	8.12	0.292
U-238	U-8a	31.000	8/14/2017	0.550	0.5676	0.5641		0.5632	7.93	0.285	7.88	0.284	0.00	0.000	7.86	0.283

Tracers

fraction	Isotope	Sol #	Activity dpm/g	Solution Date	Volume Used (g)	Approx Addition
01	U-232	U-10a	18.320	8/14/2017	0.6828	0.6600
02	U-232	U-10a	18.320	8/14/2017	0.6757	0.6600
03	U-232	U-10a	18.320	8/14/2017	0.6726	0.6600
04	U-232	U-10a	18.320	8/14/2017	0.6723	0.6600
05	U-232	U-10a	18.320	8/14/2017	0.6718	0.6600
06	U-232	U-10a	18.320	8/14/2017	0.6721	0.6600
07	U-232	U-10a	18.320	8/14/2017	0.6727	0.6600
08	U-232	U-10a	18.320	8/14/2017	0.6725	0.6600
09	U-232	U-10a	18.320	8/14/2017	0.6710	0.6600
10	U-232	U-10a	18.320	8/14/2017	0.6719	0.6600
11	U-232	U-10a	18.320	8/14/2017	0.6712	0.6600
12	U-232	U-10a	18.320	8/14/2017	0.6724	0.6600
13	U-232	U-10a	18.320	8/14/2017	0.6721	0.6600
14	U-232	U-10a	18.320	8/14/2017	0.6715	0.6600
15	U-232	U-10a	18.320	8/14/2017	0.6714	0.6600
16	U-232	U-10a	18.320	8/14/2017	0.6715	0.6600
17	U-232	U-10a	18.320	8/14/2017	0.6708	0.6600
18	U-232	U-10a	18.320	8/14/2017	0.6820	0.6600
19	U-232	U-10a	18.320	8/14/2017	0.6733	0.6600
20	U-232	U-10a	18.320	8/14/2017	0.6717	0.6600

Balance Printer Tapes

Tracer

0.6828 g
0.6757 g
0.6726 g
0.6723 g
0.6718 g
0.6721 g
0.6727 g
0.6725 g
0.6710 g
0.6719 g
0.6712 g
0.6724 g
0.6721 g
0.6715 g
0.6714 g
0.6715 g
0.6708 g
0.6720 g
0.6753 g
0.6717 g

LCS

0.5676 g

Matrix Spike

0.5641 g

0.5632 g

0095

Eberline Analytical
Oak Ridge Laboratory

Aliquot Worksheet

Work Order	Run	Analysis Code	Rpt Units	Lab Deadline	Technician
17-07091	1	UUISO	grams	8/10/2017	JPACHELLA

Lab Fraction	Weston Solutions, Inc. Client ID	Sample Type	Muffle Data	Dilution Data			Aliquot Data		MS Aliquot Data		H-3 Solids Only	
			Ratio Post/Pre	No of Dils	Dil Factor	Ratio	Aliquot	Net Equiv	Aliquot	Net Equiv	Water Added (ml)	H3 Dist Aliq
01	LCS	LCS					1.0000E+00	1.0000E+00				
02	BLANK	MBL					1.0000E+00	1.0000E+00				
03	HTC-A08-BKGD01-0006-01	DUP					1.0099E+00	1.0099E+00				
04	HTC-A08-BKGD01-0006-01	DO					1.0101E+00	1.0101E+00				
05	HTC-A08-BKGD01-0006-01 MS	TRG					1.0103E+00	1.0103E+00				
06	HTC-A08-BKGD01-0006-01 MSD	TRG					1.0098E+00	1.0098E+00				
07	HTC-A08-BKGD01-1218-01	TRG					1.0066E+00	1.0066E+00				
08	HTC-A08-BKGD01-1824-01	TRG					1.0090E+00	1.0090E+00				
09	HTC-A08-BKGD01-2430-01	TRG					1.0239E+00	1.0239E+00				
10	HTC-A08-BKGD01-3036-01	TRG					1.0108E+00	1.0108E+00				
11	HTC-A08-BKGD01-3642-01	TRG					1.0197E+00	1.0197E+00				
12	HTC-A08-BKGD01-4248-01	TRG					1.0524E+00	1.0524E+00				
13	HTC-A08-BKGD02-0006-01	TRG					1.0541E+00	1.0541E+00				
14	HTC-A08-BKGD02-0612-01	TRG					1.0719E+00	1.0719E+00				
15	HTC-A08-BKGD02-1218-01	TRG					1.0248E+00	1.0248E+00				
16	HTC-A08-BKGD02-1824-01	TRG					1.0240E+00	1.0240E+00				
17	HTC-A08-BKGD02-2430-01	TRG					1.0236E+00	1.0236E+00				
18	HTC-A08-BKGD02-3036-01	TRG					1.0113E+00	1.0113E+00				
19	HTC-A08-BKGD02-3642-01	TRG					1.0164E+00	1.0164E+00				
20	HTC-A08-BKGD02-4248-01	TRG					1.0267E+00	1.0267E+00				

Comments	

9600

Technician: JPachella Date: 8/14/17

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

Rough Sample Preparation Log Book

Work Order	Lab Deadline	Date Received in Prep	Date Sealed	Date Returned	Technician
17-07091	8/10/2017	8/2/2017	8/3/2017	8/4/2017	KSALLINGS

Bico Pulverizer: 000302 [✓] Jaw Crusher 68275 [ ]

Eberline	Weston Solutions, Inc.	Tare (g)	Gross (g)		Net (g)		Percent		Gamma		Special
Fraction	Client ID	Pan Wt	Wet Wt.	Dry Wt.	Wet Wt.	Dry Wt.	Liquid	Solid	Dry Wt.	LEPS Wt.	Info
04	HTC-A08-BKGD01-0006-01	14.5100	835.6600	678.3100	821.1500	663.8000	19.16%	80.84%	0.0000	0.0000	
05	HTC-A08-BKGD01-0006-01 MS	14.5200	841.5000	688.8100	826.9800	674.2900	18.46%	81.54%	0.0000	0.0000	
06	HTC-A08-BKGD01-0006-01 MSD	14.5200	841.5000	688.8100	826.9800	674.2900	18.46%	81.54%	0.0000	0.0000	
07	HTC-A08-BKGD01-1218-01	14.5400	914.6000	745.1300	900.0600	730.5900	18.83%	81.17%	0.0000	0.0000	
08	HTC-A08-BKGD01-1824-01	14.5100	906.2400	733.9300	891.7300	719.4200	19.32%	80.68%	0.0000	0.0000	
09	HTC-A08-BKGD01-2430-01	14.5900	939.2800	764.9700	924.6900	750.3800	18.85%	81.15%	0.0000	0.0000	
10	HTC-A08-BKGD01-3036-01	14.5500	960.4800	781.3200	945.9300	766.7700	18.94%	81.06%	0.0000	0.0000	
11	HTC-A08-BKGD01-3642-01	14.5300	949.6200	766.2000	935.0900	751.6700	19.62%	80.38%	0.0000	0.0000	
12	HTC-A08-BKGD01-4248-01	14.5300	996.6400	809.0000	982.1100	794.4700	19.11%	80.89%	0.0000	0.0000	
13	HTC-A08-BKGD02-0006-01	14.5100	920.1600	722.4800	905.6500	707.9700	21.83%	78.17%	0.0000	0.0000	
14	HTC-A08-BKGD02-0612-01	14.4700	933.8000	750.2600	919.3300	735.7900	19.96%	80.04%	0.0000	0.0000	
15	HTC-A08-BKGD02-1218-01	14.4800	862.2400	690.1000	847.7600	675.6200	20.31%	79.69%	0.0000	0.0000	
16	HTC-A08-BKGD02-1824-01	14.5200	951.5400	759.0000	937.0200	744.4800	20.55%	79.45%	0.0000	0.0000	
17	HTC-A08-BKGD02-2430-01	14.5800	918.3000	748.3600	903.7200	733.7800	18.80%	81.20%	0.0000	0.0000	
18	HTC-A08-BKGD02-3036-01	14.6400	944.2000	772.0700	929.5600	757.4300	18.52%	81.48%	0.0000	0.0000	
19	HTC-A08-BKGD02-3642-01	14.6300	1129.2800	968.0000	1114.6500	953.3700	14.47%	85.53%	0.0000	0.0000	
20	HTC-A08-BKGD02-4248-01	14.5800	1021.6200	877.8000	1007.0400	863.2200	14.28%	85.72%	0.0000	0.0000	

OVENS Fisher Isotemp SN 00579 [✓] VWR SN 000588 [ ]

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

0097

Technician: Kenny Sallings

Date: Analysis: Rough Prep Logbook

Analysis: UUISO Page No. 10182

KO
9/7/17

Apex-Alpha™

Sample Description: SPIKE
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001937
Batch Identification: 1707091A-UU
Sample Identification: 01
Sample Geometry: Shelf 2
Procedure Description: U iso

Detector Name: Alpha_003
Chamber Serial Number:
Detector Serial Number: 3
Env. Background: System Bkgd 195572
Reagent Blank: <not performed>

Sample Size: 1.000E+000 +/- 0.000E+000 gram
Sample Date/Time: 9/7/2017 1:53:05 PM
Acquisition Date/Time: 9/7/2017 2:07:09 PM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
Tracer Quantity: 0.683 mL
Effective Efficiency: 0.1893 +/- 0.0104
Counting Efficiency: 0.1562 +/- 0.0027 on 11/19/2016 1:08:16 PM
Chem. Recovery Factor: 1.2119 +/- 0.0701

Control Certificate Name: NatU_U-8A
Chem. Recov. of Control: U-238 0.714962 +/- 0.055946
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	5.290	399.32	9.82	0.68	0.00E+000	13.5
U-234		4.742	453.81	9.21	1.19	0.00E+000	28.4
U-235		4.391	32.66	34.50	0.34	0.00E+000	3.7
U-238		4.163	458.49	9.16	0.51	0.00E+000	27.2

T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.999	5302.50*	5.60E+000 +/- 6.05E-001	7.91E-002 +/- 8.55E-003
U-234	0.997	4761.50*	6.36E+000 +/- 9.04E-001	9.24E-002 +/- 9.98E-003
U-235	1.000	4385.50*	5.65E-001 +/- 2.04E-001	8.27E-002 +/- 8.94E-003
U-238	0.997	4184.40*	6.40E+000 +/- 9.07E-001	7.33E-002 +/- 7.92E-003

AG
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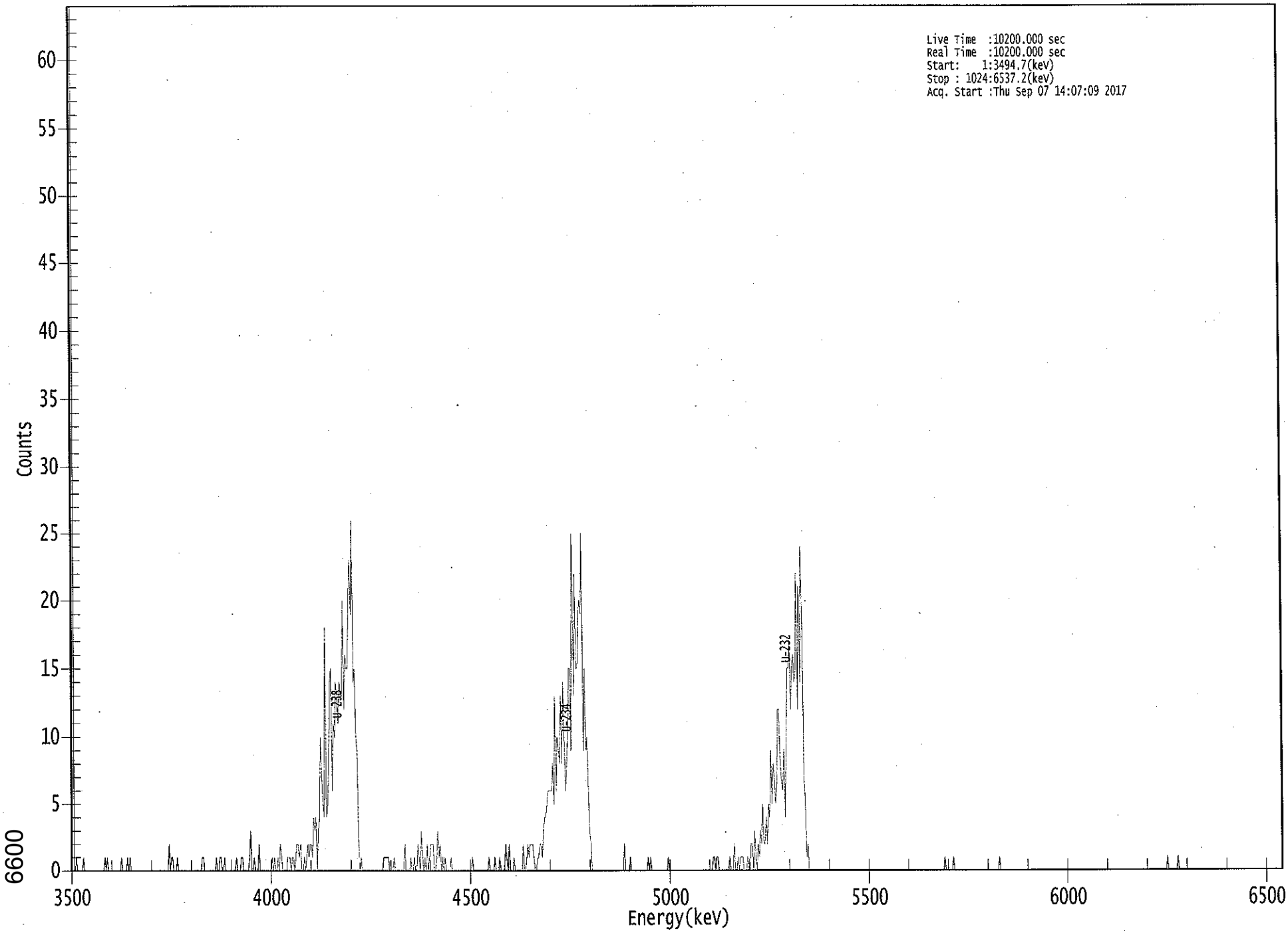

6600

****
***** 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:	10200	10200	0	0	1	0	0	0
9:	0	0	1	0	0	0	0	0
17:	0	0	0	0	0	0	0	0
25:	0	0	0	0	1	0	1	0
33:	0	0	0	0	0	0	0	0
41:	0	0	1	0	0	0	0	1
49:	0	1	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0
65:	0	0	0	0	0	0	0	0
73:	0	0	0	0	0	0	0	0
81:	0	0	2	0	1	1	0	0
89:	0	1	0	0	0	0	0	0
97:	0	0	0	0	0	0	0	0
105:	0	0	0	0	0	0	1	1
113:	0	0	0	0	0	0	0	0
121:	0	0	1	0	0	1	1	0
129:	0	1	0	0	0	0	0	0
137:	0	0	0	1	0	0	0	1
145:	1	0	0	0	0	0	1	3
153:	0	0	1	0	0	0	2	0
161:	0	0	0	0	0	0	0	0
169:	0	1	0	1	0	0	1	0
177:	2	1	0	0	0	0	1	1
185:	1	0	1	1	0	1	2	2
193:	1	2	0	0	1	0	1	2
201:	1	2	2	1	4	3	4	0
209:	3	4	10	7	5	4	18	4
217:	5	8	14	15	6	11	10	14
225:	13	11	14	13	13	20	12	16
233:	15	15	20	23	19	26	14	15
241:	10	9	2	0	1	0	0	0
249:	0	0	0	0	0	0	0	0
257:	0	0	0	0	0	0	0	1
265:	1	1	1	1	0	0	0	0
273:	1	0	0	0	0	0	0	0
281:	0	2	0	0	0	0	1	0
289:	0	1	0	0	2	1	0	3
297:	1	0	1	0	2	0	1	2
305:	2	2	0	0	1	3	1	2
313:	0	1	0	1	0	0	0	0
321:	1	0	0	0	0	0	0	0
329:	0	0	0	0	0	0	0	0
337:	0	0	1	0	0	0	0	0
345:	0	0	0	0	0	0	0	0
353:	1	0	0	0	0	1	0	0
361:	0	1	0	0	0	0	2	1

369:	0	2	0	0	0	1	0	0

Sample Title: 01

Channel								
377:	0	0	0	0	0	2	0	0
385:	1	2	1	2	2	2	1	0
393:	0	1	1	2	2	1	3	4
401:	4	5	6	6	6	6	8	5
409:	13	6	10	9	8	13	8	14
417:	10	6	8	10	15	15	9	25
425:	13	22	15	15	19	20	19	25
433:	9	15	9	10	6	3	2	0
441:	0	0	0	0	0	0	0	0
449:	0	0	0	0	0	0	0	0
457:	0	0	0	0	0	0	0	0
465:	0	0	2	0	0	0	0	1
473:	0	0	0	0	0	0	0	0
481:	0	0	0	0	0	0	1	0
489:	1	0	0	0	0	0	0	0
497:	0	0	0	0	0	0	0	1
505:	0	0	0	0	0	0	0	0
513:	0	0	0	0	0	0	0	0
521:	0	0	0	0	0	0	0	0
529:	0	0	0	0	0	0	0	0
537:	0	0	0	0	0	1	1	0
545:	1	1	0	0	0	0	0	0
553:	0	0	0	1	0	0	0	2
561:	0	0	1	0	1	1	1	0
569:	0	0	1	0	0	2	2	0
577:	3	1	0	2	1	3	2	5
585:	2	2	4	2	5	4	9	5
593:	8	7	5	6	12	12	8	7
601:	6	9	4	10	15	15	17	12
609:	15	16	14	15	22	12	21	14
617:	24	18	7	5	1	2	0	0
625:	0	0	0	0	0	0	0	0
633:	0	0	0	0	0	0	0	0
641:	0	0	0	0	0	0	0	0
649:	0	0	0	0	0	0	0	0
657:	0	0	0	0	0	0	0	0
665:	0	0	0	0	0	0	0	0
673:	0	0	0	0	0	0	0	0
681:	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0
713:	0	0	0	0	0	0	0	0
721:	0	0	0	0	0	0	0	0
729:	0	0	0	0	0	0	0	0
737:	0	1	0	0	0	0	0	0
745:	1	0	0	0	0	0	0	0
753:	0	0	0	0	0	0	0	0
761:	0	0	0	0	0	0	0	0
769:	0	0	0	0	0	0	0	0
777:	0	0	0	0	0	0	0	1
785:	0	0	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0

801:	0	0	0	0	0	0	0	0

Sample Title: 01

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

Apex-Alpha™

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Sample Description: BLANK
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001937
Batch Identification: 1707091A-UU
Sample Identification: 02
Sample Geometry: Shelf 2
Procedure Description: U iso

Detector Name: Alpha_004
Chamber Serial Number:
Detector Serial Number: 4
Env. Background: System Bkgd 195573
Reagent Blank: <not performed>

Sample Size: 1.000E+000 +/- 0.000E+000 gram
Sample Date/Time: 9/7/2017 1:53:05 PM
Acquisition Date/Time: 9/7/2017 2:07:10 PM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
Tracer Quantity: 0.676 mL
Effective Efficiency: 0.2433 +/- 0.0122
Counting Efficiency: 0.1883 +/- 0.0032 on 11/19/2016 1:08:17 PM
Chem. Recovery Factor: 1.2918 +/- 0.0683

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	507.81	8.71	1.19	0.00E+000	33.6
U-234		4.767	5.15	94.34	0.85	0.00E+000	2.9
U-235		4.384	3.49	113.53	0.51	0.00E+000	2.9
U-238		4.137	8.64	72.56	1.36	0.00E+000	2.9

T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.998	5302.50*	5.54E+000 +/- 5.44E-001	7.19E-002 +/- 7.05E-003
U-234	1.000	4761.50*	5.62E-002 +/- 5.33E-002	6.53E-002 +/- 6.41E-003
U-235	1.000	4385.50*	4.70E-002 +/- 5.35E-002	7.06E-002 +/- 6.93E-003
U-238	0.984	4184.40*	9.39E-002 +/- 6.87E-002	7.45E-002 +/- 7.31E-003

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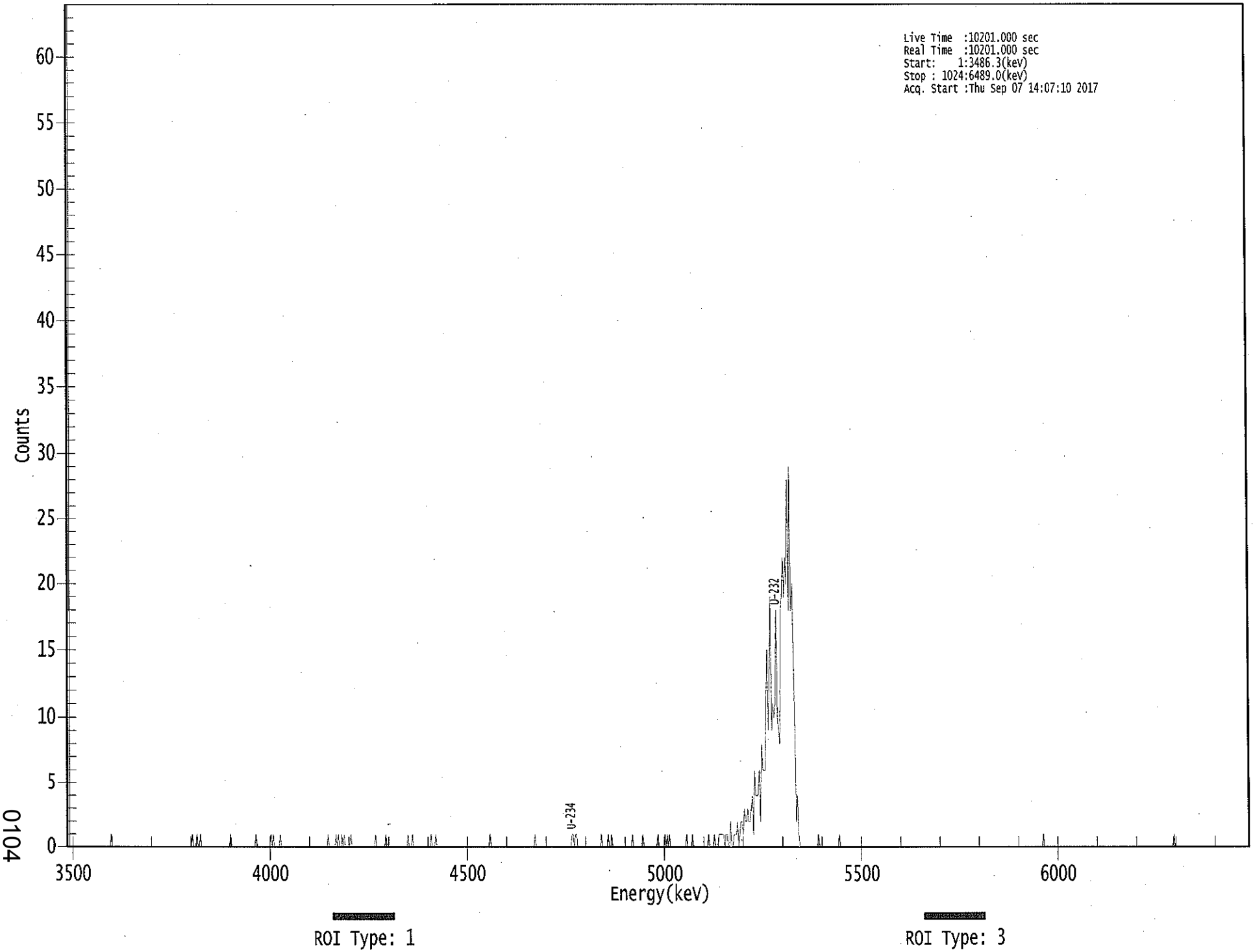

0104

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

Sample Title: 02

Elapsed Live time: 10201
Elapsed Real Time: 10201

Channel								
1:	10201	10201	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	1	0
41:	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0
65:	0	0	0	0	0	0	0	0
73:	0	0	0	0	0	0	0	0
81:	0	0	0	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	1	0	0	0
113:	1	0	0	1	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	1	0	0
145:	0	0	0	0	0	0	0	0
153:	0	0	0	0	0	0	0	0
161:	0	0	0	1	0	0	0	0
169:	0	0	0	0	0	0	0	0
177:	1	0	1	0	0	0	0	0
185:	1	0	0	0	0	0	0	0
193:	0	0	0	0	0	0	0	0
201:	0	0	0	0	0	0	0	0
209:	0	0	0	0	0	0	0	0
217:	0	0	0	0	0	0	0	0
225:	0	1	0	0	0	0	0	0
233:	1	0	1	0	0	1	0	1
241:	0	0	0	0	0	1	0	0
249:	0	0	0	0	0	0	0	0
257:	0	0	0	0	0	0	0	0
265:	0	0	1	0	0	0	0	0
273:	0	0	0	1	0	0	0	0
281:	0	0	0	0	0	0	0	0
289:	0	0	0	0	0	0	1	0
297:	0	0	1	0	0	0	0	0
305:	0	0	0	0	0	0	0	0
313:	0	0	1	0	0	0	1	0
321:	0	0	0	0	0	0	0	0
329:	0	0	0	0	0	0	0	0
337:	0	0	0	0	0	0	0	0
345:	0	0	0	0	0	0	0	0
353:	0	0	0	0	0	0	0	0
361:	0	0	0	0	0	1	0	0

369:	0	0	0	0	0	0	0	0

Sample Title: 02

Channel								
377:	0	0	0	0	0	0	0	0
385:	0	0	0	0	0	0	0	0
393:	0	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:	0	0	0	0	0	0	0	0
425:	0	0	0	0	0	0	0	0
433:	0	0	0	0	1	1	0	1
441:	1	0	0	0	0	0	0	0
449:	0	0	0	0	0	0	0	0
457:	0	0	0	0	0	1	0	0
465:	0	0	0	1	0	0	1	0
473:	0	0	0	0	0	0	0	0
481:	0	0	0	0	0	0	0	0
489:	1	0	0	0	0	0	0	0
497:	0	1	0	0	0	0	0	0
505:	0	0	0	0	0	0	1	0
513:	0	0	0	0	1	0	1	0
521:	1	0	0	0	0	0	0	0
529:	0	0	0	0	0	0	0	1
537:	0	0	0	0	1	0	0	0
545:	0	0	0	0	0	0	0	0
553:	0	0	1	0	0	0	0	1
561:	0	0	0	1	1	1	1	1
569:	0	1	1	0	0	2	0	0
577:	1	1	1	2	0	1	2	2
585:	1	3	2	2	3	2	2	3
593:	4	1	6	4	4	4	6	2
601:	8	6	6	6	11	15	9	14
609:	19	9	11	10	11	18	10	9
617:	8	18	19	22	19	22	20	28
625:	18	29	18	20	15	9	2	4
633:	1	0	0	0	0	0	0	0
641:	0	0	0	0	0	0	0	0
649:	0	1	0	0	0	0	0	0
657:	0	0	0	0	0	0	0	0
665:	0	0	0	1	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: 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	1	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	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	1	0	0
961:	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

Apex-Alpha™

KB 9/7/17

Sample Description: HTC-A08-BKGD01-0006-01 DUP
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001937
Batch Identification: 1707091A-UU
Sample Identification: 03
Sample Geometry: Shelf 2
Procedure Description: U iso

Detector Name: Alpha_010
Chamber Serial Number:
Detector Serial Number: 10
Env. Background: System Bkgd 195574
Reagent Blank: <not performed>

Sample Size: 1.010E+000 +/- 0.000E+000 gram
Sample Date/Time: 5/15/2017 1:53:05 PM
Acquisition Date/Time: 9/7/2017 2:07:11 PM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
Tracer Quantity: 0.673 mL
Effective Efficiency: 0.2326 +/- 0.0119
Counting Efficiency: 0.1872 +/- 0.0032 on 11/19/2016 1:08:16 PM
Chem. Recovery Factor: 1.2424 +/- 0.0670

Peak Match Tolerance: 0.150 MeV

PEAK AREA REPORT

Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
U-232	T	5.281	483.28	8.95	2.72	0.00E+000	21.4
U-234		4.738	55.75	27.40	4.25	0.00E+000	8.3
U-235		4.398	4.28	125.11	2.72	0.00E+000	2.9
U-238		4.137	49.30	28.47	1.70	0.00E+000	4.4

T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.997	5302.50*	5.48E+000 +/- 5.49E-001	9.72E-002 +/- 9.74E-003
U-234	0.996	4761.50*	6.30E-001 +/- 1.84E-001	1.14E-001 +/- 1.14E-002
U-235	0.999	4385.50*	5.97E-002 +/- 7.49E-002	1.20E-001 +/- 1.20E-002
U-238	0.984	4184.40*	5.55E-001 +/- 1.67E-001	8.27E-002 +/- 8.28E-003

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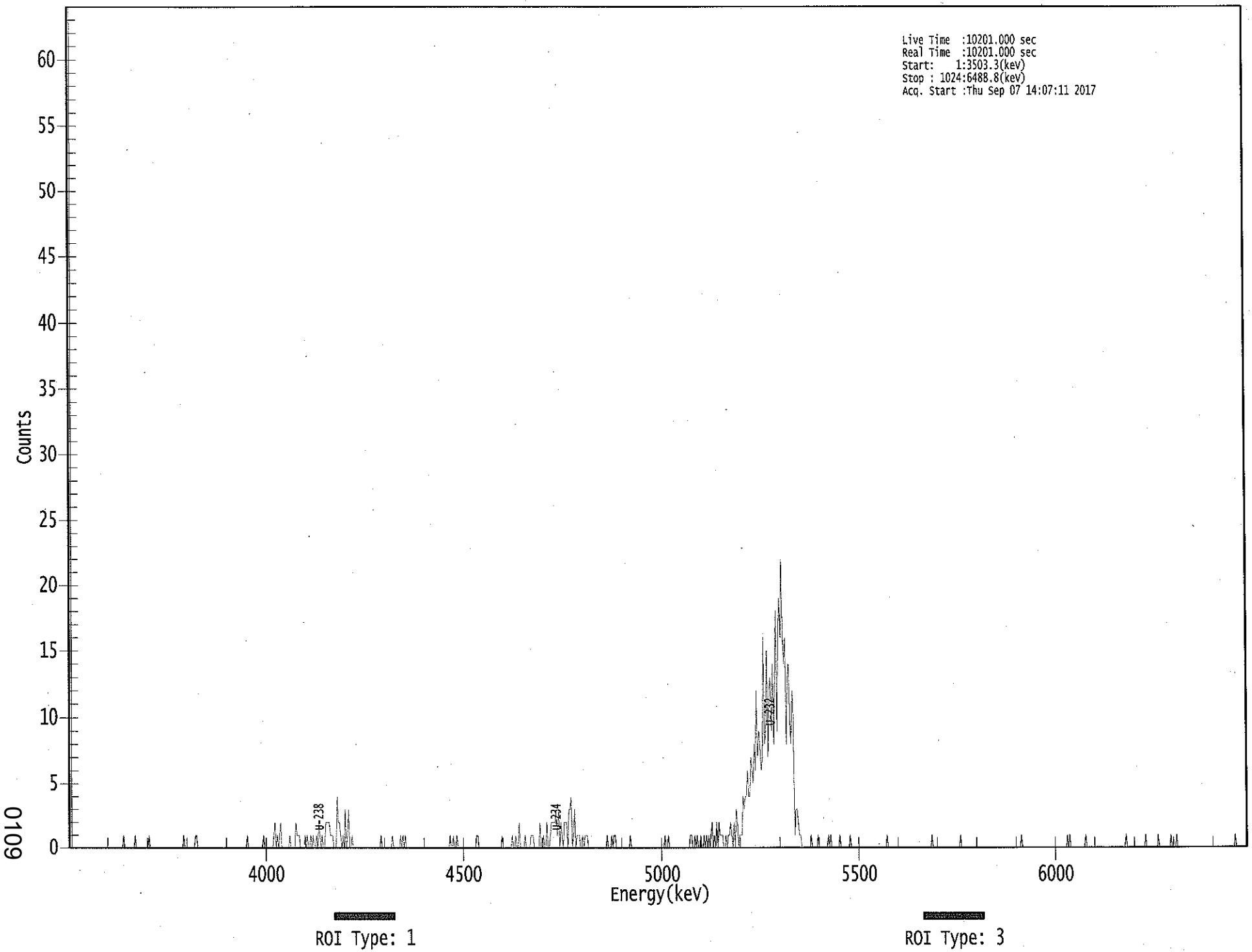
0000193756.CNF



0109

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

Sample Title: 03

Elapsed Live time: 10201
Elapsed Real Time: 10201

Channel								
1:	10201	10201	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	1
49:	0	0	0	0	0	0	0	0
57:	0	1	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	0	0	0	0	0	0	0
89:	0	0	0	0	0	0	0	0
97:	0	0	0	1	0	0	0	0
105:	0	0	0	0	0	1	1	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	1	0	0	0	0	0
161:	0	0	0	0	0	0	0	0
169:	1	0	0	0	0	0	0	0
177:	0	1	2	0	1	0	1	2
185:	0	0	0	0	0	0	0	1
193:	0	0	0	0	2	1	1	1
201:	0	0	0	0	1	0	1	0
209:	0	1	0	1	0	0	1	0
217:	2	1	0	1	0	0	2	2
225:	2	2	1	1	1	0	0	0
233:	4	2	2	1	0	1	0	3
241:	0	1	3	0	0	1	0	0
249:	0	0	0	0	0	0	0	0
257:	0	0	0	0	0	0	0	0
265:	0	0	0	0	0	0	1	0
273:	0	0	0	0	0	0	0	0
281:	1	0	0	0	0	0	0	1
289:	0	1	0	1	0	0	0	0
297:	0	0	0	0	0	0	0	0
305:	0	0	0	0	0	0	0	0
313:	0	0	0	0	0	0	0	0
321:	0	0	0	0	0	0	0	0
329:	0	0	1	0	0	1	0	0
337:	1	0	0	0	0	0	0	0
345:	0	0	0	0	0	0	0	0
353:	0	1	1	0	0	0	0	0
361:	0	0	0	0	0	0	0	0

369:	0	0	0	0	0	0	0	1

Sample Title: 03

Channel								
377:	0	0	0	0	0	0	0	0
385:	1	0	0	1	0	0	2	0
393:	0	0	0	1	0	0	0	0
401:	1	1	1	0	0	0	0	0
409:	2	0	0	1	0	0	2	0
417:	0	1	2	2	2	2	3	1
425:	3	0	2	1	0	2	2	2
433:	0	3	3	4	0	1	3	0
441:	1	1	1	0	0	1	0	1
449:	1	1	0	0	0	0	0	0
457:	0	0	0	0	0	0	0	0
465:	0	0	1	0	0	0	1	0
473:	1	1	0	0	0	0	0	0
481:	0	0	0	0	0	0	1	0
489:	0	0	0	0	0	0	0	0
497:	0	0	0	0	0	0	0	0
505:	0	0	0	0	0	0	0	0
513:	0	0	0	0	1	0	0	1
521:	0	0	0	0	0	0	0	0
529:	0	0	0	0	0	0	0	0
537:	0	0	1	1	0	0	1	0
545:	1	0	0	1	0	0	1	0
553:	1	0	1	0	1	2	0	1
561:	0	2	0	2	1	1	1	0
569:	0	1	0	1	1	2	1	0
577:	2	0	3	2	0	1	1	1
585:	4	3	4	4	6	4	4	7
593:	6	5	8	6	12	7	9	8
601:	6	7	16	8	9	15	7	12
609:	13	9	14	8	13	18	9	16
617:	19	16	22	16	14	16	8	13
625:	14	10	8	12	11	1	3	3
633:	2	1	1	0	0	0	0	0
641:	0	0	0	1	0	0	0	0
649:	0	1	0	0	0	0	0	0
657:	0	0	1	0	1	0	0	0
665:	0	0	0	0	1	0	0	0
673:	0	0	0	0	0	1	0	0
681:	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	1	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	1	0	0	0
753:	0	0	0	0	0	0	0	0
761:	0	0	0	0	0	0	0	0
769:	0	0	0	0	0	1	0	0
777:	0	0	0	0	0	0	0	0
785:	0	0	0	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	1	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	1	0	1	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	1	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	1	0	0
921:	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	1	0
937:	0	0	0	0	0	0	0	0
945:	0	1	0	0	0	0	0	0
953:	0	0	0	0	1	0	0	0
961:	0	1	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	1	0	0	0
1017:	0	0	0	0	0	0	0	0

Apex-Alpha™

VB
9/7/17

Sample Description: HTC-A08-BKGD01-0006-01
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001937
Batch Identification: 1707091A-UU
Sample Identification: 04
Sample Geometry: Shelf 2
Procedure Description: U iso

Detector Name: Alpha_011
Chamber Serial Number:
Detector Serial Number: 11
Env. Background: System Bkgd 195575
Reagent Blank: <not performed>

Sample Size: 1.010E+000 +/- 0.000E+000 gram
Sample Date/Time: 5/15/2017 1:53:05 PM
Acquisition Date/Time: 9/7/2017 2:07:12 PM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
Tracer Quantity: 0.672 mL
Effective Efficiency: 0.2545 +/- 0.0125
Counting Efficiency: 0.1991 +/- 0.0034 on 11/19/2016 1:08:17 PM
Chem. Recovery Factor: 1.2779 +/- 0.0666

Peak Match Tolerance: 0.150 MeV

PEAK AREA REPORT

Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
U-232	T	5.280	528.47	8.54	1.53	0.00E+000	22.9
U-234		4.743	55.49	26.45	0.51	0.00E+000	2.9
U-235		4.414	5.81	90.53	1.19	0.00E+000	2.6
U-238		4.174	54.32	26.79	0.68	0.00E+000	3.0

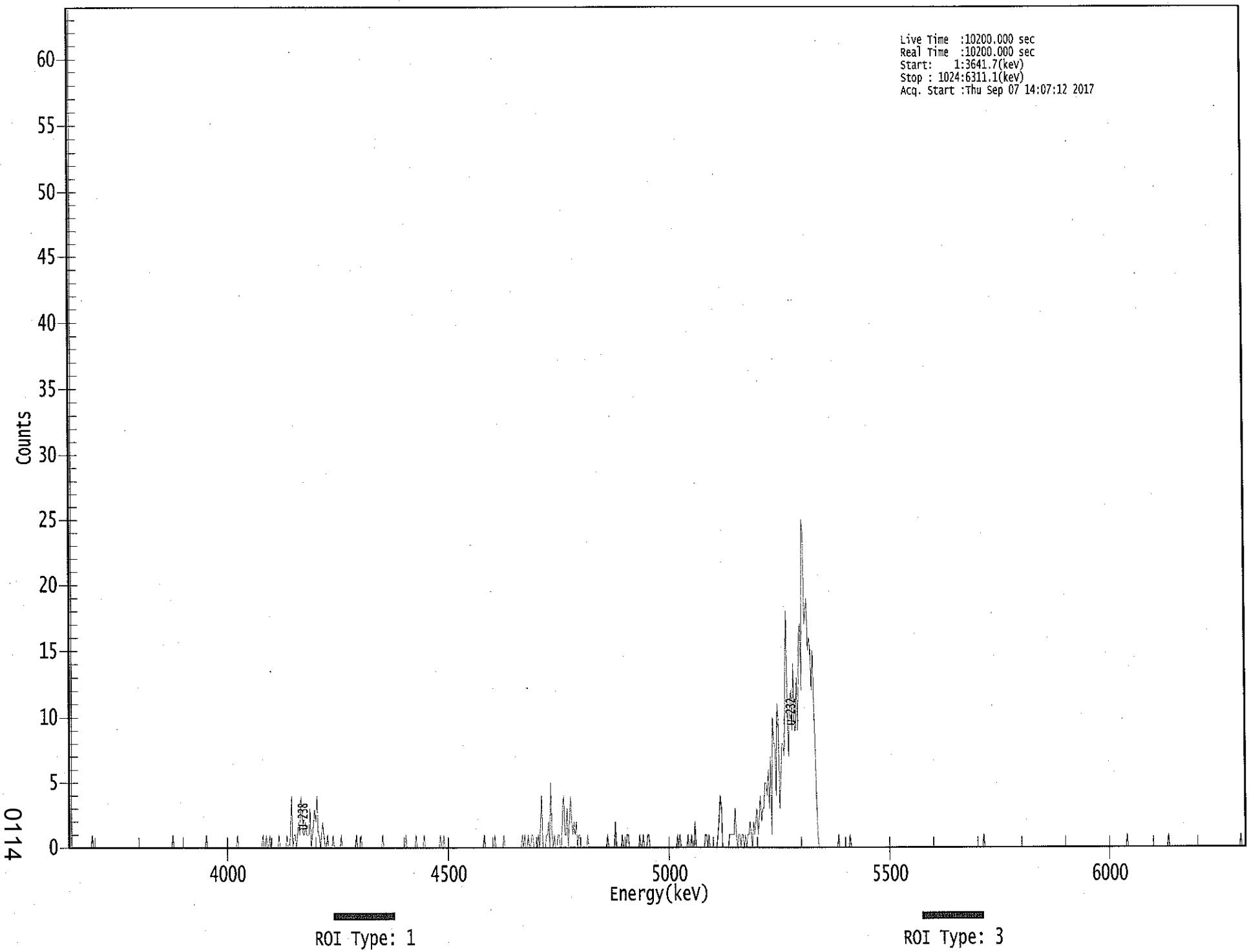
T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.997	5302.50*	5.48E+000 +/- 5.29E-001	7.36E-002 +/- 7.11E-003
U-234	0.998	4761.50*	5.73E-001 +/- 1.61E-001	5.42E-002 +/- 5.24E-003
U-235	0.994	4385.50*	7.40E-002 +/- 6.74E-002	8.39E-002 +/- 8.11E-003
U-238	0.999	4184.40*	5.59E-001 +/- 1.59E-001	5.80E-002 +/- 5.60E-003

AG
9/8/17

0000193753.CNF



0114

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

Sample Title: 04

Elapsed Live time: 10200
Elapsed Real Time: 10200

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

369:	0	1	0	0	0	0	0	0

Sample Title: 04

Channel								
377:	0	1	0	0	0	0	0	0
385:	0	0	0	0	0	0	0	0
393:	0	1	0	1	0	0	1	0
401:	0	1	1	0	0	0	0	1
409:	0	2	4	0	0	0	1	1
417:	2	0	5	1	0	1	0	0
425:	1	1	0	0	3	4	1	1
433:	3	0	2	4	2	1	2	1
441:	2	0	1	1	0	0	0	0
449:	0	0	1	0	0	0	0	0
457:	0	0	0	0	0	0	0	0
465:	0	0	0	1	0	0	0	0
473:	0	0	2	0	0	0	0	0
481:	1	0	0	0	1	1	0	0
489:	0	0	0	0	0	0	0	1
497:	0	0	1	0	0	0	1	1
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	1	0	0	0	0	0
537:	0	1	0	0	1	0	0	2
545:	0	0	0	0	0	0	0	0
553:	1	1	0	1	0	0	0	0
561:	0	0	0	1	2	4	3	0
569:	0	0	0	0	0	1	1	1
577:	1	1	3	1	0	1	1	0
585:	1	1	0	1	0	1	1	2
593:	1	0	2	1	2	3	1	2
601:	4	2	3	3	5	5	4	6
609:	3	7	1	10	8	8	4	11
617:	10	3	5	8	8	7	13	18
625:	11	7	11	12	9	14	9	9
633:	13	9	16	17	12	25	24	17
641:	18	19	15	16	15	12	15	11
649:	8	4	1	0	0	0	0	0
657:	0	0	0	0	0	0	0	0
665:	0	0	0	0	1	0	0	0
673:	0	0	0	0	0	0	1	0
681:	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	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	1	0	0	0	0	0

801:	0	0	0	0	0	0	0	0

Sample Title: 04

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

KD
9/7/17

Apex-Alpha™

Sample Description: HTC-A08-BKGD01-0006-01 MS
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001937
Batch Identification: 1707091A-UU
Sample Identification: 05
Sample Geometry: Shelf 2
Procedure Description: U iso

Detector Name: Alpha_012
Chamber Serial Number:
Detector Serial Number: 12
Env. Background: System Bkgd 195576
Reagent Blank: <not performed>

Sample Size: 1.010E+000 +/- 0.000E+000 gram
Sample Date/Time: 5/15/2017 1:53:05 PM
Acquisition Date/Time: 9/7/2017 2:07:13 PM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
Tracer Quantity: 0.672 mL
Effective Efficiency: 0.2459 +/- 0.0123
Counting Efficiency: 0.1881 +/- 0.0032 on 11/19/2016 1:08:18 PM
Chem. Recovery Factor: 1.3074 +/- 0.0691

Peak Match Tolerance: 0.150 MeV

PEAK AREA REPORT

Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
U-232	T	5.280	510.30	8.69	1.70	0.00E+000	36.6
U-234		4.735	729.49	7.26	0.51	0.00E+000	6.4
U-235		4.395	40.32	31.17	0.68	0.00E+000	3.7
U-238		4.154	769.49	7.07	0.51	0.00E+000	36.7

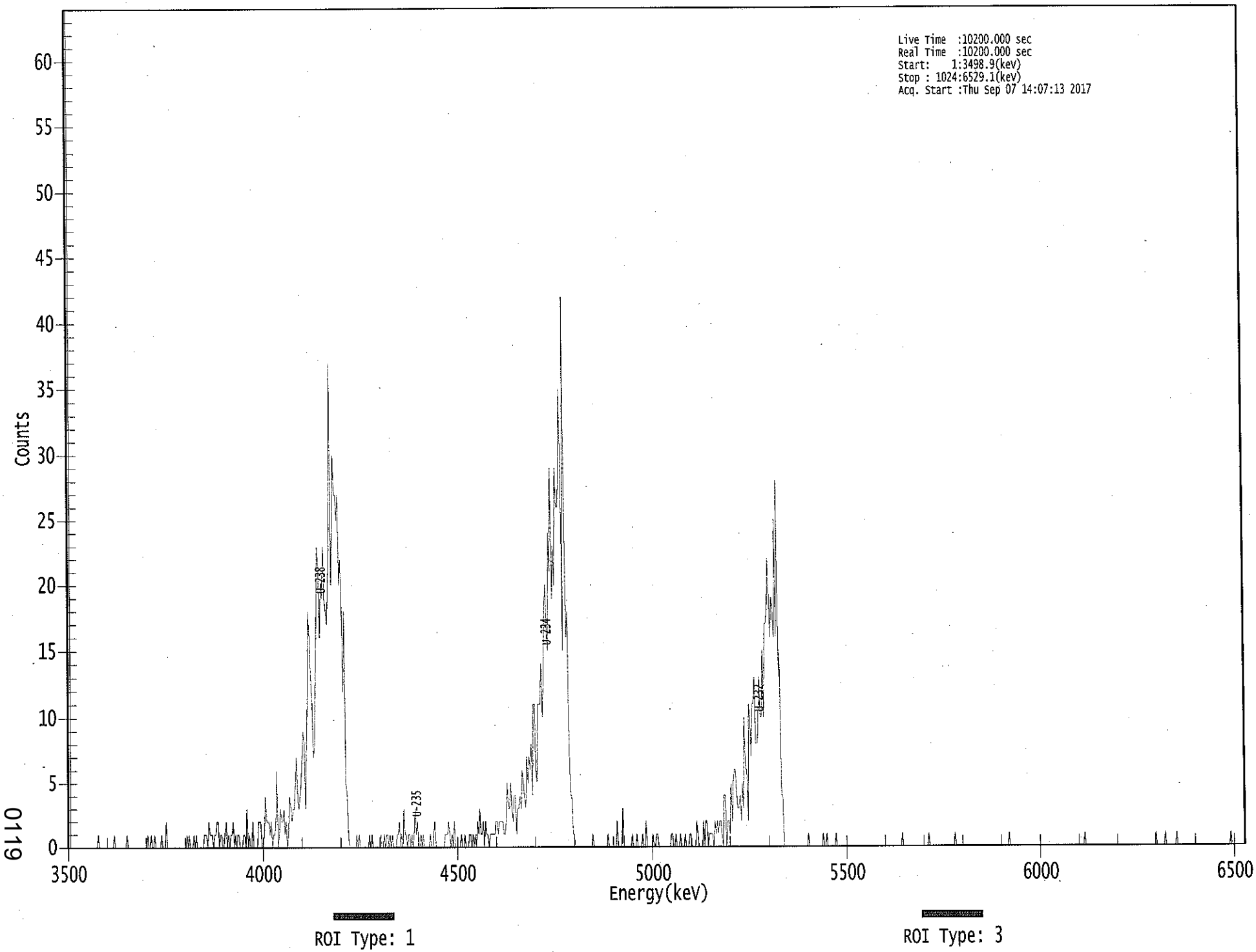
T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.996	5302.50*	5.47E+000 +/- 5.36E-001	7.88E-002 +/- 7.71E-003
U-234	0.995	4761.50*	7.80E+000 +/- 9.50E-001	5.61E-002 +/- 5.49E-003
U-235	0.999	4385.50*	5.32E-001 +/- 1.74E-001	7.44E-002 +/- 7.28E-003
U-238	0.993	4184.40*	8.19E+000 +/- 9.89E-001	5.58E-002 +/- 5.47E-003

AG
9/8/17

0000193757.CNF



0119

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

Sample Title: 05

Elapsed Live time: 10200
Elapsed Real Time: 10200

Channel								
1:	10200	10200	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0
25:	0	0	1	0	0	0	0	0
33:	0	0	0	0	0	0	0	0
41:	1	0	0	0	0	0	0	0
49:	0	0	0	1	0	0	0	0
57:	0	0	0	0	0	0	0	0
65:	0	0	0	0	0	1	0	0
73:	1	0	0	1	0	0	0	0
81:	0	1	0	0	0	2	0	0
89:	0	0	0	0	0	0	0	0
97:	0	0	0	0	0	0	0	1
105:	0	1	0	0	0	1	0	1
113:	0	0	0	0	0	0	1	1
121:	1	0	2	1	1	1	0	1
129:	1	2	2	0	1	1	0	0
137:	1	2	0	1	0	1	1	2
145:	0	1	0	1	1	0	0	0
153:	1	1	0	3	0	1	0	0
161:	2	0	0	0	0	2	2	2
169:	0	0	1	4	2	2	2	1
177:	2	0	1	1	2	6	0	1
185:	3	2	2	3	1	2	0	1
193:	4	3	2	3	3	5	7	4
201:	3	4	5	7	9	8	3	8
209:	11	18	16	13	11	7	8	13
217:	18	23	21	16	20	19	23	19
225:	18	17	20	23	37	20	24	30
233:	27	27	25	27	20	22	18	12
241:	18	5	4	1	0	0	0	0
249:	0	0	1	0	1	0	0	0
257:	0	0	0	0	0	1	0	1
265:	0	0	0	0	0	0	0	1
273:	0	0	1	0	1	1	0	1
281:	0	1	0	0	0	1	1	2
289:	0	1	0	3	1	1	0	1
297:	1	0	1	0	1	3	1	2
305:	0	0	1	0	1	0	0	0
313:	0	0	1	0	0	1	2	0
321:	0	0	0	0	0	0	0	1
329:	1	1	2	1	0	1	0	2
337:	0	0	0	0	0	1	0	0
345:	1	0	0	0	1	1	0	1
353:	0	1	0	2	1	3	1	1
361:	2	0	2	1	1	0	1	1

369:	1	1	1	2	2	1	2	2

Sample Title: 05

Channel								
377:	2	2	1	1	2	5	3	3
385:	5	3	2	4	4	1	3	3
393:	4	3	6	5	4	3	7	5
401:	7	6	8	4	11	11	6	5
409:	11	11	11	14	10	13	18	20
417:	17	15	24	21	29	19	23	20
425:	29	26	26	28	35	29	15	42
433:	24	16	18	8	4	4	1	1
441:	0	0	0	0	0	0	0	0
449:	0	0	0	0	0	0	0	1
457:	0	0	0	0	0	0	0	0
465:	0	0	0	0	1	0	0	0
473:	0	0	0	0	2	0	0	0
481:	0	3	0	0	0	0	0	0
489:	0	1	0	0	0	1	0	0
497:	0	0	1	0	0	2	0	0
505:	0	0	0	1	0	0	1	1
513:	0	0	0	0	0	0	0	0
521:	0	0	0	1	1	0	0	1
529:	0	0	0	1	0	0	0	1
537:	0	0	0	1	1	0	0	0
545:	0	2	1	0	0	0	0	2
553:	0	2	2	0	1	1	1	1
561:	0	2	1	2	1	2	2	1
569:	0	4	4	0	2	2	1	5
577:	2	5	6	6	4	3	3	4
585:	2	5	3	10	6	6	2	11
593:	10	7	11	11	13	8	8	9
601:	13	10	10	15	10	17	17	18
609:	22	19	16	19	18	16	25	16
617:	28	13	15	4	4	0	0	0
625:	0	0	0	0	0	0	0	0
633:	0	0	0	0	0	0	0	0
641:	0	0	1	0	0	0	0	0
649:	0	0	0	0	0	0	0	1
657:	0	0	1	0	0	0	0	0
665:	0	0	1	0	0	0	0	0
673:	0	0	0	0	0	0	0	0
681:	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0
713:	0	0	0	0	0	0	0	0
721:	0	0	0	0	1	0	0	0
729:	0	0	0	0	0	0	0	0
737:	0	0	0	0	0	0	0	0
745:	0	0	0	1	0	0	0	0
753:	0	0	0	0	0	0	0	0
761:	0	0	0	0	0	0	0	0
769:	0	0	1	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	1	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	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:	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	0	0
937:	0	0	0	0	0	0	0	0
945:	0	1	0	0	0	0	0	0
953:	0	1	0	0	0	0	0	0
961:	0	0	0	1	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	1	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

Apex-Alpha™

KP 9/7/17

Sample Description: HTC-A08-BKGD01-006-01-MSD
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001937
Batch Identification: 1707091A-UU
Sample Identification: 06
Sample Geometry: Shelf 2
Procedure Description: U iso

Detector Name: Alpha_014
Chamber Serial Number:
Detector Serial Number: 14
Env. Background: System Bkgd 195577
Reagent Blank: <not performed>

Sample Size: 1.010E+000 +/- 0.000E+000 gram
Sample Date/Time: 5/15/2017 1:53:05 PM
Acquisition Date/Time: 9/7/2017 2:07:14 PM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
Tracer Quantity: 0.672 mL
Effective Efficiency: 0.2491 +/- 0.0124
Counting Efficiency: 0.1847 +/- 0.0032 on 11/19/2016 1:08:18 PM
Chem. Recovery Factor: 1.3485 +/- 0.0709

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	5.283	517.13	8.64	1.87	0.00E+000	43.6
U-234		4.735	685.15	7.49	0.85	0.00E+000	42.1
U-235		4.395	32.49	34.70	0.51	0.00E+000	3.9
U-238		4.154	692.15	7.46	0.85	0.00E+000	33.4

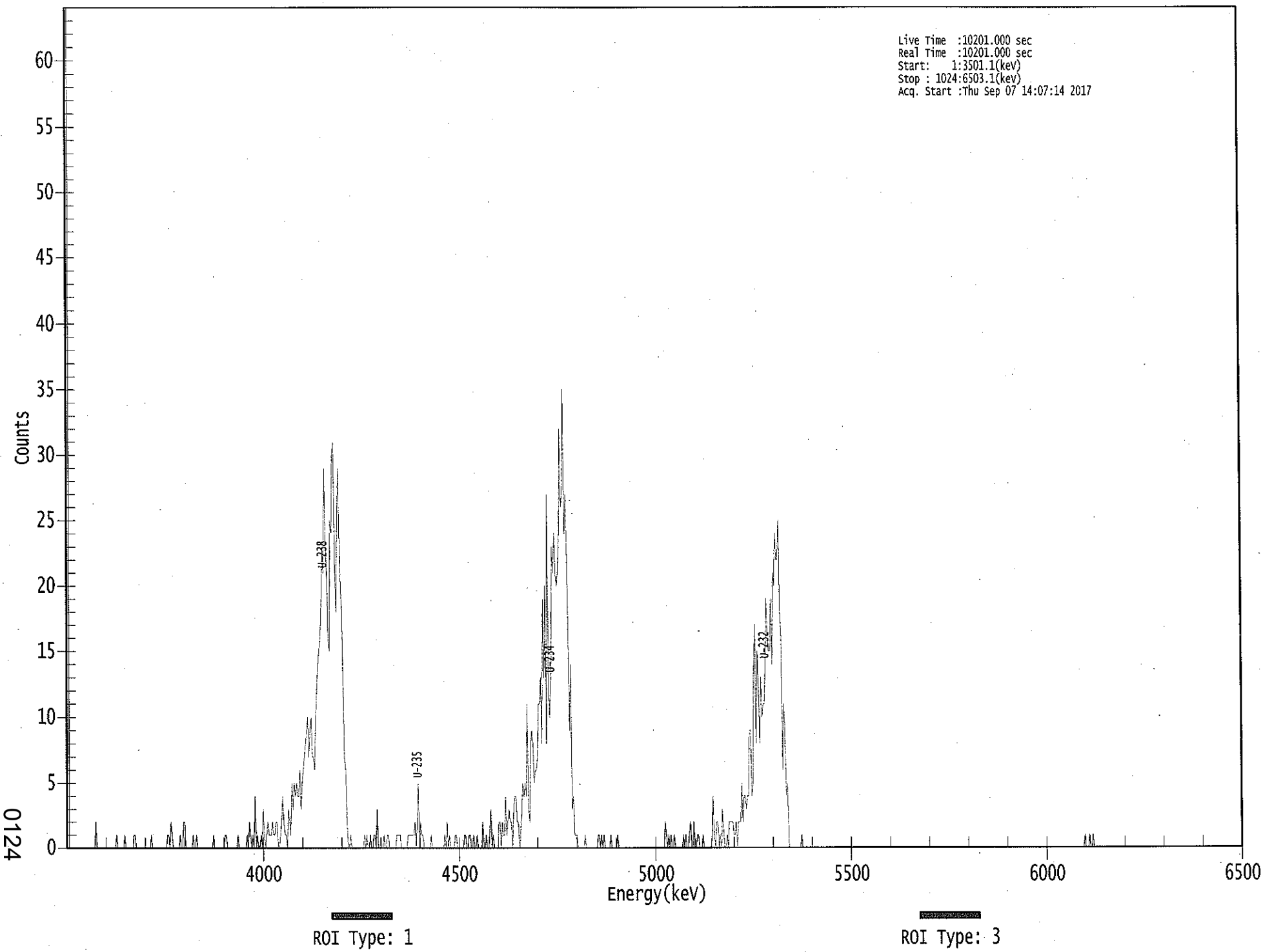
T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.997	5302.50*	5.48E+000 +/- 5.34E-001	8.02E-002 +/- 7.81E-003
U-234	0.995	4761.50*	7.23E+000 +/- 8.89E-001	6.32E-002 +/- 6.16E-003
U-235	0.999	4385.50*	4.23E-001 +/- 1.52E-001	6.83E-002 +/- 6.66E-003
U-238	0.994	4184.40*	7.27E+000 +/- 8.93E-001	6.29E-002 +/- 6.13E-003

AG 9/8/17

0000193758.CNF



0124

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

Sample Title: 06

Elapsed Live time: 10201
Elapsed Real Time: 10201

Channel								
1:	10201	10201	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0
25:	0	2	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0
41:	0	0	0	1	0	0	0	0
49:	0	0	1	0	0	0	0	0
57:	0	0	1	1	0	0	0	0
65:	0	0	0	0	0	0	0	0
73:	0	1	0	0	0	0	0	0
81:	0	0	0	0	0	0	0	1
89:	1	0	2	1	0	0	0	0
97:	0	0	1	0	0	2	2	0
105:	0	0	0	0	0	1	0	0
113:	1	0	0	0	0	0	0	0
121:	0	0	0	0	0	0	0	1
129:	0	0	0	0	0	0	0	0
137:	0	1	1	0	0	0	0	0
145:	0	0	0	0	1	0	0	0
153:	0	0	0	0	1	0	2	1
161:	0	1	0	4	0	1	0	0
169:	1	0	3	1	0	1	2	1
177:	1	1	2	1	1	2	2	0
185:	0	1	2	4	2	1	1	0
193:	3	2	1	5	3	5	4	5
201:	4	4	6	3	5	6	7	8
209:	9	10	7	9	10	7	7	6
217:	10	12	14	15	16	18	23	21
225:	29	23	21	16	15	25	24	30
233:	31	22	18	24	29	24	20	18
241:	12	7	6	2	0	0	1	0
249:	0	0	0	0	0	0	0	0
257:	0	0	1	0	1	0	0	1
265:	0	0	1	1	0	3	0	0
273:	0	0	0	1	0	0	1	1
281:	0	0	0	0	0	0	1	1
289:	1	1	0	0	0	0	0	0
297:	1	1	1	1	1	1	2	0
305:	2	5	0	2	1	1	0	0
313:	0	0	0	0	1	0	0	0
321:	0	0	0	0	0	0	0	0
329:	1	0	2	0	1	0	0	0
337:	0	1	1	0	0	0	0	0
345:	0	1	1	0	0	1	1	0
353:	0	1	0	0	1	0	0	0
361:	0	2	0	0	1	0	0	1

369:	3	0	1	0	0	0	0	2

Sample Title: 06

Channel								
377:	2	0	2	1	1	4	1	2
385:	3	2	2	0	3	4	4	2
393:	2	0	1	3	5	4	5	4
401:	11	3	2	8	9	8	5	6
409:	6	7	11	11	13	8	19	13
417:	20	8	27	12	10	13	23	21
425:	24	21	20	21	23	32	26	27
433:	35	24	27	23	16	9	14	3
441:	4	1	1	1	0	0	0	0
449:	0	0	1	0	0	0	0	0
457:	0	0	0	0	0	1	1	0
465:	1	0	1	0	0	0	0	0
473:	1	0	0	0	0	0	1	0
481:	0	0	0	0	0	0	0	0
489:	0	0	0	0	0	0	0	0
497:	0	0	0	0	0	0	0	0
505:	0	0	0	0	0	0	0	0
513:	0	0	0	0	0	0	0	2
521:	1	0	1	0	1	0	0	1
529:	0	0	0	0	0	0	0	1
537:	0	1	0	0	1	2	0	0
545:	2	0	0	1	1	0	0	0
553:	1	0	0	0	0	0	0	0
561:	1	4	1	0	2	2	0	1
569:	0	3	1	0	0	1	0	2
577:	2	2	2	1	1	2	0	2
585:	2	2	5	2	4	4	3	4
593:	4	9	9	4	5	13	17	8
601:	15	12	8	13	10	11	11	14
609:	19	16	15	15	19	14	21	20
617:	24	22	22	25	18	16	6	11
625:	9	4	5	0	0	0	0	0
633:	0	0	0	0	0	0	1	0
641:	0	0	0	0	0	0	0	0
649:	0	0	0	0	0	0	0	0
657:	0	0	0	0	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	1	0	0
889:	0	1	0	0	1	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™

KD 9/7/17

Sample Description: HTC-A08-BKGD01-1218-01
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001937
Batch Identification: 1707091A-UU
Sample Identification: 07
Sample Geometry: Shelf 2
Procedure Description: U iso

Detector Name: Alpha_045
Chamber Serial Number: 04026482A
Detector Serial Number: 91131
Env. Background: System Bkgd 195588
Reagent Blank: <not performed>

Sample Size: 1.007E+000 +/- 0.000E+000 gram
Sample Date/Time: 5/15/2017 1:53:05 PM
Acquisition Date/Time: 9/7/2017 2:07:38 PM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
Tracer Quantity: 0.673 mL
Effective Efficiency: 0.1809 +/- 0.0102
Counting Efficiency: 0.1688 +/- 0.0029 on 11/18/2016 10:08:40 AM
Chem. Recovery Factor: 1.0715 +/- 0.0633

Peak Match Tolerance: 0.150 MeV

PEAK AREA REPORT

Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
U-232	T	5.267	375.81	10.13	1.19	0.00E+000	14.9
U-234		4.721	57.32	26.07	0.68	0.00E+000	9.7
U-235		4.421	8.00	73.50	0.00	0.00E+000	3.0
U-238		4.150	55.66	26.37	0.34	0.00E+000	5.0

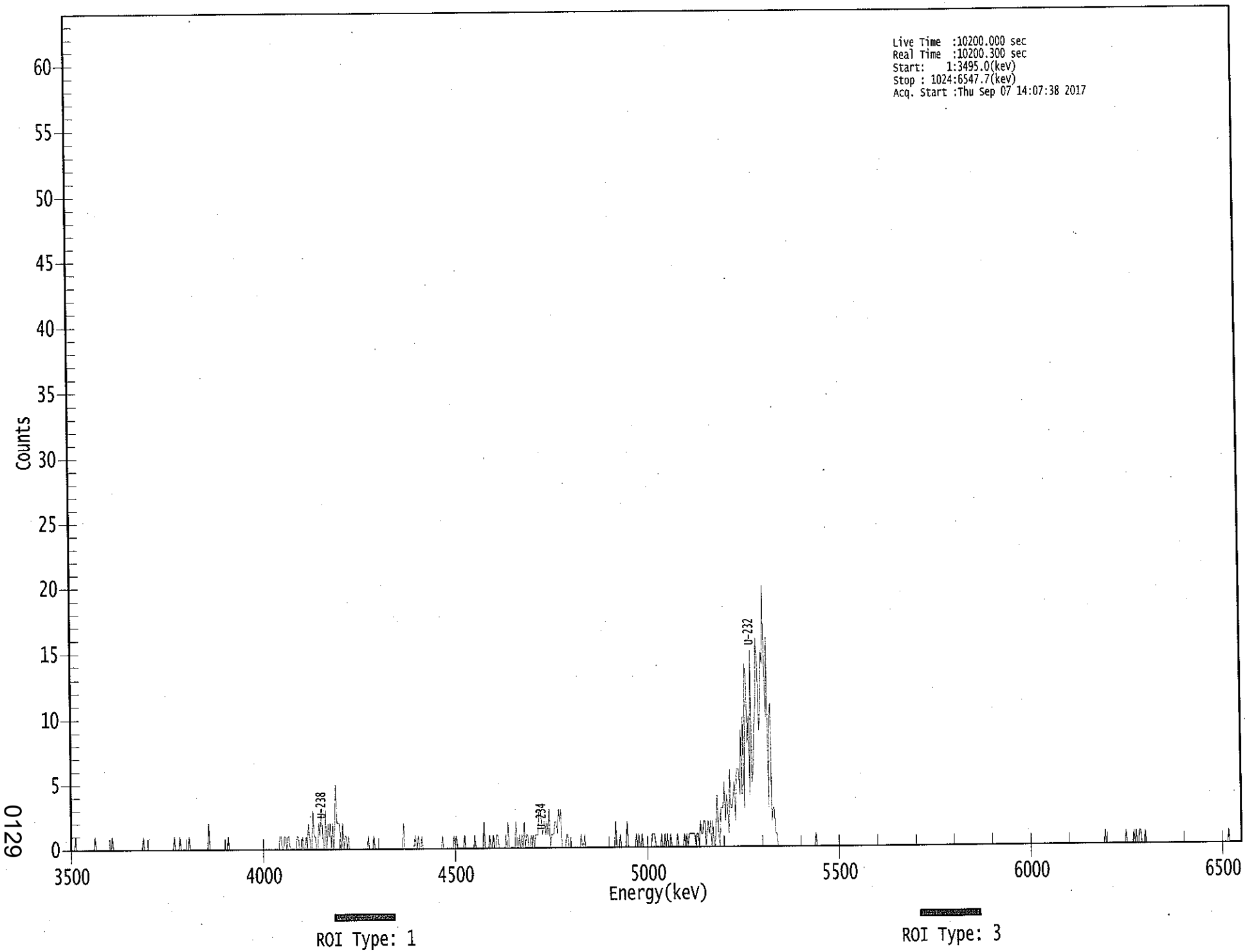
T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.991	5302.50*	5.50E+000 +/- 6.10E-001	9.64E-002 +/- 1.07E-002
U-234	0.989	4761.50*	8.36E-001 +/- 2.37E-001	8.23E-002 +/- 9.12E-003
U-235	0.991	4385.50*	1.44E-001 +/- 1.07E-001	1.08E-001 +/- 1.20E-002
U-238	0.992	4184.40*	8.08E-001 +/- 2.31E-001	6.94E-002 +/- 7.70E-003

AG 9/8/17

0000193759.CNF



0129

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

369:	1	0	0	1	1	0	0	0

Sample Title: 07

Channel								
377:	0	0	0	1	0	2	0	0
385:	0	0	0	0	2	0	0	1
393:	0	1	0	2	0	1	1	0
401:	0	1	0	1	0	1	1	1
409:	3	3	2	1	2	2	1	2
417:	1	3	0	1	1	1	2	2
425:	1	3	2	3	0	0	0	0
433:	1	1	0	0	0	0	0	0
441:	0	0	0	0	0	1	0	0
449:	1	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	2	0	0	0	1
481:	0	0	0	0	0	2	0	0
489:	0	0	0	0	0	1	0	1
497:	0	0	1	0	0	0	0	0
505:	0	0	0	1	1	1	0	0
513:	0	0	0	1	0	0	1	0
521:	1	0	0	1	0	0	0	0
529:	0	1	0	0	0	0	0	1
537:	0	1	0	1	1	1	1	1
545:	1	0	1	1	0	2	1	1
553:	2	2	0	1	2	1	2	0
561:	2	0	0	2	4	1	0	3
569:	3	3	5	2	4	3	1	6
577:	3	3	4	5	2	6	6	6
585:	4	9	4	10	3	14	13	8
593:	10	4	15	5	6	9	11	16
601:	14	9	10	15	14	20	14	10
609:	16	3	10	11	2	3	3	1
617:	1	0	0	0	0	0	0	0
625:	0	0	0	0	0	0	0	0
633:	0	0	0	0	0	0	0	0
641:	0	0	0	0	0	0	0	0
649:	0	0	1	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: 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	1
905:	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	0
921:	0	1	0	0	0	0	0	0
929:	1	0	1	0	0	1	1	0
937:	0	0	1	0	0	0	0	0
945:	0	0	0	0	0	0	0	0
953:	0	0	0	0	0	0	0	0
961:	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	1	0	0	0	0
1017:	0	0	0	0	0	0	0	0

Apex-Alpha™

KB 9/8/17

Sample Description: HTC-A08-BKGD01-1824-01
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001937
Batch Identification: 1707091A-UU
Sample Identification: 08
Sample Geometry: Shelf 2
Procedure Description: U iso

Detector Name: Alpha_046
Chamber Serial Number: 04026482B
Detector Serial Number: 58762
Env. Background: System Bkgd 195589
Reagent Blank: <not performed>

Sample Size: 1.009E+000 +/- 0.000E+000 gram
Sample Date/Time: 5/15/2017 1:53:05 PM
Acquisition Date/Time: 9/7/2017 2:07:40 PM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
Tracer Quantity: 0.673 mL
Effective Efficiency: 0.1892 +/- 0.0105
Counting Efficiency: 0.1713 +/- 0.0029 on 11/18/2016 10:08:38 AM
Chem. Recovery Factor: 1.1041 +/- 0.0641

Peak Match Tolerance: 0.150 MeV

PEAK AREA REPORT

Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
U-232	T	5.270	392.98	9.90	1.02	0.00E+000	16.4
U-234		4.718	51.47	27.79	1.53	0.00E+000	4.4
U-235		4.379	8.32	71.13	0.68	0.00E+000	3.0
U-238		4.145	48.30	28.78	1.70	0.00E+000	3.8

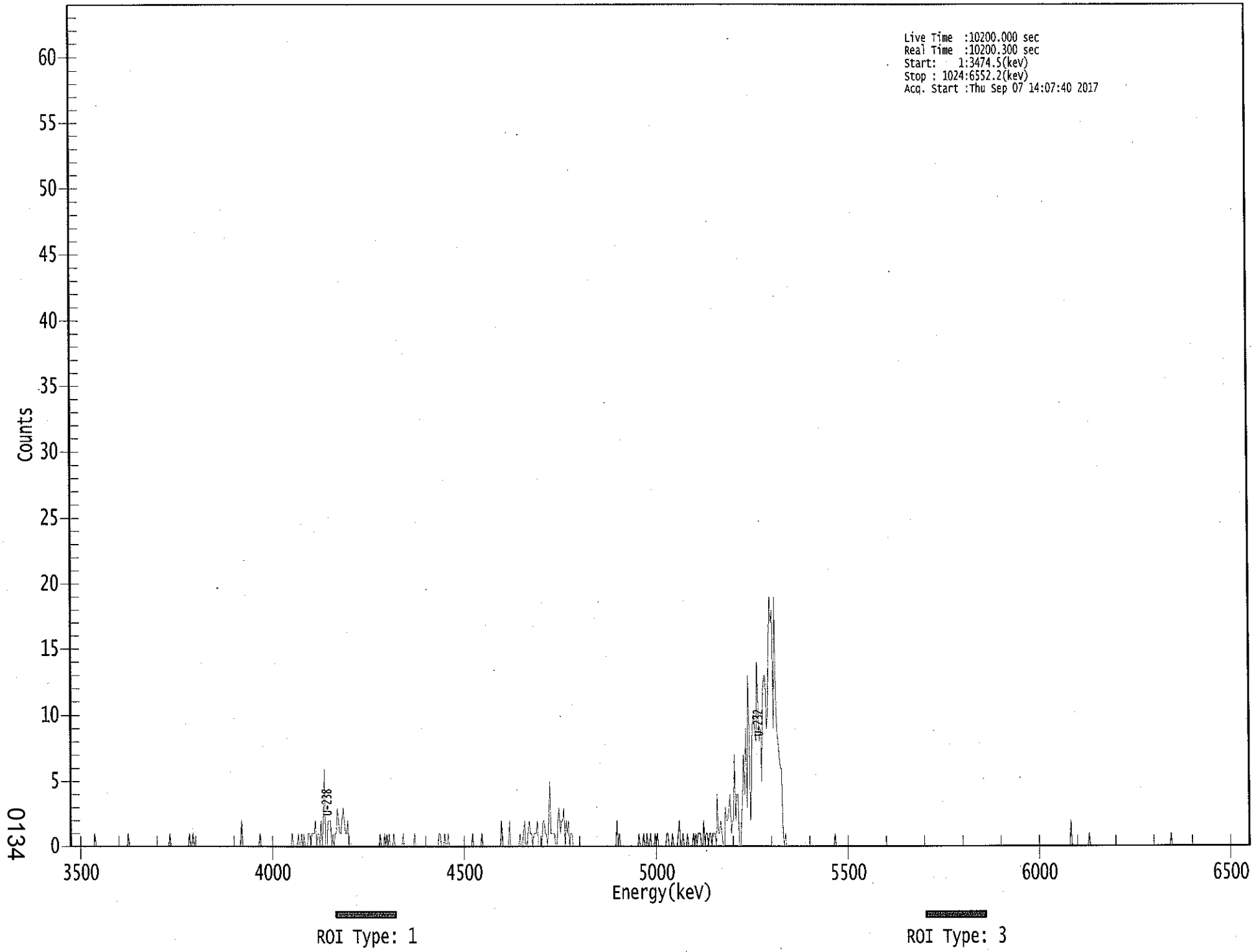
T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.993	5302.50*	5.48E+000 +/- 5.97E-001	8.79E-002 +/- 9.57E-003
U-234	0.986	4761.50*	7.16E-001 +/- 2.14E-001	9.89E-002 +/- 1.08E-002
U-235	1.000	4385.50*	1.43E-001 +/- 1.03E-001	9.68E-002 +/- 1.05E-002
U-238	0.989	4184.40*	6.69E-001 +/- 2.06E-001	1.02E-001 +/- 1.11E-002

AG 9/8/17

0000193760.CNF



0134

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

Sample Title: 08

Elapsed Live time: 10200
Elapsed Real Time: 10200

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

369:	0	0	0	0	0	2	0	0

Sample Title: 08

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

801:	0	0	0	0	0	0	0	0

Sample Title: 08

Channel								
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	2	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:	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	0	0
937:	0	0	0	0	0	0	0	0
945:	0	0	0	0	0	0	0	0
953:	0	0	1	0	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 9/8/17

Sample Description: HTC-A08-BKGD01-2430-01
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001937
Batch Identification: 1707091A-UU
Sample Identification: 09
Sample Geometry: Shelf 2
Procedure Description: U iso

Detector Name: Alpha_047
Chamber Serial Number: 02030596A
Detector Serial Number: 91086
Env. Background: System Bkgd 195590
Reagent Blank: <not performed>

Sample Size: 1.024E+000 +/- 0.000E+000 gram
Sample Date/Time: 5/15/2017 1:53:05 PM
Acquisition Date/Time: 9/7/2017 2:07:34 PM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
Tracer Quantity: 0.671 mL
Effective Efficiency: 0.1761 +/- 0.0101
Counting Efficiency: 0.1623 +/- 0.0028 on 11/18/2016 10:08:37 AM
Chem. Recovery Factor: 1.0851 +/- 0.0649

Peak Match Tolerance: 0.150 MeV

PEAK AREA REPORT

Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
U-232	T	5.265	364.98	10.28	1.02	0.00E+000	11.5
U-234		4.715	53.49	26.95	0.51	0.00E+000	4.9
U-235		4.389	5.83	82.55	0.17	0.00E+000	3.0
U-238		4.135	37.66	32.11	0.34	0.00E+000	3.7

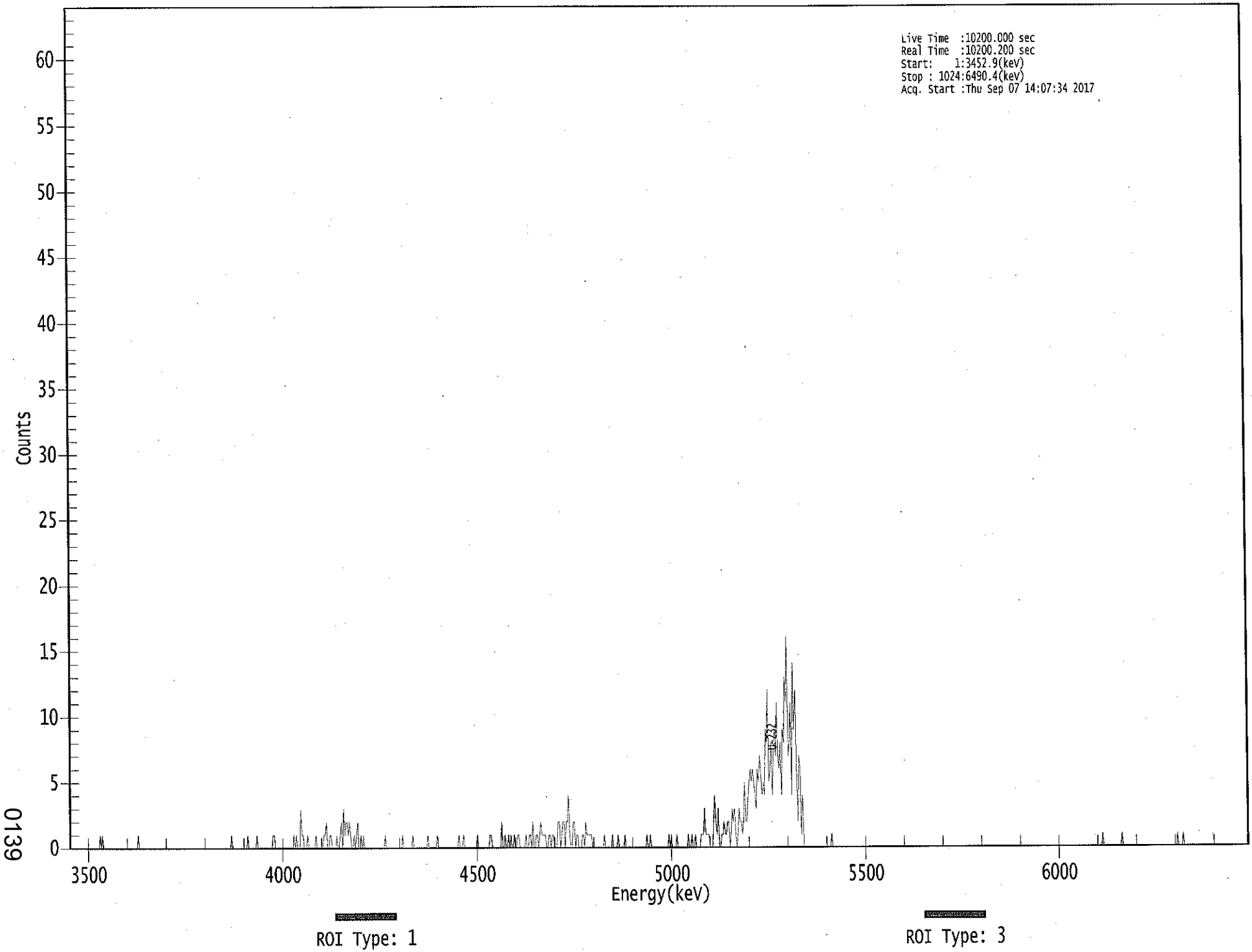
T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.990	5302.50*	5.39E+000 +/- 6.05E-001	9.31E-002 +/- 1.04E-002
U-234	0.984	4761.50*	7.88E-001 +/- 2.30E-001	7.73E-002 +/- 8.67E-003
U-235	1.000	4385.50*	1.06E-001 +/- 8.82E-002	7.58E-002 +/- 8.51E-003
U-238	0.983	4184.40*	5.52E-001 +/- 1.88E-001	7.01E-002 +/- 7.87E-003

AG 9/8/17

0000193762.CNF



0139

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

Sample Title: 09

Elapsed Live time: 10200
Elapsed Real Time: 10200

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

369:	0	0	0	0	0	0	2	0

Sample Title: 09

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

801:	0	0	0	0	0	0	0	0

Sample Title: 09

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

Apex-Alpha™

WS 9/7/17

Sample Description: HTC-A08-BKGD01-3036-01
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001937
Batch Identification: 1707091A-UU
Sample Identification: 10
Sample Geometry: Shelf 2
Procedure Description: U iso

Detector Name: Alpha_048
Chamber Serial Number: 02030596B
Detector Serial Number: 83111
Env. Background: System Bkgd 195591
Reagent Blank: <not performed>

Sample Size: 1.011E+000 +/- 0.000E+000 gram
Sample Date/Time: 5/15/2017 1:53:05 PM
Acquisition Date/Time: 9/7/2017 2:07:36 PM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
Tracer Quantity: 0.672 mL
Effective Efficiency: 0.2008 +/- 0.0109
Counting Efficiency: 0.1633 +/- 0.0028 on 11/18/2016 10:08:35 AM
Chem. Recovery Factor: 1.2291 +/- 0.0698

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	5.294	416.66	9.61	0.34	0.00E+000	22.3
U-234		4.746	61.66	25.04	0.34	0.00E+000	3.3
U-235		4.412	6.49	80.40	0.51	0.00E+000	3.0
U-238		4.161	51.83	27.28	0.17	0.00E+000	3.7

T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.999	5302.50*	5.47E+000 +/- 5.80E-001	6.28E-002 +/- 6.66E-003
U-234	0.998	4761.50*	8.07E-001 +/- 2.19E-001	6.26E-002 +/- 6.64E-003
U-235	0.995	4385.50*	1.05E-001 +/- 8.49E-002	8.47E-002 +/- 8.99E-003
U-238	0.996	4184.40*	6.75E-001 +/- 1.98E-001	5.44E-002 +/- 5.77E-003

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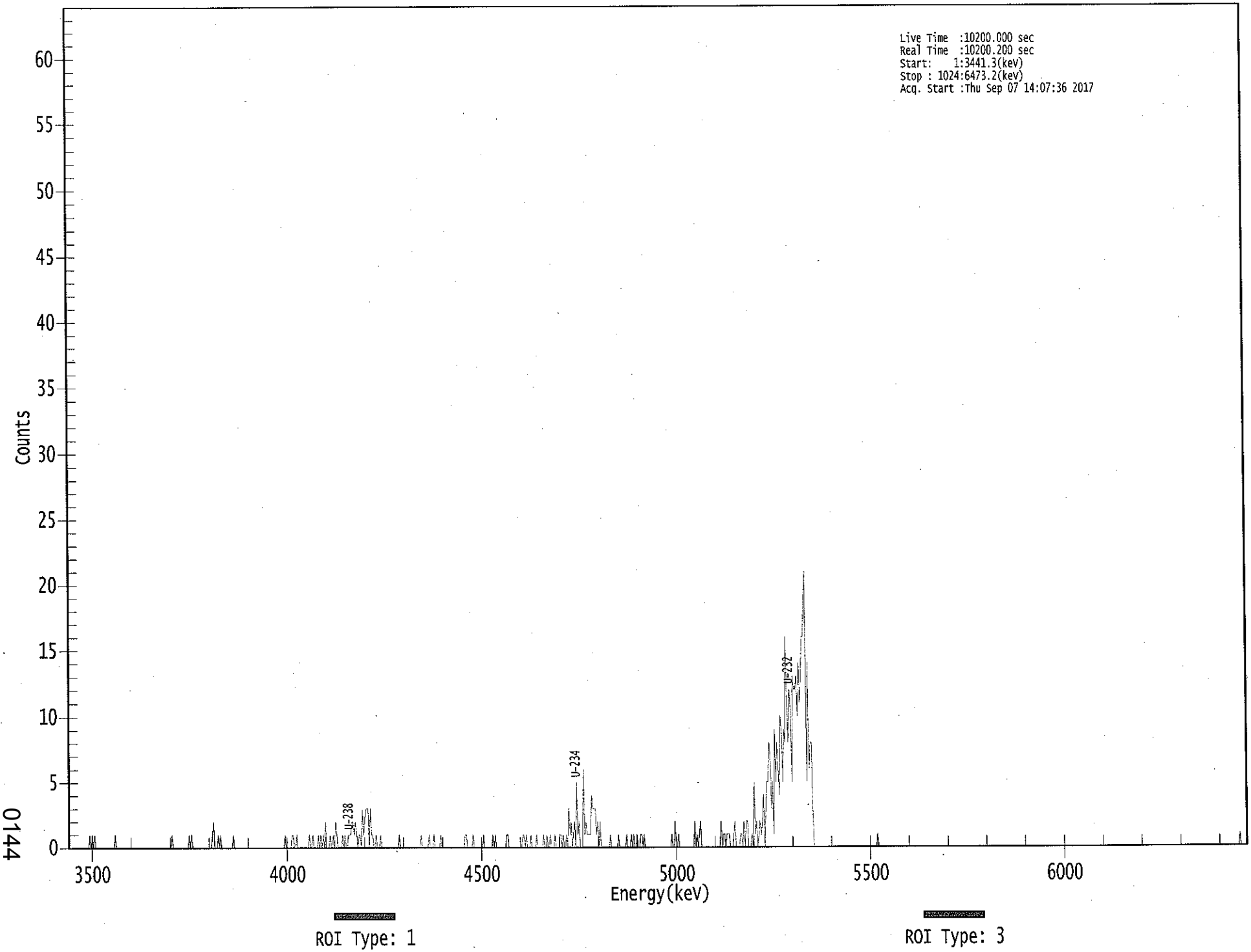
0000193763.CNF



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

369:	0	1	0	0	0	0	0	0

Sample Title: 10

Channel								
377:	0	0	0	1	1	0	0	0
385:	0	0	0	0	0	0	0	0
393:	0	1	1	0	1	0	0	0
401:	1	0	0	0	0	1	0	0
409:	0	0	0	1	0	0	1	0
417:	0	1	0	0	0	1	0	0
425:	0	1	1	0	1	0	0	1
433:	0	3	1	2	0	1	2	0
441:	5	1	2	0	0	0	6	1
449:	2	1	1	1	1	4	3	3
457:	3	1	2	0	2	0	0	0
465:	0	0	0	0	0	1	0	0
473:	0	0	0	0	1	0	0	0
481:	0	0	0	1	0	0	0	1
489:	0	1	0	0	1	0	0	1
497:	1	0	1	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	1	0	0	2	0	0
529:	1	0	0	0	0	0	0	0
537:	0	0	0	0	0	0	2	0
545:	1	0	1	2	0	0	0	0
553:	0	0	0	0	0	0	0	0
561:	0	0	0	0	0	2	0	1
569:	1	0	1	1	1	0	0	0
577:	1	2	0	0	0	0	1	1
585:	0	2	0	2	2	0	0	0
593:	1	0	5	1	2	0	1	2
601:	1	2	4	0	3	5	5	8
609:	7	3	5	1	9	5	8	6
617:	4	10	9	5	9	8	16	11
625:	8	12	11	5	13	12	12	13
633:	10	14	11	13	16	16	19	21
641:	5	14	6	8	8	3	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	1	0	0
705:	0	0	0	0	0	0	0	0
713:	0	0	0	0	0	0	0	0
721:	0	0	0	0	0	0	0	0
729:	0	0	0	0	0	0	0	0
737:	0	0	0	0	0	0	0	0
745:	0	0	0	0	0	0	0	0
753:	0	0	0	0	0	0	0	0
761:	0	0	0	0	0	0	0	0
769:	0	0	0	0	0	0	0	0
777:	0	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0

801:	0	0	0	0	0	0	0	0

Sample Title: 10

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

Apex-Alpha™

KS 9/7/17

Sample Description: HTC-A08-BKGD01-3642-01
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001937
Batch Identification: 1707091A-UU
Sample Identification: 11
Sample Geometry: Shelf 2
Procedure Description: U iso

Detector Name: Alpha_049
Chamber Serial Number: 10006121A
Detector Serial Number: 49
Env. Background: System Bkgd 195592
Reagent Blank: <not performed>

Sample Size: 1.020E+000 +/- 0.000E+000 gram
Sample Date/Time: 5/15/2017 1:53:05 PM
Acquisition Date/Time: 9/7/2017 2:08:14 PM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
Tracer Quantity: 0.671 mL
Effective Efficiency: 0.1634 +/- 0.0096
Counting Efficiency: 0.1488 +/- 0.0026 on 11/18/2016 3:34:20 PM
Chem. Recovery Factor: 1.0980 +/- 0.0676

Peak Match Tolerance: 0.150 MeV

PEAK AREA REPORT

Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
U-232	T	5.268	338.83	10.65	0.17	0.00E+000	16.3
U-234		4.716	47.98	28.65	1.02	0.00E+000	3.7
U-235		4.389	6.83	76.08	0.17	0.00E+000	3.0
U-238		4.155	43.32	30.05	0.68	0.00E+000	4.9

T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.992	5302.50*	5.42E+000 +/- 6.26E-001	6.67E-002 +/- 7.72E-003
U-234	0.985	4761.50*	7.64E-001 +/- 2.36E-001	1.00E-001 +/- 1.16E-002
U-235	1.000	4385.50*	1.34E-001 +/- 1.03E-001	8.20E-002 +/- 9.49E-003
U-238	0.994	4184.40*	6.87E-001 +/- 2.21E-001	8.95E-002 +/- 1.04E-002

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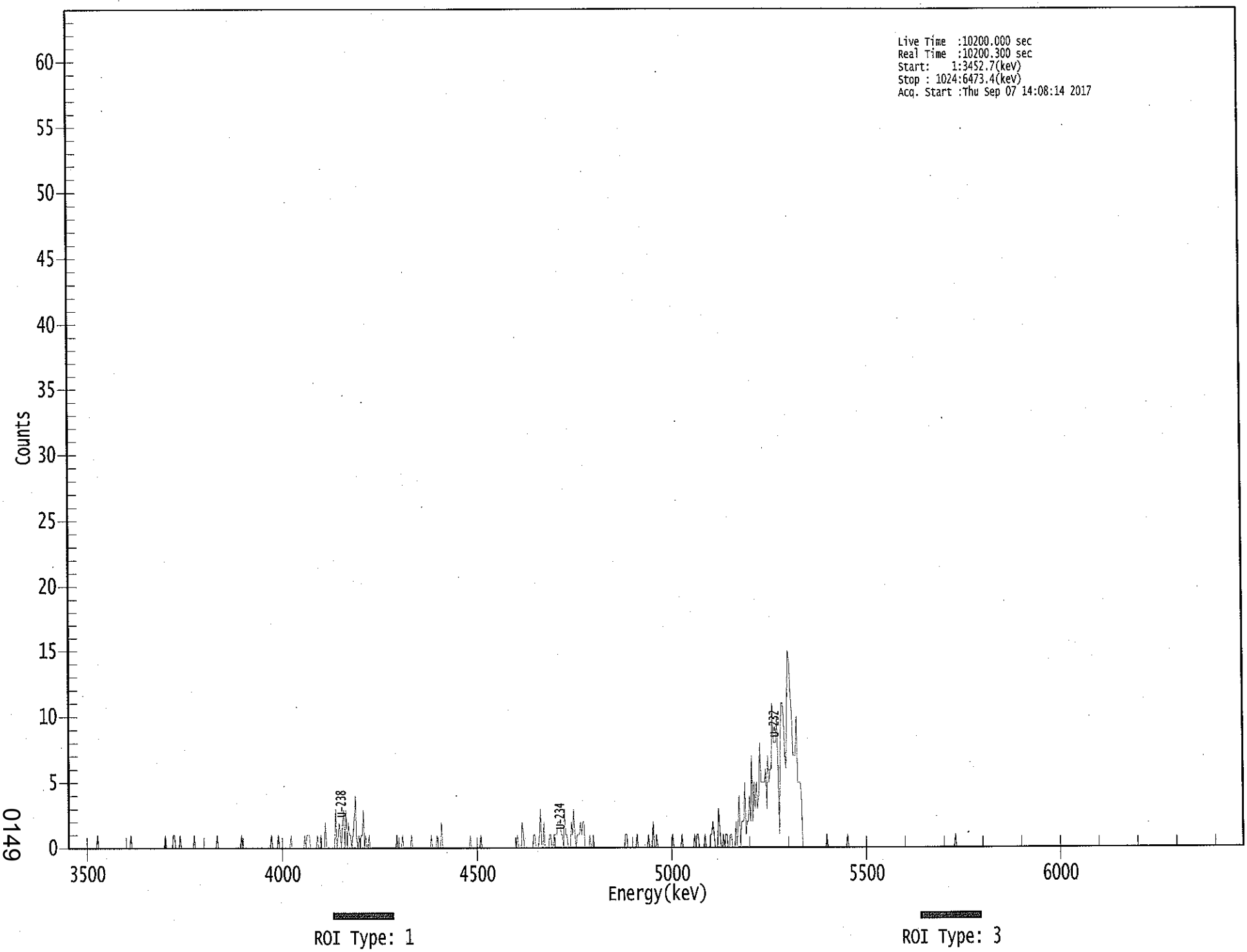
0000193766.CNF



0149

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

Sample Title: 11

Elapsed Live time: 10200
Elapsed Real Time: 10200

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

369:	0	0	0	0	0	0	0	0

Sample Title: 11

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

801:	0	0	0	0	0	0	0	0

Sample Title: 11

Channel								
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	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
9/7/17

Apex-Alpha™

Sample Description: HTC-A08-BKGD01-4248-01
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001937
Batch Identification: 1707091A-UU
Sample Identification: 12
Sample Geometry: Shelf 2
Procedure Description: U iso

Detector Name: Alpha_050
Chamber Serial Number: 10006121B
Detector Serial Number: 50
Env. Background: System Bkgd 195593
Reagent Blank: <not performed>

Sample Size: 1.052E+000 +/- 0.000E+000 gram
Sample Date/Time: 5/15/2017 1:53:05 PM
Acquisition Date/Time: 9/7/2017 2:08:16 PM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
Tracer Quantity: 0.672 mL
Effective Efficiency: 0.1798 +/- 0.0102
Counting Efficiency: 0.1433 +/- 0.0025 on 11/18/2016 3:34:18 PM
Chem. Recovery Factor: 1.2553 +/- 0.0745

Peak Match Tolerance: 0.150 MeV

PEAK AREA REPORT

Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
U-232	T	5.276	373.47	10.17	1.53	0.00E+000	21.3
U-234		4.734	52.30	27.61	1.70	0.00E+000	3.0
U-235		4.396	3.98	112.01	1.02	0.00E+000	3.0
U-238		4.169	42.98	30.31	1.02	0.00E+000	5.9

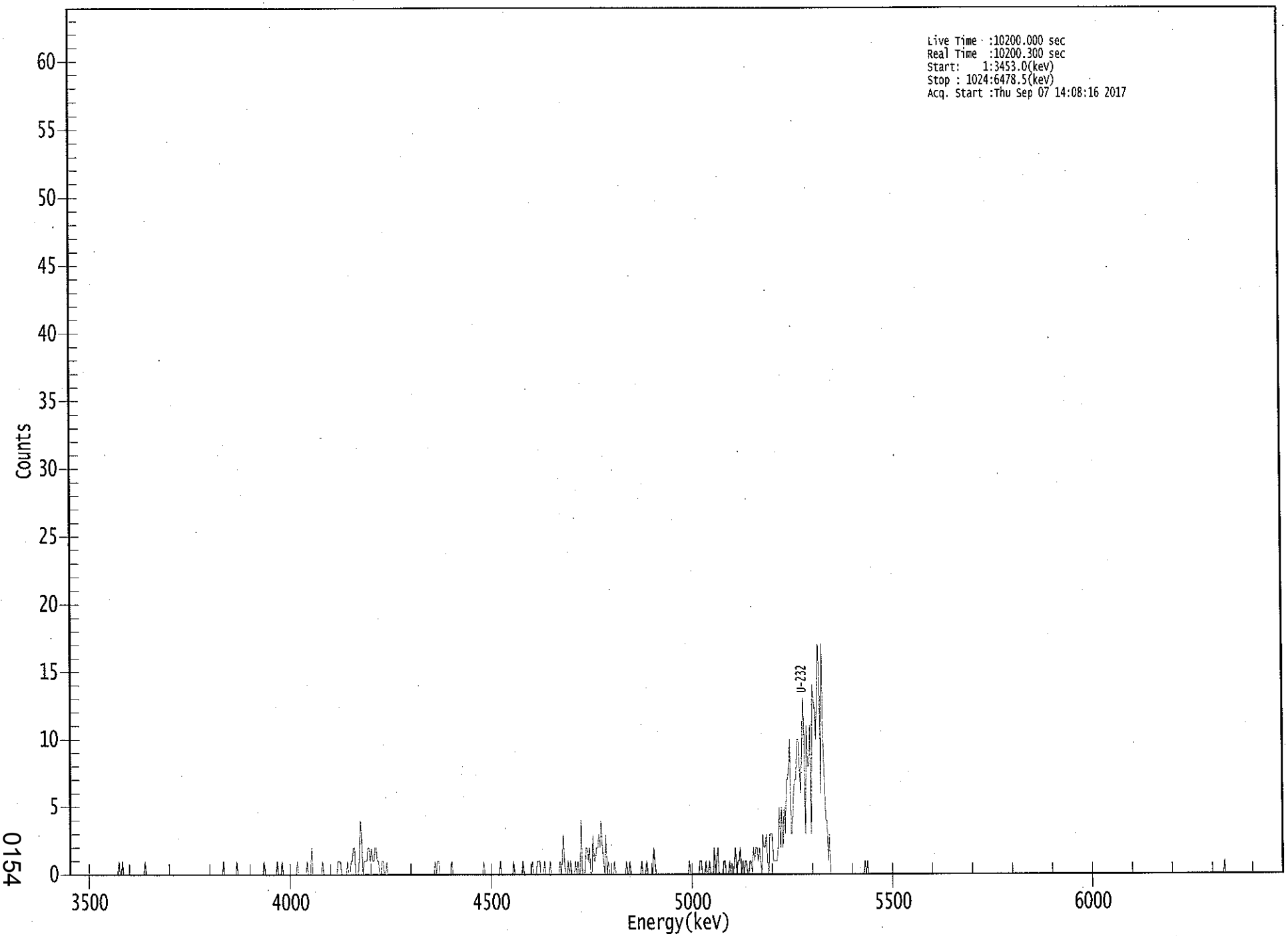
T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.995	5302.50*	5.26E+000 +/- 5.85E-001	1.00E-001 +/- 1.11E-002
U-234	0.995	4761.50*	7.34E-001 +/- 2.18E-001	1.03E-001 +/- 1.15E-002
U-235	0.999	4385.50*	6.89E-002 +/- 7.75E-002	1.09E-001 +/- 1.21E-002
U-238	0.998	4184.40*	6.00E-001 +/- 1.94E-001	8.80E-002 +/- 9.79E-003

AG
9/8/17

0000193767.CNF



[redacted] ROI Type: 1

[redacted] ROI Type: 3

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

Sample Title: 12

Elapsed Live time: 10200
Elapsed Real Time: 10200

Channel								
1:	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	1	0	0	1	0	0	0
49:	0	0	0	0	0	0	0	0
57:	0	0	0	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	0	0	0	0	0	0	0
121:	0	0	0	0	0	0	0	0
129:	0	1	0	0	0	0	0	0
137:	0	0	0	0	1	0	0	0
145:	0	0	0	0	0	0	0	0
153:	0	0	0	0	0	0	0	0
161:	0	0	0	1	0	0	0	0
169:	0	0	0	0	0	0	1	0
177:	0	0	1	0	0	0	0	0
185:	0	0	0	0	0	0	0	1
193:	0	0	0	0	0	0	0	1
201:	0	0	0	2	0	0	0	0
209:	0	0	0	0	1	0	0	0
217:	0	0	0	0	0	0	0	0
225:	0	1	1	1	0	0	0	0
233:	0	1	0	0	1	1	2	2
241:	0	0	0	1	4	3	0	1
249:	1	1	2	2	1	2	1	1
257:	2	2	1	1	0	0	1	1
265:	0	0	1	0	0	0	0	0
273:	0	0	0	0	0	0	0	0
281:	0	0	0	0	0	0	0	0
289:	0	0	0	0	0	0	0	0
297:	0	0	0	0	0	0	0	0
305:	0	0	0	1	0	1	1	0
313:	0	0	0	0	0	0	0	0
321:	0	1	0	0	0	0	0	0
329:	0	0	0	0	0	0	0	0
337:	0	0	0	0	0	0	0	0
345:	0	0	0	0	1	0	0	0
353:	0	0	0	0	0	0	0	0
361:	0	0	1	0	0	0	0	0

369:	0	0	0	0	0	1	0	0

Sample Title: 12

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

801:	0	0	0	0	0	0	0	0

Sample Title: 12

Channel								
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	0
929:	0	0	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	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

KB 9/7/17

Apex-Alpha™

Sample Description: HTC-A08-BKGD02-0006-01
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001937
Batch Identification: 1707091A-UU
Sample Identification: 13
Sample Geometry: Shelf 2
Procedure Description: U iso

Detector Name: Alpha_053
Chamber Serial Number: 10006122A
Detector Serial Number: 53
Env. Background: System Bkgd 195595
Reagent Blank: <not performed>

Sample Size: 1.054E+000 +/- 0.000E+000 gram
Sample Date/Time: 5/15/2017 1:53:05 PM
Acquisition Date/Time: 9/7/2017 2:08:17 PM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
Tracer Quantity: 0.672 mL
Effective Efficiency: 0.1800 +/- 0.0102
Counting Efficiency: 0.1515 +/- 0.0026 on 11/18/2016 3:34:14 PM
Chem. Recovery Factor: 1.1884 +/- 0.0704

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	5.308	373.66	10.14	0.34	0.00E+000	7.4
U-234		4.763	50.98	27.77	1.02	0.00E+000	5.0
U-235		4.366	4.00	109.57	0.00	0.00E+000	3.0
U-238		4.181	49.83	27.82	0.17	0.00E+000	3.3

T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	1.000	5302.50*	5.25E+000 +/- 5.82E-001	6.71E-002 +/- 7.45E-003
U-234	1.000	4761.50*	7.13E-001 +/- 2.13E-001	8.82E-002 +/- 9.79E-003
U-235	0.997	4385.50*	6.91E-002 +/- 7.60E-002	1.04E-001 +/- 1.15E-002
U-238	1.000	4184.40*	6.94E-001 +/- 2.08E-001	5.82E-002 +/- 6.46E-003

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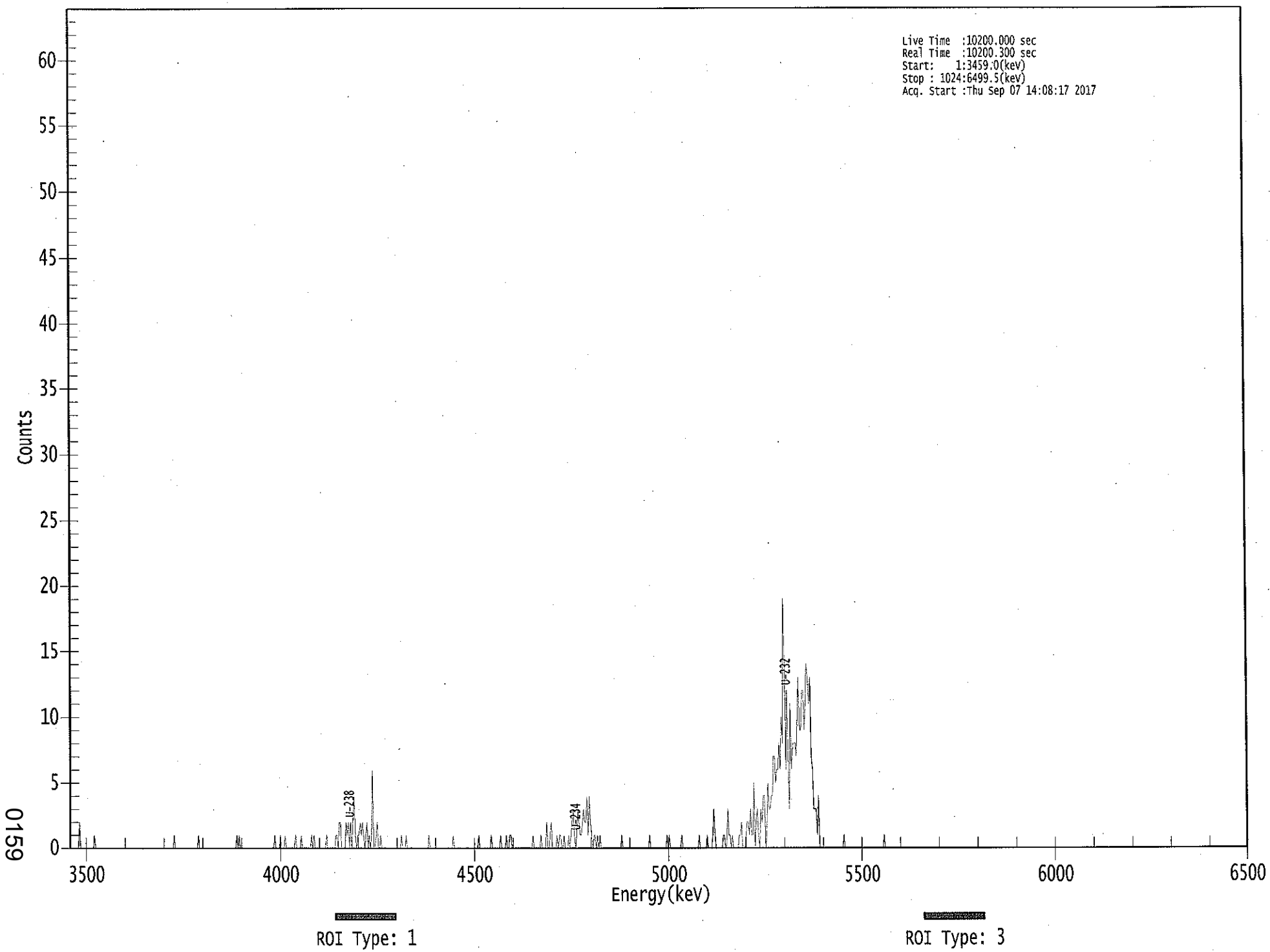
0000193764.CNF



0159

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

Sample Title: 13

Elapsed Live time: 10200
Elapsed Real Time: 10200

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

369:	0	0	0	0	0	1	0	0

Sample Title: 13

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

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

XB
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Apex-Alpha™

Sample Description: HTC-A08-BKGD02-0612-01
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001937
Batch Identification: 1707091A-UU
Sample Identification: 14
Sample Geometry: Shelf 2
Procedure Description: U iso

Detector Name: Alpha_054
Chamber Serial Number: 10006122B
Detector Serial Number: 54
Env. Background: System Bkgd 195596
Reagent Blank: <not performed>

Sample Size: 1.072E+000 +/- 0.000E+000 gram
Sample Date/Time: 5/15/2017 1:53:05 PM
Acquisition Date/Time: 9/7/2017 2:08:19 PM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
Tracer Quantity: 0.672 mL
Effective Efficiency: 0.1773 +/- 0.0101
Counting Efficiency: 0.1363 +/- 0.0024 on 11/18/2016 3:34:12 PM
Chem. Recovery Factor: 1.3003 +/- 0.0776

Peak Match Tolerance: 0.150 MeV

PEAK AREA REPORT

Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
U-232	T	5.282	367.66	10.23	0.34	0.00E+000	8.0
U-234		4.724	47.64	28.87	1.36	0.00E+000	3.7
U-235		4.405	7.83	70.93	0.17	0.00E+000	3.0
U-238		4.152	44.66	29.46	0.34	0.00E+000	4.4

T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.997	5302.50*	5.15E+000 +/- 5.76E-001	6.70E-002 +/- 7.49E-003
U-234	0.990	4761.50*	6.66E-001 +/- 2.06E-001	9.58E-002 +/- 1.07E-002
U-235	0.997	4385.50*	1.35E-001 +/- 9.69E-002	7.19E-002 +/- 8.04E-003
U-238	0.992	4184.40*	6.21E-001 +/- 1.96E-001	6.65E-002 +/- 7.44E-003

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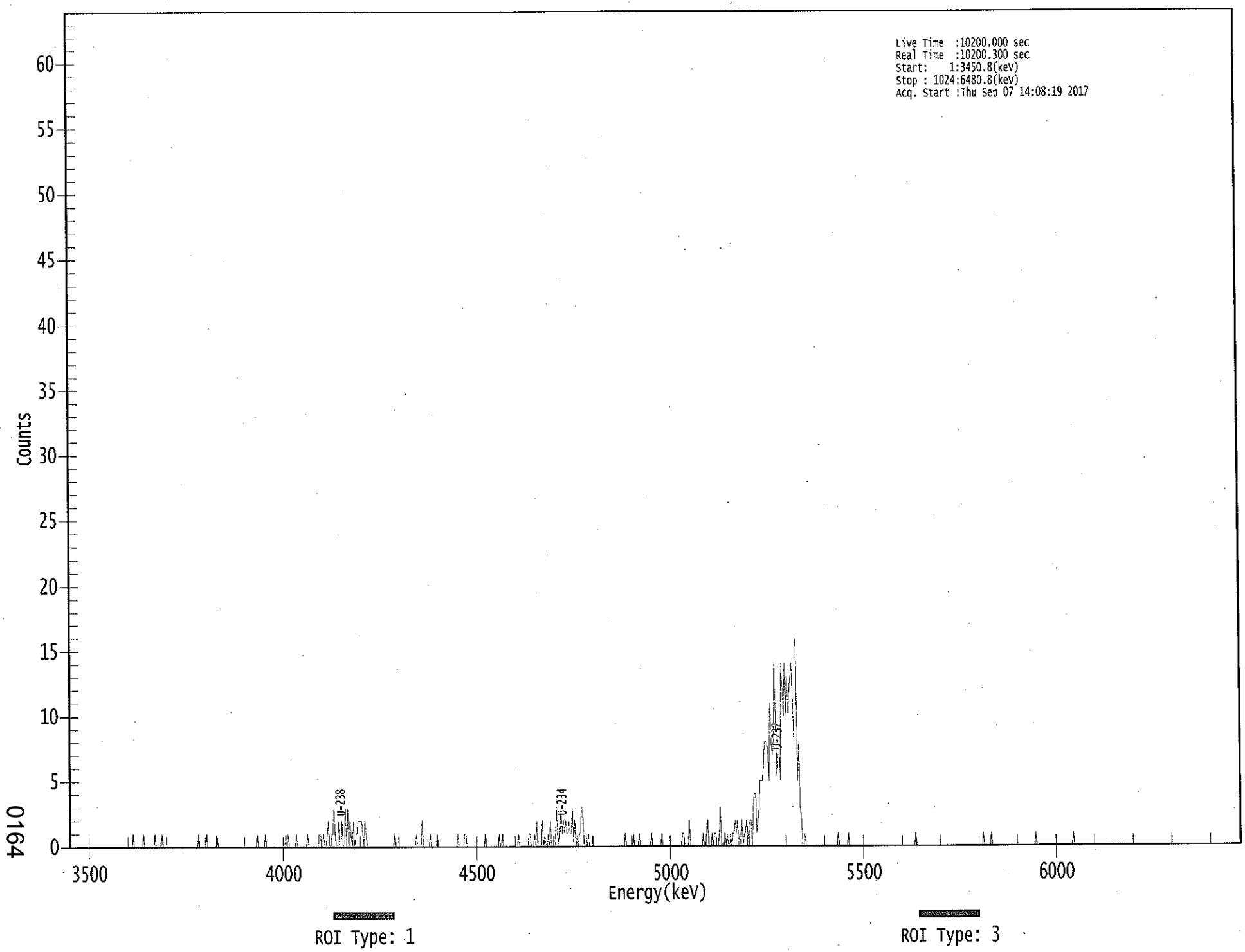

0164

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

Sample Title: 14

Elapsed Live time: 10200
Elapsed Real Time: 10200

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

369:	0	0	0	0	0	0	1	0

Sample Title: 14

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

801:	0	0	0	0	1	0	0	0

Sample Title: 14

Channel								
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	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	1	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 9/7/17

Sample Description: HTC-A08-BKGD02-1218-01
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001937
Batch Identification: 1707091A-UU
Sample Identification: 15
Sample Geometry: Shelf 2
Procedure Description: U iso

Detector Name: Alpha_056
Chamber Serial Number: 10006124B
Detector Serial Number: 56
Env. Background: System Bkgd 195597
Reagent Blank: <not performed>

Sample Size: 1.025E+000 +/- 0.000E+000 gram
Sample Date/Time: 5/15/2017 1:53:05 PM
Acquisition Date/Time: 9/7/2017 2:08:21 PM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
Tracer Quantity: 0.671 mL
Effective Efficiency: 0.1773 +/- 0.0101
Counting Efficiency: 0.1595 +/- 0.0027 on 11/18/2016 3:34:09 PM
Chem. Recovery Factor: 1.1121 +/- 0.0664

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	367.79	10.26	2.21	0.00E+000	36.2
U-234		4.733	52.81	27.32	1.19	0.00E+000	4.0
U-235		4.373	5.15	94.34	0.85	0.00E+000	3.0
U-238		4.144	51.32	27.57	0.68	0.00E+000	5.9

T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.993	5302.50*	5.39E+000 +/- 6.04E-001	1.17E-001 +/- 1.31E-002
U-234	0.994	4761.50*	7.71E-001 +/- 2.28E-001	9.62E-002 +/- 1.08E-002
U-235	0.999	4385.50*	9.28E-002 +/- 8.82E-002	1.08E-001 +/- 1.21E-002
U-238	0.988	4184.40*	7.46E-001 +/- 2.22E-001	8.20E-002 +/- 9.19E-003

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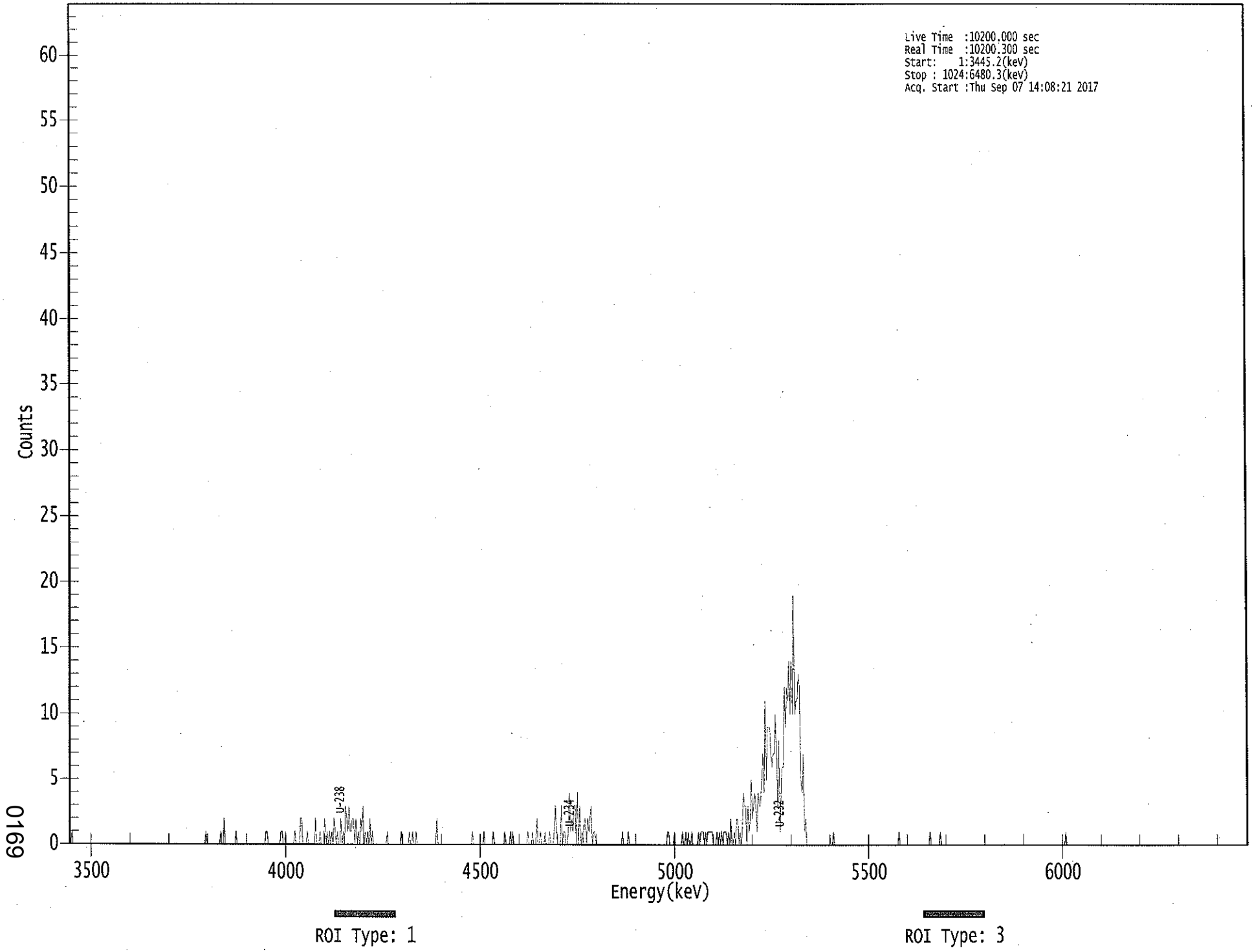
0000193765.CNF



0169

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

Sample Title: 15

Elapsed Live time: 10200
Elapsed Real Time: 10200

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

369:	0	0	0	0	0	0	0	0

Sample Title: 15

Channel								
377:	0	1	0	0	0	0	1	0
385:	1	0	0	0	0	0	0	0
393:	0	0	0	0	0	1	0	0
401:	0	1	0	0	0	2	0	0
409:	1	0	0	0	1	0	0	0
417:	1	0	0	0	1	3	1	0
425:	0	0	3	0	1	1	0	0
433:	1	4	1	2	1	3	3	0
441:	4	0	3	0	1	0	2	2
449:	0	2	1	2	3	0	1	1
457:	0	0	0	0	0	0	0	0
465:	0	0	0	0	0	0	0	0
473:	0	0	0	0	0	0	0	1
481:	0	0	0	0	1	0	0	0
489:	0	0	0	0	0	0	0	0
497:	0	0	0	0	0	0	0	0
505:	0	0	0	0	0	0	0	0
513:	0	0	0	0	0	0	1	1
521:	0	0	0	0	1	0	0	0
529:	0	0	0	1	0	0	1	0
537:	1	0	0	1	0	0	0	0
545:	0	1	0	1	1	1	0	1
553:	0	1	1	1	1	1	0	0
561:	0	1	0	1	0	1	0	1
569:	1	1	0	1	0	2	0	0
577:	1	0	2	2	0	1	0	1
585:	4	3	3	0	3	1	2	5
593:	2	3	4	3	1	4	3	3
601:	5	7	4	11	5	9	9	9
609:	7	6	7	7	10	7	3	8
617:	1	5	6	6	12	9	12	11
625:	14	10	14	10	19	10	11	11
633:	13	12	5	4	7	1	2	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	1	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	1
721:	0	0	0	0	0	0	0	0
729:	0	0	0	0	0	0	0	0
737:	0	0	0	0	0	0	0	0
745:	0	0	1	0	0	0	0	0
753:	0	0	0	1	0	0	0	0
761:	0	0	0	0	0	0	0	0
769:	0	0	0	0	0	0	0	0
777:	0	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0

801:	0	0	0	0	0	0	0	0

Sample Title: 15

Channel								
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	1	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™

KP
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Sample Description: HTC-A08-BKGD02-1824-01
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001937
Batch Identification: 1707091A-UU
Sample Identification: 16
Sample Geometry: Shelf 2
Procedure Description: U iso

Detector Name: Alpha_057
Chamber Serial Number: 01017326A
Detector Serial Number: 57
Env. Background: System Bkgd 195598
Reagent Blank: <not performed>

Sample Size: 1.024E+000 +/- 0.000E+000 gram
Sample Date/Time: 5/15/2017 1:53:05 PM
Acquisition Date/Time: 9/7/2017 2:08:10 PM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
Tracer Quantity: 0.672 mL
Effective Efficiency: 0.2031 +/- 0.0110
Counting Efficiency: 0.1646 +/- 0.0028 on 11/18/2016 3:34:08 PM
Chem. Recovery Factor: 1.2339 +/- 0.0698

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	5.283	421.32	9.56	0.68	0.00E+000	34.4
U-234		4.731	67.32	24.03	0.68	0.00E+000	5.9
U-235		4.436	2.66	128.85	0.34	0.00E+000	3.0
U-238		4.154	60.66	25.25	0.34	0.00E+000	3.7

T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.997	5302.50*	5.39E+000 +/- 5.70E-001	7.22E-002 +/- 7.63E-003
U-234	0.993	4761.50*	8.59E-001 +/- 2.26E-001	7.20E-002 +/- 7.61E-003
U-235	0.982	4385.50*	4.19E-002 +/- 5.41E-002	7.53E-002 +/- 7.96E-003
U-238	0.994	4184.40*	7.71E-001 +/- 2.11E-001	6.08E-002 +/- 6.42E-003

AG
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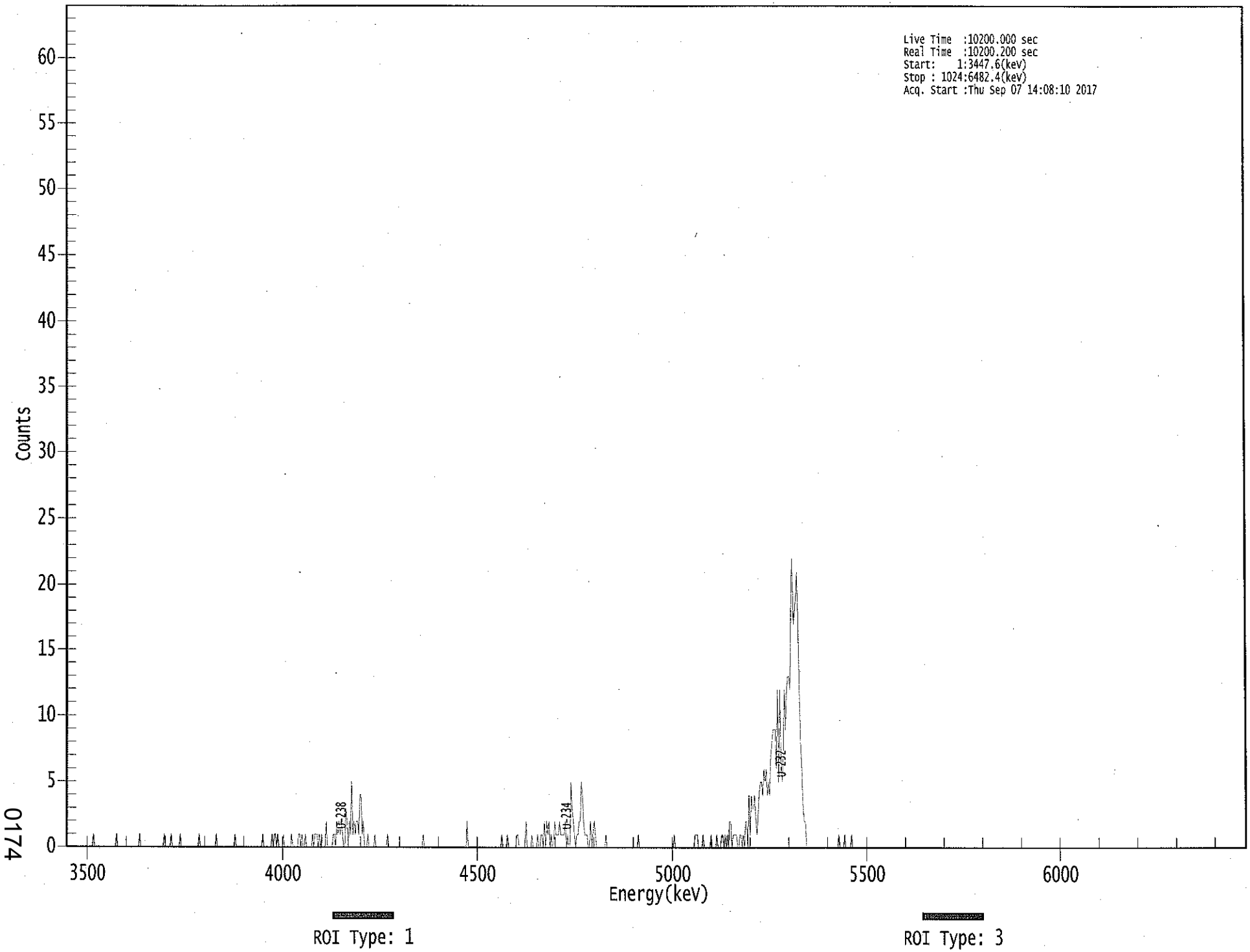
0000193769.CNF



0174

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

Sample Title: 16

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

369:	0	0	0	0	0	0	0	0

Sample Title: 16

Channel								
377:	1	0	0	0	0	1	0	0
385:	0	0	0	0	0	1	1	0
393:	0	0	0	0	0	2	0	0
401:	0	0	1	0	0	0	0	1
409:	0	0	1	1	0	2	0	2
417:	1	2	0	1	0	0	2	1
425:	1	1	2	1	1	1	1	2
433:	0	1	0	0	5	3	2	1
441:	0	1	1	2	2	5	4	2
449:	1	1	1	0	0	2	0	1
457:	2	1	0	0	0	0	0	0
465:	0	0	1	0	0	0	0	0
473:	0	0	0	0	0	0	0	0
481:	0	0	0	0	0	0	0	0
489:	0	0	0	0	0	0	1	0
497:	0	0	0	0	0	0	0	0
505:	0	0	0	0	0	0	0	0
513:	0	0	0	0	0	0	0	0
521:	0	0	0	0	0	1	0	0
529:	0	0	0	0	0	0	0	0
537:	0	0	0	0	0	0	0	1
545:	1	1	0	0	0	0	1	0
553:	0	0	0	0	0	1	0	0
561:	0	0	1	0	0	0	1	1
569:	0	1	0	1	0	2	2	0
577:	1	1	1	1	0	0	1	1
585:	0	1	0	2	2	0	4	1
593:	4	3	3	4	2	1	3	4
601:	5	5	4	6	5	6	4	5
609:	4	7	8	9	9	9	6	12
617:	5	12	7	5	7	12	9	12
625:	13	13	12	20	22	17	18	19
633:	21	17	12	8	6	3	2	2
641:	0	0	0	0	0	0	0	0
649:	0	0	0	0	0	0	0	0
657:	0	0	0	0	0	0	0	0
665:	0	0	0	0	1	0	0	0
673:	0	1	0	0	0	0	0	1
681:	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	0	0	0
697:	0	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: 16

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 9/8/17

Sample Description: HTC-A08-BKGD02-2430-01
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001937
Batch Identification: 1707091A-UU
Sample Identification: 17
Sample Geometry: Shelf 2
Procedure Description: U iso

Detector Name: Alpha_058
Chamber Serial Number: 01017326B
Detector Serial Number: 58
Env. Background: System Bkgd 195599
Reagent Blank: <not performed>

Sample Size: 1.024E+000 +/- 0.000E+000 gram
Sample Date/Time: 5/15/2017 1:53:05 PM
Acquisition Date/Time: 9/7/2017 2:08:12 PM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
Tracer Quantity: 0.671 mL
Effective Efficiency: 0.1934 +/- 0.0106
Counting Efficiency: 0.1665 +/- 0.0028 on 11/18/2016 3:34:06 PM
Chem. Recovery Factor: 1.1615 +/- 0.0669

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	400.66	9.80	0.34	0.00E+000	22.0
U-234		4.739	65.98	24.35	1.02	0.00E+000	4.7
U-235		4.395	4.32	102.62	0.68	0.00E+000	3.0
U-238		4.161	59.49	25.54	0.51	0.00E+000	7.4

T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.997	5302.50*	5.39E+000 +/- 5.82E-001	6.43E-002 +/- 6.94E-003
U-234	0.996	4761.50*	8.85E-001 +/- 2.36E-001	8.45E-002 +/- 9.12E-003
U-235	0.999	4385.50*	7.15E-002 +/- 7.38E-002	9.33E-002 +/- 1.01E-002
U-238	0.996	4184.40*	7.95E-001 +/- 2.20E-001	7.01E-002 +/- 7.56E-003

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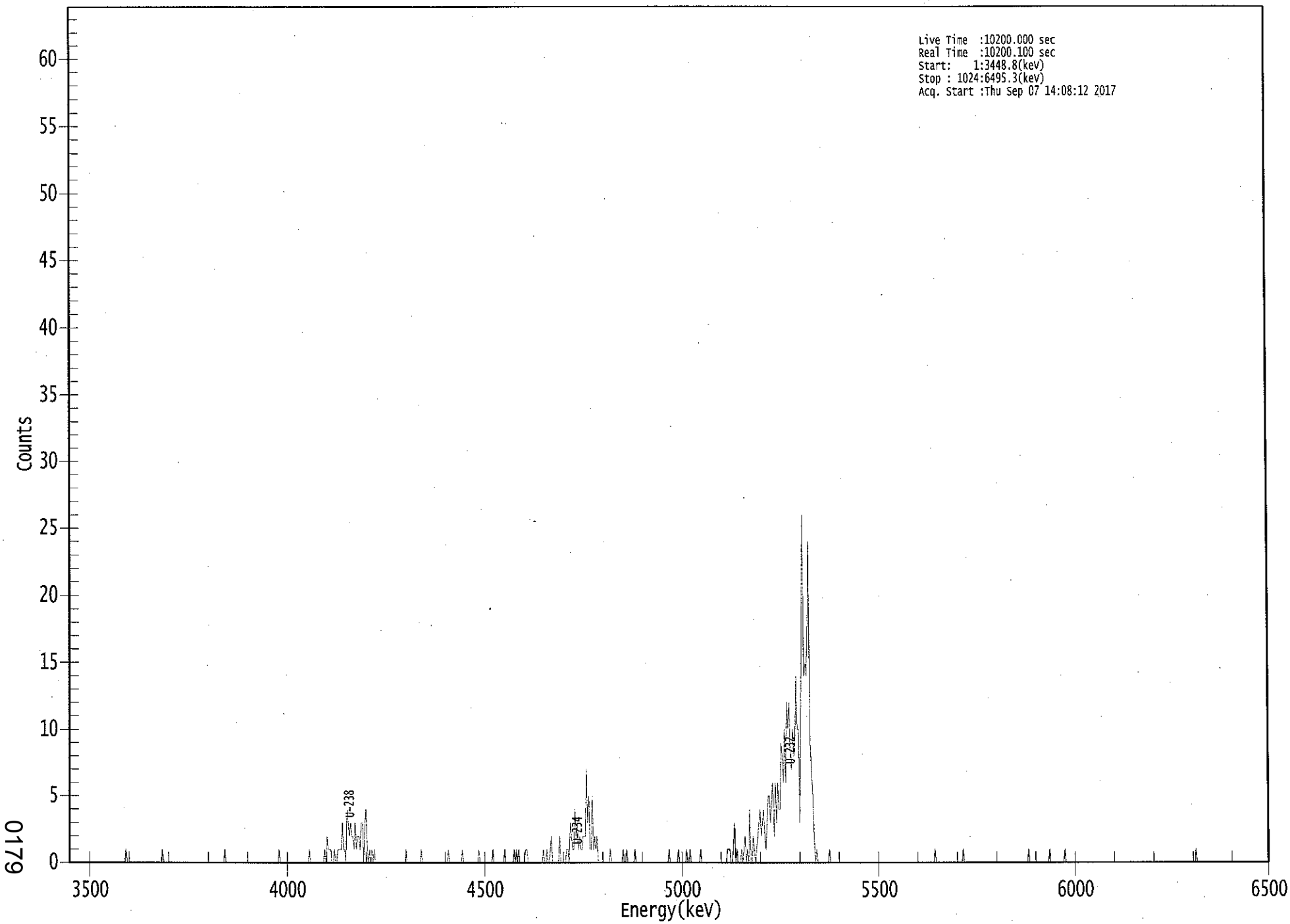
0000193761.CNF



0179

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

Sample Title: 17

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:	1	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0
65:	0	0	0	0	0	0	0	0
73:	0	0	0	0	0	0	0	1
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	1	0	0	0
137:	0	0	0	0	0	0	0	0
145:	0	0	0	0	0	0	0	0
153:	0	0	0	0	0	0	0	0
161:	0	0	0	0	0	0	0	0
169:	0	0	0	0	0	0	0	0
177:	0	0	1	0	0	0	0	0
185:	0	0	0	0	0	0	0	0
193:	0	0	0	0	0	0	0	0
201:	0	0	0	0	1	0	0	0
209:	0	0	0	0	0	0	0	0
217:	0	1	0	2	1	1	1	0
225:	0	1	0	0	1	1	1	1
233:	3	1	1	0	4	3	2	3
241:	2	2	1	3	1	2	2	1
249:	3	3	0	3	4	1	0	1
257:	0	1	0	1	0	0	0	0
265:	0	0	0	0	0	0	0	0
273:	0	0	0	0	0	0	0	0
281:	0	0	0	0	0	0	1	0
289:	0	0	0	0	0	0	0	0
297:	0	0	0	1	0	0	0	0
305:	0	0	0	0	0	0	0	0
313:	0	0	0	0	0	0	0	0
321:	0	0	1	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	1	0	0	0
353:	0	0	0	0	0	0	0	0
361:	1	0	0	0	0	0	0	0

369:	0	0	1	0	0	0	0	0

Sample Title: 17

Channel								
377:	0	0	1	0	1	0	1	0
385:	0	0	0	0	1	1	0	0
393:	0	0	0	0	0	0	0	0
401:	0	0	0	1	0	0	1	0
409:	0	1	2	0	0	0	0	0
417:	0	2	0	0	0	0	0	1
425:	1	0	3	2	1	1	4	2
433:	3	1	2	1	1	2	2	2
441:	7	3	5	1	1	5	1	2
449:	1	2	0	0	0	0	0	0
457:	0	0	0	0	1	0	0	0
465:	0	0	0	0	0	0	0	1
473:	0	0	1	0	0	0	0	0
481:	0	1	0	0	0	0	0	0
489:	0	0	0	0	0	0	0	0
497:	0	0	0	0	0	0	0	0
505:	0	0	0	0	0	0	1	0
513:	0	0	0	0	0	0	1	0
521:	0	0	0	0	0	1	0	0
529:	1	0	0	0	0	0	0	0
537:	0	1	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:	1	1	1	0	0	1	3	0
569:	1	0	0	0	1	0	1	2
577:	0	1	0	4	0	0	2	1
585:	0	1	2	3	4	2	3	4
593:	2	1	3	5	5	3	5	6
601:	2	6	3	6	4	4	9	8
609:	6	10	6	12	10	12	8	7
617:	10	8	9	14	10	10	3	11
625:	17	26	14	15	14	18	24	9
633:	7	5	2	0	1	0	0	0
641:	0	0	0	0	0	0	0	1
649:	0	0	0	0	0	0	0	0
657:	0	0	0	0	0	0	0	0
665:	0	0	0	0	0	0	0	0
673:	0	0	0	0	0	0	0	0
681:	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0
713:	0	0	0	0	0	0	0	0
721:	0	0	0	0	0	0	0	0
729:	0	0	0	0	0	0	0	0
737:	0	1	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	1	0	0	0	0	0	0
769:	0	0	0	0	0	0	0	0
777:	0	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0

801:	0	0	0	0	0	0	0	0

Sample Title: 17

Channel								
809:	0	0	0	0	0	0	0	0
817:	0	1	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	1	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	1	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	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:	1	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

Apex-Alpha™

DB 9/12/17

Sample Description: HTC-A08-BKGD02-3036-01
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001937
Batch Identification: 1707091A-UU
Sample Identification: 18
Sample Geometry: Shelf 2
Procedure Description: U iso

Detector Name: Alpha_059
Chamber Serial Number: 10006125A
Detector Serial Number: 59
Env. Background: System Bkgd 195600
Reagent Blank: <not performed>

Sample Size: 1.011E+000 +/- 0.000E+000 gram
Sample Date/Time: 5/15/2017 1:53:05 PM
Acquisition Date/Time: 9/7/2017 2:08:23 PM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
Tracer Quantity: 0.682 mL
Effective Efficiency: 0.2034 +/- 0.0109
Counting Efficiency: 0.1776 +/- 0.0030 on 11/18/2016 3:40:57 PM
Chem. Recovery Factor: 1.1451 +/- 0.0643

Peak Match Tolerance: 0.150 MeV

PEAK AREA REPORT

Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
U-232	T	5.289	428.49	9.48	0.51	0.00E+000	9.9
U-234		4.735	44.15	29.83	0.85	0.00E+000	3.7
U-235		4.408	3.66	107.87	0.34	0.00E+000	3.0
U-238		4.165	58.00	25.96	0.00	0.00E+000	4.0

T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.999	5302.50*	5.55E+000 +/- 5.82E-001	6.79E-002 +/- 7.13E-003
U-234	0.995	4761.50*	5.70E-001 +/- 1.80E-001	7.73E-002 +/- 8.11E-003
U-235	0.996	4385.50*	5.83E-002 +/- 6.32E-002	7.61E-002 +/- 7.99E-003
U-238	0.997	4184.40*	7.45E-001 +/- 2.09E-001	7.71E-002 +/- 8.09E-003

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9/8/17

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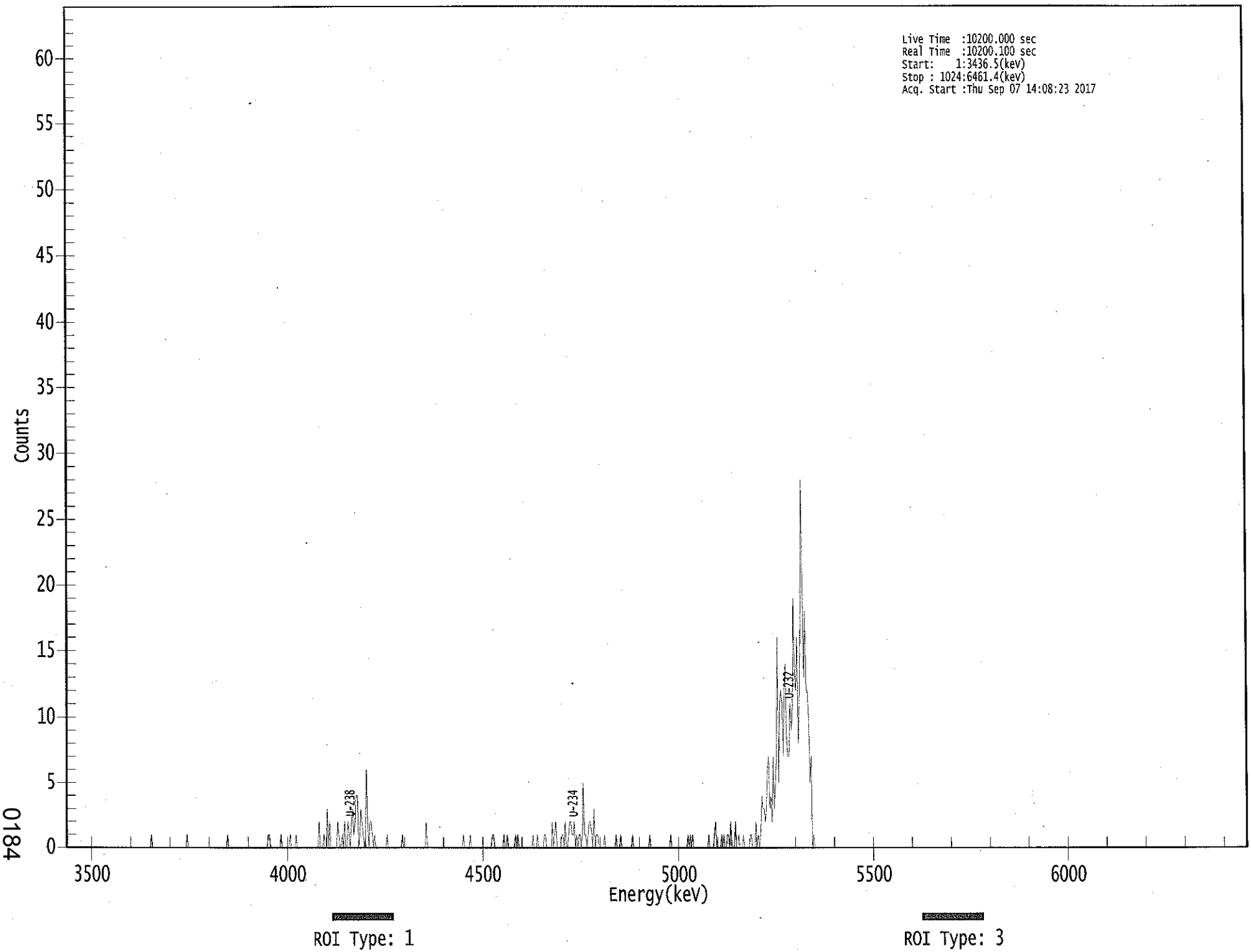


0184

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

Sample Title: 18

Elapsed Live time: 10200
Elapsed Real Time: 10200

Channel								
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0
65:	0	0	0	0	0	0	0	0
73:	0	1	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:	1	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	1	0	0	0	0
145:	0	0	0	0	0	0	0	0
153:	0	0	0	0	0	0	0	0
161:	0	0	0	0	0	0	0	0
169:	0	0	0	0	0	0	1	1
177:	0	0	0	0	0	0	0	0
185:	0	1	0	0	0	0	0	0
193:	0	1	0	0	0	0	1	0
201:	0	0	0	0	0	0	0	0
209:	0	0	0	0	0	0	0	0
217:	0	0	2	0	0	0	1	0
225:	0	3	0	2	0	0	0	0
233:	0	0	2	1	0	0	1	0
241:	2	0	0	2	1	0	2	3
249:	1	2	4	4	0	1	3	2
257:	1	0	1	6	2	0	2	2
265:	1	0	1	0	0	0	0	0
273:	0	0	0	0	0	1	0	0
281:	0	0	0	0	0	0	0	0
289:	0	0	1	0	0	0	0	0
297:	0	0	0	0	0	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	0	0	0	0
329:	0	0	0	0	0	0	0	0
337:	0	0	0	0	0	0	0	1
345:	0	0	0	0	0	1	0	0
353:	0	0	0	0	0	0	0	0
361:	0	0	0	0	0	0	0	0

369:	1	1	0	0	0	0	0	0

Sample Title: 18

Channel								
377:	0	0	1	0	0	1	0	0
385:	0	0	0	0	1	0	1	0
393:	0	0	0	0	0	0	0	0
401:	0	0	0	1	0	0	0	1
409:	0	0	0	0	0	1	1	0
417:	0	0	0	0	2	0	1	2
425:	0	0	0	0	1	1	0	2
433:	0	0	1	2	2	1	1	2
441:	0	1	0	1	1	0	1	5
449:	1	1	0	1	2	2	1	0
457:	3	0	1	1	0	0	0	0
465:	0	1	0	0	0	0	0	0
473:	0	0	0	1	0	0	0	1
481:	0	0	0	0	0	0	0	0
489:	0	1	0	0	0	0	0	0
497:	0	0	0	0	0	0	0	0
505:	1	0	0	0	0	0	0	0
513:	0	0	0	0	0	0	0	0
521:	0	0	1	0	0	0	0	0
529:	0	0	0	0	0	0	0	0
537:	0	1	0	1	0	1	0	0
545:	0	0	0	0	0	0	0	0
553:	0	0	0	1	0	0	0	0
561:	1	2	0	0	0	0	1	0
569:	1	0	0	1	1	0	2	0
577:	0	0	2	0	0	1	0	0
585:	0	1	0	0	0	0	0	1
593:	1	0	0	0	2	0	1	0
601:	1	4	3	3	2	3	6	7
609:	3	4	2	7	3	5	7	16
617:	5	11	12	11	7	12	14	8
625:	7	7	11	9	10	19	13	12
633:	16	8	11	17	28	20	13	18
641:	12	12	10	5	7	0	1	0
649:	0	0	0	0	0	0	0	0
657:	0	0	0	0	0	0	0	0
665:	0	0	0	0	0	0	0	0
673:	0	0	0	0	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: 18

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

KR 9/7/17

Apex-Alpha™

Sample Description: HTC-A08-BKGD02-3642-01
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001937
Batch Identification: 1707091A-UU
Sample Identification: 19
Sample Geometry: Shelf 2
Procedure Description: U iso

Detector Name: Alpha_060
Chamber Serial Number: 10006125B
Detector Serial Number: 60
Env. Background: System Bkgd 195601
Reagent Blank: <not performed>

Sample Size: 1.016E+000 +/- 0.000E+000 gram
Sample Date/Time: 5/15/2017 1:53:05 PM
Acquisition Date/Time: 9/7/2017 2:08:25 PM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
Tracer Quantity: 0.673 mL
Effective Efficiency: 0.1871 +/- 0.0104
Counting Efficiency: 0.1477 +/- 0.0026 on 11/18/2016 3:34:04 PM
Chem. Recovery Factor: 1.2671 +/- 0.0740

Peak Match Tolerance: 0.150 MeV

PEAK AREA REPORT

Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
U-232	T	5.291	389.15	9.95	0.85	0.00E+000	23.7
U-234		4.735	38.15	32.14	0.85	0.00E+000	4.4
U-235		4.403	1.83	152.56	0.17	0.00E+000	3.0
U-238		4.159	31.49	35.26	0.51	0.00E+000	3.5

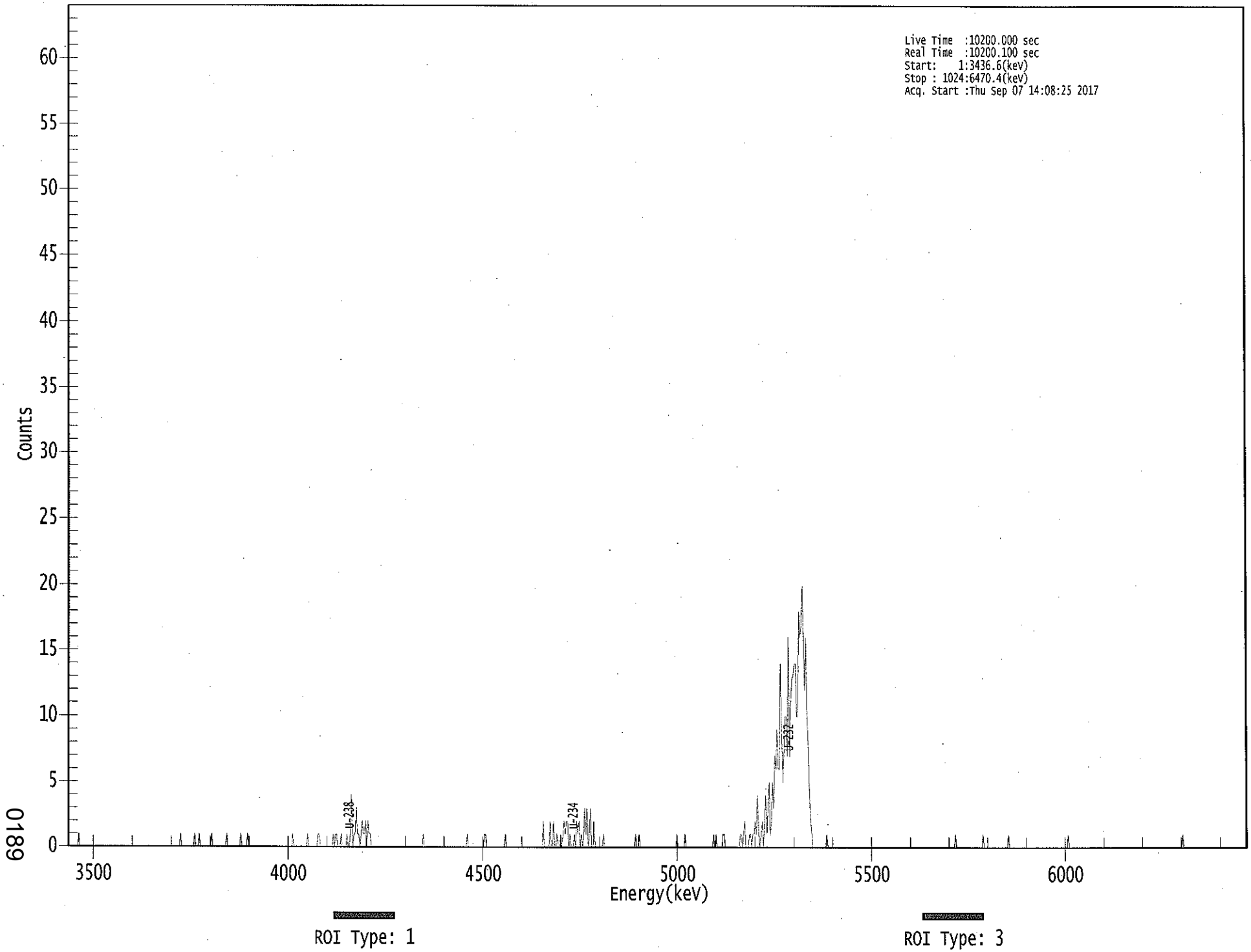
T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.999	5302.50*	5.45E+000 +/- 5.95E-001	8.38E-002 +/- 9.16E-003
U-234	0.995	4761.50*	5.33E-001 +/- 1.81E-001	8.36E-002 +/- 9.13E-003
U-235	0.998	4385.50*	3.15E-002 +/- 4.82E-002	7.19E-002 +/- 7.85E-003
U-238	0.995	4184.40*	4.38E-001 +/- 1.62E-001	7.29E-002 +/- 7.97E-003

AG 9/8/17

0000193770.CNF



0189

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

Sample Title: 19

Elapsed Live time: 10200
Elapsed Real Time: 10200

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

369:	0	0	0	0	0	0	0	0

Sample Title: 19

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

801:	0	0	0	0	0	0	0	0

Sample Title: 19

Channel								
809:	0	0	0	0	0	0	0	1
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	1	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	0	0
937:	0	0	0	0	0	0	0	0
945:	0	0	0	0	0	0	0	0
953:	0	0	0	0	0	0	0	0
961:	0	0	0	0	0	0	0	1
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

Apex-Alpha™

VB 9/7/17

Sample Description: HTC-A08-BKGD02-4248-01
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001937
Batch Identification: 1707091A-UU
Sample Identification: 20
Sample Geometry: Shelf 2
Procedure Description: U iso

Detector Name: Alpha_052
Chamber Serial Number: 10006123B
Detector Serial Number: 52
Env. Background: System Bkgd 195594
Reagent Blank: <not performed>

Sample Size: 1.027E+000 +/- 0.000E+000 gram
Sample Date/Time: 5/15/2017 1:53:05 PM
Acquisition Date/Time: 9/7/2017 2:31:21 PM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: U232_UU-10A
Tracer Quantity: 0.672 mL
Effective Efficiency: 0.1881 +/- 0.0105
Counting Efficiency: 0.1737 +/- 0.0030 on 11/18/2016 3:34:15 PM
Chem. Recovery Factor: 1.0828 +/- 0.0630

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	5.285	390.32	9.93	0.68	0.00E+000	14.4
U-234		4.730	46.98	28.96	1.02	0.00E+000	3.3
U-235		4.377	3.83	102.72	0.17	0.00E+000	3.0
U-238		4.151	41.49	30.65	0.51	0.00E+000	3.5

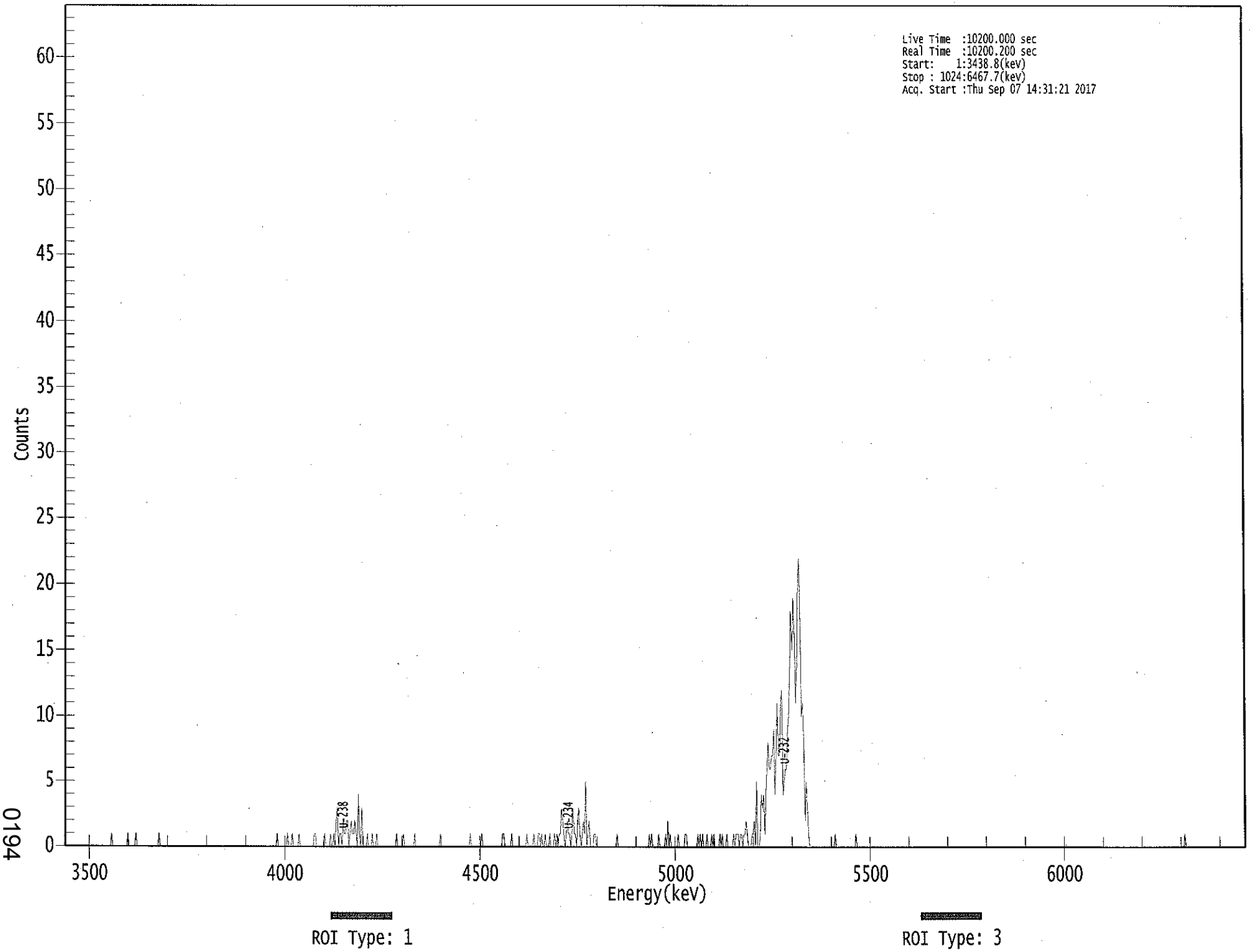
T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
U-232	0.998	5302.50*	5.38E+000 +/- 5.87E-001	7.78E-002 +/- 8.48E-003
U-234	0.993	4761.50*	6.46E-001 +/- 2.00E-001	8.66E-002 +/- 9.45E-003
U-235	1.000	4385.50*	6.49E-002 +/- 6.71E-002	7.08E-002 +/- 7.72E-003
U-238	0.992	4184.40*	5.68E-001 +/- 1.85E-001	7.18E-002 +/- 7.83E-003

AG 9/8/17

0000193772.CNF



0194

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

Sample Title: 20

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

369:	0	0	0	0	0	0	0	0

Sample Title: 20

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

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	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

9/7/2017 5:37:18 AM

Apex-Alpha™

QA SUMMARY REPORT

Review Of QA Results - Pulser Check

Date : 9/7/2017
Time : 5:37:18 AM

CHAMBER	DEVICE	PARAMETER	FLAG	DATE
Alpha_001	21f	ALL	Not Done	
Alpha_002	21f	ALL	Not Done	
Alpha_003	21f	ALL	Passed	9/7/2017 5:22:06 AM
Alpha_004	21f	ALL	Passed	9/7/2017 5:22:07 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	9/7/2017 5:22:07 AM
Alpha_011	21f	ALL	Passed	9/7/2017 5:22:08 AM
Alpha_012	21f	ALL	Passed	9/7/2017 5:22:09 AM
Alpha_013	21f	ALL	Not Done	
Alpha_014	21f	ALL	Passed	9/7/2017 5:22:10 AM
Alpha_015	21f	ALL	Not Done	
Alpha_016	21f	ALL	Not Done	
Alpha_033	Alpha Analyst100DC	ALL	Passed	9/7/2017 5:22:11 AM
Alpha_034	Alpha Analyst100DC	ALL	Passed	9/7/2017 5:22:13 AM
Alpha_035	Alpha Analyst100DC	ALL	Passed	9/7/2017 5:22:14 AM
Alpha_036	Alpha Analyst100DC	ALL	Passed	9/7/2017 5:22:16 AM
Alpha_037	Alpha Analyst100DC	ALL	Passed	9/7/2017 5:22:17 AM
Alpha_038	Alpha Analyst100DC	Peak Energy	Action	9/7/2017 5:22:19 AM
Alpha_039	Alpha Analyst100DC	ALL	Passed	9/7/2017 5:22:20 AM
Alpha_040	Alpha Analyst100DC	Peak FWHM	Action	9/7/2017 5:22:22 AM
Alpha_041	Alpha Analyst100DC	ALL	Not Done	
Alpha_042	Alpha Analyst100DC	ALL	Not Done	
Alpha_043	Alpha Analyst100DC	ALL	Passed	9/7/2017 5:22:23 AM
Alpha_044	Alpha Analyst100DC	ALL	Passed	9/7/2017 5:22:25 AM
Alpha_045	Alpha Analyst100DC	ALL	Passed	9/7/2017 5:22:27 AM
Alpha_046	Alpha Analyst100DC	ALL	Passed	9/7/2017 5:22:29 AM
Alpha_047	Alpha Analyst100DC	ALL	Passed	9/7/2017 5:22:30 AM
Alpha_048	Alpha Analyst100DC	ALL	Passed	9/7/2017 5:22:32 AM
Alpha_049	Alpha Analyst100DC	ALL	Passed	9/7/2017 5:22:34 AM
Alpha_050	Alpha Analyst100DC	ALL	Passed	9/7/2017 5:22:36 AM
Alpha_051	Alpha Analyst100DC	ALL	Not Done	
Alpha_052	Alpha Analyst100DC	ALL	Passed	9/7/2017 5:22:38 AM
Alpha_053	Alpha Analyst100DC	ALL	Passed	9/7/2017 5:22:40 AM
Alpha_054	Alpha Analyst100DC	ALL	Passed	9/7/2017 5:22:43 AM
Alpha_055	Alpha Analyst100DC	ALL	Not Done	
Alpha_056	Alpha Analyst100DC	ALL	Passed	9/7/2017 5:22:45 AM
Alpha_057	Alpha Analyst100DC	ALL	Passed	9/7/2017 5:22:49 AM
Alpha_058	Alpha Analyst100DC	ALL	Passed	9/7/2017 5:22:51 AM

9/7/2017 5:37:18 AM

CHAMBER	DEVICE	PARAMETER	FLAG	DATE
Alpha_059	Alpha Analyst100DC	ALL	Passed	9/7/2017 5:22:54 AM
Alpha_060	Alpha Analyst100DC	ALL	Passed	9/7/2017 5:22:57 AM

APPROVED BY: _____

APPROVAL DATE: 9/7/17

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

Nuclide Library Title: Uranium

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

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

* = key line

TOTALS: 4 Nuclides 4 Energy Lines

SECTION IX

ANALYTICAL DATA (ISOTOPIC THORIUM)

Eberline Analytical
Oak Ridge Laboratory
Analysis Sheet

17-07091
ThISO
Run 1

Work Order	17-07091
Analysis Code	ThISO
Run	1
Date Received	7/18/2017
Lab Deadline	8/10/2017
Client	Weston Solutions, Inc.
Project	94759
Report Level	4
Activity Units	pCi
Aliquot Units	g
Matrix	SO
Method	EPA 907.0 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		07/19/17 00:00	1.0000E+00
02	MBL	BLANK		07/19/17 00:00	1.0000E+00
03	DUP	HTC-A08-BKGD01-0006-01		05/15/17 16:41	1.0197E+00
04	DMSO	HTC-A08-BKGD01-0006-01	46	05/15/17 16:41	1.0185E+00
05	MS	HTC-A08-BKGD01-0006-01	33	05/15/17 16:41	1.0192E+00
06	MSD	HTC-A08-BKGD01-0006-01 MSD	33	05/15/17 16:41	1.0189E+00
07	TRG	HTC-A08-BKGD01-1218-01	41	05/15/17 16:35	1.0178E+00
08	TRG	HTC-A08-BKGD01-1824-01	30	05/15/17 16:32	1.0192E+00
09	TRG	HTC-A08-BKGD01-2430-01	34	05/15/17 16:29	1.0106E+00
10	TRG	HTC-A08-BKGD01-3036-01	44	05/15/17 16:26	1.0101E+00
11	TRG	HTC-A08-BKGD01-3642-01	43	05/15/17 16:23	1.0051E+00
12	TRG	HTC-A08-BKGD01-4248-01	30	05/15/17 16:20	1.0279E+00
13	TRG	HTC-A08-BKGD02-0006-01	47	05/15/17 15:56	1.0336E+00
14	TRG	HTC-A08-BKGD02-0612-01	38	05/15/17 15:53	1.0299E+00
15	TRG	HTC-A08-BKGD02-1218-01	47	05/15/17 15:50	1.0093E+00
16	TRG	HTC-A08-BKGD02-1824-01	38	05/15/17 15:47	1.0327E+00
17	TRG	HTC-A08-BKGD02-2430-01	40	05/15/17 15:44	1.0412E+00
18	TRG	HTC-A08-BKGD02-3036-01	32	05/15/17 15:41	1.0152E+00
19	TRG	HTC-A08-BKGD02-3642-01	33	05/15/17 15:38	1.0292E+00
20	TRG	HTC-A08-BKGD02-4248-01	43	05/15/17 15:35	1.0081E+00

0202

* 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.

17-07091
ThISO
Run 1

Internal Fraction	Sample Desc	Tracer Aliquot (g)	Tracer Total ACT (dpm)	Radiometric Tracer (pCi)	Radiometric % Rec	Grav Carrier Added (ml)	Grav Filter Tare (g)	Grav Filter Final (g)	Grav Filter Net (g)	Grav % Rec	Mean % Rec	SAF 1*	SAF 2*
01	LCS	0.4515	10.1		0.00								
02	MBL	0.2252	5.1		0.00								
03	DUP	0.2140	4.8		0.00								
04	DMSO	0.2259	5.1		0.00								
05	MS	0.2250	5.1		0.00								
06	MSD	0.2278	5.1		0.00								
07	TRG	0.2258	5.1		0.00								
08	TRG	0.2251	5.1		0.00								
09	TRG	0.2246	5.0		0.00								
10	TRG	0.2244	5.0		0.00								
11	TRG	0.2247	5.0		0.00								
12	TRG	0.2243	5.0		0.00								
13	TRG	0.2249	5.1		0.00								
14	TRG	0.2246	5.0		0.00								
15	TRG	0.2252	5.1		0.00								
16	TRG	0.2246	5.0		0.00								
17	TRG	0.2249	5.1		0.00								
18	TRG	0.2289	5.1		0.00								
19	TRG	0.2254	5.1		0.00								
20	TRG	0.2247	5.0		0.00								

0203

* 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.

17-07091
ThISO
Run 1

Internal Fraction	Sample Desc	Rough Prep Date	Rough Prep By	Prep Date	Prep By	Sep t0 Date/Time	Sep t0 By	Sep t1 Date/Time	Sep t1 By
01	LCS			08/14/17 14:27	JPACHELLA				
02	MBL			08/14/17 14:27	JPACHELLA				
03	DUP			08/14/17 14:27	JPACHELLA				
04	DMSO	08/03/17 06:56	KSALLINGS	08/14/17 14:27	JPACHELLA				
05	MS	08/03/17 06:56	KSALLINGS	08/14/17 14:27	JPACHELLA				
06	MSD	08/03/17 06:56	KSALLINGS	08/14/17 14:27	JPACHELLA				
07	TRG	08/03/17 06:56	KSALLINGS	08/14/17 14:27	JPACHELLA				
08	TRG	08/03/17 06:56	KSALLINGS	08/14/17 14:27	JPACHELLA				
09	TRG	08/03/17 06:56	KSALLINGS	08/14/17 14:27	JPACHELLA				
10	TRG	08/03/17 06:56	KSALLINGS	08/14/17 14:27	JPACHELLA				
11	TRG	08/03/17 06:56	KSALLINGS	08/14/17 14:27	JPACHELLA				
12	TRG	08/03/17 06:56	KSALLINGS	08/14/17 14:27	JPACHELLA				
13	TRG	08/03/17 06:56	KSALLINGS	08/14/17 14:27	JPACHELLA				
14	TRG	08/03/17 06:56	KSALLINGS	08/14/17 14:27	JPACHELLA				
15	TRG	08/03/17 06:56	KSALLINGS	08/14/17 14:27	JPACHELLA				
16	TRG	08/03/17 06:56	KSALLINGS	08/14/17 14:27	JPACHELLA				
17	TRG	08/03/17 06:56	KSALLINGS	08/14/17 14:27	JPACHELLA				
18	TRG	08/03/17 06:56	KSALLINGS	08/14/17 14:27	JPACHELLA				
19	TRG	08/03/17 06:56	KSALLINGS	08/14/17 14:27	JPACHELLA				
20	TRG	08/03/17 06:56	KSALLINGS	08/14/17 14:27	JPACHELLA				

0204

* 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: 17-07091-ThISO-1

Client: Weston Solutions, Inc.
Eberline Analytical Work Order: 17-07091
Analysis Code: ThISO
Run: 1
0205

Lab Fraction	Nuclide	Sample Desc	Client Identification	Activity Units	Results	Error Estimate	MDA	LCS Known	LCS %R	LCS Flag	RPD Flag	MDA Flag	Blank Flag
01	TH-228	LCS	LCS	pCi/g	5.98E+00	1.07E+00	1.01E-01	5.02E+00	118.94	OK		OK	
02	TH-228	MBL	BLANK	pCi/g	3.80E-02	8.31E-02	1.58E-01					OK	OK
03	TH-228	DUP	HTC-A08-BKGD01-0006-01	pCi/g	5.58E-01	2.06E-01	9.99E-02					OK	
04	TH-228	DMSO	HTC-A08-BKGD01-0006-01	pCi/g	5.03E-01	2.10E-01	1.13E-01					OK	
05	TH-228	MS	HTC-A08-BKGD01-0006-01	pCi/g	9.13E+00	1.76E+00	1.12E-01					OK	
06	TH-228	MSD	HTC-A08-BKGD01-0006-01 MSD	pCi/g	8.05E+00	1.51E+00	9.35E-02					OK	
07	TH-228	TRG	HTC-A08-BKGD01-1218-01	pCi/g	1.36E+00	3.62E-01	1.04E-01					OK	
08	TH-228	TRG	HTC-A08-BKGD01-1824-01	pCi/g	1.57E+00	4.38E-01	1.21E-01					OK	
09	TH-228	TRG	HTC-A08-BKGD01-2430-01	pCi/g	1.37E+00	3.50E-01	8.38E-02					OK	
10	TH-228	TRG	HTC-A08-BKGD01-3036-01	pCi/g	1.41E+00	3.74E-01	1.34E-01					OK	
11	TH-228	TRG	HTC-A08-BKGD01-3642-01	pCi/g	1.30E+00	3.62E-01	1.02E-01					OK	
12	TH-228	TRG	HTC-A08-BKGD01-4248-01	pCi/g	1.53E+00	3.98E-01	1.26E-01					OK	
13	TH-228	TRG	HTC-A08-BKGD02-0006-01	pCi/g	1.02E+00	2.75E-01	6.73E-02					OK	
14	TH-228	TRG	HTC-A08-BKGD02-0612-01	pCi/g	1.18E+00	3.42E-01	1.13E-01					OK	
15	TH-228	TRG	HTC-A08-BKGD02-1218-01	pCi/g	1.38E+00	3.80E-01	1.17E-01					OK	
16	TH-228	TRG	HTC-A08-BKGD02-1824-01	pCi/g	1.25E+00	3.53E-01	1.01E-01					OK	
17	TH-228	TRG	HTC-A08-BKGD02-2430-01	pCi/g	1.40E+00	3.87E-01	1.43E-01					OK	
18	TH-228	TRG	HTC-A08-BKGD02-3036-01	pCi/g	1.50E+00	5.12E-01	1.80E-01					OK	
19	TH-228	TRG	HTC-A08-BKGD02-3642-01	pCi/g	7.65E-01	2.30E-01	9.15E-02					OK	
20	TH-228	TRG	HTC-A08-BKGD02-4248-01	pCi/g	7.92E-01	2.74E-01	1.22E-01					OK	

Preliminary Data Report & Analytical Calculations
Work Order: 17-07091-ThISO-1

Client: Weston Solutions, Inc.
Eberline Analytical Work Order: 17-07091
Analysis Code: ThISO
Run: 1
0206

Lab Fraction	Nuclide	Sample Desc	Sample Date	Sample Aliquot	Radiometric % Rec	Grav % Rec	Mean % Rec	SAF	Sep t0 Date/Time	Sep t1 Date/Time
01	TH-228	LCS	07/19/17 00:00	1.00E+00	92.57	0.00	0.00			
02	TH-228	MBL	07/19/17 00:00	1.00E+00	102.69	0.00	0.00			
03	TH-228	DUP	05/15/17 16:41	1.02E+00	110.01	0.00	0.00			
04	TH-228	DMSO	05/15/17 16:41	1.02E+00	95.97	0.00	0.00			
05	TH-228	MS	05/15/17 16:41	1.02E+00	98.44	0.00	0.00			
06	TH-228	MSD	05/15/17 16:41	1.02E+00	117.66	0.00	0.00			
07	TH-228	TRG	05/15/17 16:35	1.02E+00	104.94	0.00	0.00			
08	TH-228	TRG	05/15/17 16:32	1.02E+00	99.57	0.00	0.00			
09	TH-228	TRG	05/15/17 16:29	1.01E+00	135.37	0.00	0.00			
10	TH-228	TRG	05/15/17 16:26	1.01E+00	103.46	0.00	0.00			
11	TH-228	TRG	05/15/17 16:23	1.01E+00	99.74	0.00	0.00			
12	TH-228	TRG	05/15/17 16:20	1.03E+00	99.96	0.00	0.00			
13	TH-228	TRG	05/15/17 15:56	1.03E+00	124.30	0.00	0.00			
14	TH-228	TRG	05/15/17 15:53	1.03E+00	103.29	0.00	0.00			
15	TH-228	TRG	05/15/17 15:50	1.01E+00	103.50	0.00	0.00			
16	TH-228	TRG	05/15/17 15:47	1.03E+00	119.48	0.00	0.00			
17	TH-228	TRG	05/15/17 15:44	1.04E+00	121.52	0.00	0.00			
18	TH-228	TRG	05/15/17 15:41	1.02E+00	61.35	0.00	0.00			
19	TH-228	TRG	05/15/17 15:38	1.03E+00	142.81	0.00	0.00			
20	TH-228	TRG	05/15/17 15:35	1.01E+00	87.77	0.00	0.00			

Preliminary Data Report & Analytical Calculations
Work Order: 17-07091-ThISO-1

Run: 1
Analysis Code: ThISO
Eberline Analytical Work Order: 17-07091
Client: Weston Solutions, Inc.
0207

Lab Fraction	Nuclide	Sample Desc	Counting Date/Time	Halflife (days)	Detect	Carrier	Count Time	Counts	Bkg CPM	Eff
01	TH-228	LCS	09/01/17 10:23		A_Spec	Alpha_049	170	3.10 E+02	3.00 E-03	14.9
02	TH-228	MBL	09/01/17 10:23		A_Spec	Alpha_050	170	2.11 E+00	1.70 E-02	14.3
03	TH-228	DUP	09/01/17 10:24		A_Spec	Alpha_052	170	3.68 E+01	7.00 E-03	17.4
04	TH-228	DMSO	09/01/17 11:38		A_Spec	Alpha_033	170	2.80 E+01	6.00 E-03	16.8
05	TH-228	MS	09/01/17 11:38		A_Spec	Alpha_034	170	5.36 E+02	7.00 E-03	17.3
06	TH-228	MSD	09/01/17 11:38		A_Spec	Alpha_035	170	5.16 E+02	0.00 E+00	15.8
07	TH-228	TRG	09/01/17 11:38		A_Spec	Alpha_036	170	8.96 E+01	8.00 E-03	18.2
08	TH-228	TRG	09/01/17 11:38		A_Spec	Alpha_037	170	8.58 E+01	7.00 E-03	15.9
09	TH-228	TRG	09/01/17 11:38		A_Spec	Alpha_038	170	9.82 E+01	5.00 E-03	15.4
10	TH-228	TRG	09/01/17 11:38		A_Spec	Alpha_039	170	9.21 E+01	1.70 E-02	18.5
11	TH-228	TRG	09/01/17 11:38		A_Spec	Alpha_040	170	8.00 E+01	6.00 E-03	18.1
12	TH-228	TRG	09/01/17 11:38		A_Spec	Alpha_043	170	9.96 E+01	1.40 E-02	18.7
13	TH-228	TRG	09/01/17 11:38		A_Spec	Alpha_044	170	7.95 E+01	3.00 E-03	17.9
14	TH-228	TRG	09/01/17 11:38		A_Spec	Alpha_045	170	7.16 E+01	8.00 E-03	16.9
15	TH-228	TRG	09/01/17 11:38		A_Spec	Alpha_046	170	8.35 E+01	9.00 E-03	17.1
16	TH-228	TRG	09/01/17 13:16		A_Spec	Alpha_049	170	7.80 E+01	6.00 E-03	14.9
17	TH-228	TRG	09/01/17 13:17		A_Spec	Alpha_050	170	8.61 E+01	1.70 E-02	14.3
18	TH-228	TRG	09/01/17 13:17		A_Spec	Alpha_052	170	5.48 E+01	7.00 E-03	17.4
19	TH-228	TRG	09/01/17 14:09		A_Spec	Alpha_003	170.02	5.95 E+01	9.00 E-03	15.6
20	TH-228	TRG	09/01/17 14:09		A_Spec	Alpha_004	170.02	4.46 E+01	8.00 E-03	18.8

Preliminary Data Report & Analytical Calculations
Work Order: 17-07091-ThISO-1

Client: Weston Solutions, Inc.
Eberline Analytical Work Order: 17-07091
Analysis Code: ThISO
Run: 1
0208

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	6.47E+00	1.15E+00	1.27E-01	5.43E+00	119.20	OK		OK	
02	TH-230	MBL	BLANK	pCi/g	9.53E-02	1.04E-01	1.55E-01					OK	OK
03	TH-230	DUP	HTC-A08-BKGD01-0006-01	pCi/g	4.81E-01	1.80E-01	7.68E-02					OK	
04	TH-230	DMSO	HTC-A08-BKGD01-0006-01	pCi/g	3.28E-01	1.57E-01	9.11E-02					OK	
05	TH-230	MS	HTC-A08-BKGD01-0006-01	pCi/g	7.97E+00	1.54E+00	8.03E-02					OK	
06	TH-230	MSD	HTC-A08-BKGD01-0006-01 MSD	pCi/g	6.67E+00	1.26E+00	5.85E-02					OK	
07	TH-230	TRG	HTC-A08-BKGD01-1218-01	pCi/g	1.01E+00	2.86E-01	8.98E-02					OK	
08	TH-230	TRG	HTC-A08-BKGD01-1824-01	pCi/g	1.23E+00	3.56E-01	6.88E-02					OK	
09	TH-230	TRG	HTC-A08-BKGD01-2430-01	pCi/g	1.58E+00	3.74E-01	6.01E-02					OK	
10	TH-230	TRG	HTC-A08-BKGD01-3036-01	pCi/g	1.12E+00	3.08E-01	9.04E-02					OK	
11	TH-230	TRG	HTC-A08-BKGD01-3642-01	pCi/g	1.16E+00	3.23E-01	7.66E-02					OK	
12	TH-230	TRG	HTC-A08-BKGD01-4248-01	pCi/g	9.02E-01	2.68E-01	9.80E-02					OK	
13	TH-230	TRG	HTC-A08-BKGD02-0006-01	pCi/g	9.12E-01	2.46E-01	6.90E-02					OK	
14	TH-230	TRG	HTC-A08-BKGD02-0612-01	pCi/g	1.11E+00	3.17E-01	8.34E-02					OK	
15	TH-230	TRG	HTC-A08-BKGD02-1218-01	pCi/g	1.36E+00	3.64E-01	1.02E-01					OK	
16	TH-230	TRG	HTC-A08-BKGD02-1824-01	pCi/g	1.18E+00	3.27E-01	9.91E-02					OK	
17	TH-230	TRG	HTC-A08-BKGD02-2430-01	pCi/g	1.10E+00	3.17E-01	1.26E-01					OK	
18	TH-230	TRG	HTC-A08-BKGD02-3036-01	pCi/g	8.91E-01	3.49E-01	1.38E-01					OK	
19	TH-230	TRG	HTC-A08-BKGD02-3642-01	pCi/g	6.32E-01	1.96E-01	7.93E-02					OK	
20	TH-230	TRG	HTC-A08-BKGD02-4248-01	pCi/g	7.59E-01	2.57E-01	1.09E-01					OK	

Preliminary Data Report & Analytical Calculations
Work Order: 17-07091-ThISO-1

Client: Weston Solutions, Inc.
Eberline Analytical Work Order: 17-07091
Analysis Code: ThISO
Run: 1
0209

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	07/19/17 00:00	1.00E+00	92.57	0.00	0.00			
02	TH-230	MBL	07/19/17 00:00	1.00E+00	102.69	0.00	0.00			
03	TH-230	DUP	05/15/17 16:41	1.02E+00	110.01	0.00	0.00			
04	TH-230	DMSO	05/15/17 16:41	1.02E+00	95.97	0.00	0.00			
05	TH-230	MS	05/15/17 16:41	1.02E+00	98.44	0.00	0.00			
06	TH-230	MSD	05/15/17 16:41	1.02E+00	117.66	0.00	0.00			
07	TH-230	TRG	05/15/17 16:35	1.02E+00	104.94	0.00	0.00			
08	TH-230	TRG	05/15/17 16:32	1.02E+00	99.57	0.00	0.00			
09	TH-230	TRG	05/15/17 16:29	1.01E+00	135.37	0.00	0.00			
10	TH-230	TRG	05/15/17 16:26	1.01E+00	103.46	0.00	0.00			
11	TH-230	TRG	05/15/17 16:23	1.01E+00	99.74	0.00	0.00			
12	TH-230	TRG	05/15/17 16:20	1.03E+00	99.96	0.00	0.00			
13	TH-230	TRG	05/15/17 15:56	1.03E+00	124.30	0.00	0.00			
14	TH-230	TRG	05/15/17 15:53	1.03E+00	103.29	0.00	0.00			
15	TH-230	TRG	05/15/17 15:50	1.01E+00	103.50	0.00	0.00			
16	TH-230	TRG	05/15/17 15:47	1.03E+00	119.48	0.00	0.00			
17	TH-230	TRG	05/15/17 15:44	1.04E+00	121.52	0.00	0.00			
18	TH-230	TRG	05/15/17 15:41	1.02E+00	61.35	0.00	0.00			
19	TH-230	TRG	05/15/17 15:38	1.03E+00	142.81	0.00	0.00			
20	TH-230	TRG	05/15/17 15:35	1.01E+00	87.77	0.00	0.00			

Preliminary Data Report & Analytical Calculations
Work Order: 17-07091-ThISO-1

Client: Weston Solutions, Inc. 0210
Eberline Analytical Work Order: 17-07091
Analysis Code: ThISO
Run: 1

Lab Fraction	Nuclide	Sample Desc	Counting Date/Time	Halflife (days)	Detect	Carrier	Count Time	Counts	Bkg CPM	Eff
01	TH-230	LCS	09/01/17 10:23		A_Spec	Alpha_049	170	3.36 E+02	7.00 E-03	14.9
02	TH-230	MBL	09/01/17 10:23		A_Spec	Alpha_050	170	5.28 E+00	1.60 E-02	14.3
03	TH-230	DUP	09/01/17 10:24		A_Spec	Alpha_052	170	3.53 E+01	4.00 E-03	17.4
04	TH-230	DMSO	09/01/17 11:38		A_Spec	Alpha_033	170	2.03 E+01	4.00 E-03	16.8
05	TH-230	MS	09/01/17 11:38		A_Spec	Alpha_034	170	5.20 E+02	3.00 E-03	17.3
06	TH-230	MSD	09/01/17 11:38		A_Spec	Alpha_035	170	4.76 E+02	1.00 E-03	15.8
07	TH-230	TRG	09/01/17 11:38		A_Spec	Alpha_036	170	7.38 E+01	7.00 E-03	18.2
08	TH-230	TRG	09/01/17 11:38		A_Spec	Alpha_037	170	7.48 E+01	1.00 E-03	15.9
09	TH-230	TRG	09/01/17 11:38		A_Spec	Alpha_038	170	1.26 E+02	2.00 E-03	15.4
10	TH-230	TRG	09/01/17 11:38		A_Spec	Alpha_039	170	8.18 E+01	7.00 E-03	18.5
11	TH-230	TRG	09/01/17 11:38		A_Spec	Alpha_040	170	7.95 E+01	3.00 E-03	18.1
12	TH-230	TRG	09/01/17 11:38		A_Spec	Alpha_043	170	6.55 E+01	9.00 E-03	18.7
13	TH-230	TRG	09/01/17 11:38		A_Spec	Alpha_044	170	7.92 E+01	5.00 E-03	17.9
14	TH-230	TRG	09/01/17 11:38		A_Spec	Alpha_045	170	7.53 E+01	4.00 E-03	16.9
15	TH-230	TRG	09/01/17 11:38		A_Spec	Alpha_046	170	9.16 E+01	8.00 E-03	17.1
16	TH-230	TRG	09/01/17 13:16		A_Spec	Alpha_049	170	8.16 E+01	8.00 E-03	14.9
17	TH-230	TRG	09/01/17 13:17		A_Spec	Alpha_050	170	7.53 E+01	1.60 E-02	14.3
18	TH-230	TRG	09/01/17 13:17		A_Spec	Alpha_052	170	3.63 E+01	4.00 E-03	17.4
19	TH-230	TRG	09/01/17 14:09		A_Spec	Alpha_003	170.02	5.46 E+01	8.00 E-03	15.6
20	TH-230	TRG	09/01/17 14:09		A_Spec	Alpha_004	170.02	4.76 E+01	8.00 E-03	18.8

Preliminary Data Report & Analytical Calculations
Work Order: 17-07091-ThISO-1

Client: Weston Solutions, Inc.
Eberline Analytical Work Order: 17-07091
Analysis Code: ThISO
Run: 1
0211

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	5.88E+00	1.06E+00	1.15E-01	5.02E+00	117.13	OK		OK	
02	TH-232	MBL	BLANK	pCi/g	4.76E-02	7.32E-02	1.23E-01					OK	OK
03	TH-232	DUP	HTC-A08-BKGD01-0006-01	pCi/g	5.53E-01	1.95E-01	6.50E-02					OK	
04	TH-232	DMSO	HTC-A08-BKGD01-0006-01	pCi/g	3.20E-01	1.52E-01	6.73E-02					OK	
05	TH-232	MS	HTC-A08-BKGD01-0006-01	pCi/g	7.85E+00	1.52E+00	9.63E-02					OK	
06	TH-232	MSD	HTC-A08-BKGD01-0006-01 MSD	pCi/g	6.49E+00	1.23E+00	6.69E-02					OK	
07	TH-232	TRG	HTC-A08-BKGD01-1218-01	pCi/g	1.24E+00	3.28E-01	7.14E-02					OK	
08	TH-232	TRG	HTC-A08-BKGD01-1824-01	pCi/g	1.49E+00	4.07E-01	7.86E-02					OK	
09	TH-232	TRG	HTC-A08-BKGD01-2430-01	pCi/g	1.14E+00	2.98E-01	7.51E-02					OK	
10	TH-232	TRG	HTC-A08-BKGD01-3036-01	pCi/g	1.23E+00	3.28E-01	8.20E-02					OK	
11	TH-232	TRG	HTC-A08-BKGD01-3642-01	pCi/g	1.23E+00	3.36E-01	7.65E-02					OK	
12	TH-232	TRG	HTC-A08-BKGD01-4248-01	pCi/g	1.00E+00	2.87E-01	8.67E-02					OK	
13	TH-232	TRG	HTC-A08-BKGD02-0006-01	pCi/g	8.38E-01	2.32E-01	4.80E-02					OK	
14	TH-232	TRG	HTC-A08-BKGD02-0612-01	pCi/g	1.09E+00	3.16E-01	1.29E-01					OK	
15	TH-232	TRG	HTC-A08-BKGD02-1218-01	pCi/g	1.47E+00	3.85E-01	1.12E-01					OK	
16	TH-232	TRG	HTC-A08-BKGD02-1824-01	pCi/g	1.38E+00	3.64E-01	6.02E-02					OK	
17	TH-232	TRG	HTC-A08-BKGD02-2430-01	pCi/g	1.13E+00	3.21E-01	1.00E-01					OK	
18	TH-232	TRG	HTC-A08-BKGD02-3036-01	pCi/g	9.96E-01	3.74E-01	1.17E-01					OK	
19	TH-232	TRG	HTC-A08-BKGD02-3642-01	pCi/g	5.36E-01	1.76E-01	6.05E-02					OK	
20	TH-232	TRG	HTC-A08-BKGD02-4248-01	pCi/g	7.39E-01	2.50E-01	8.34E-02					OK	

Preliminary Data Report & Analytical Calculations
Work Order: 17-07091-ThISO-1

Client: Weston Solutions, Inc.
Eberline Analytical Work Order: 17-07091
Analysis Code: ThISO
Run: 1
0212

Lab Fraction	Nuclide	Sample Desc	Sample Date	Sample Aliquot	Radiometric % Rec	Grav % Rec	Mean % Rec	SAF	Sep t0 Date/Time	Sep t1 Date/Time
01	TH-232	LCS	07/19/17 00:00	1.00E+00	92.57	0.00	0.00			
02	TH-232	MBL	07/19/17 00:00	1.00E+00	102.69	0.00	0.00			
03	TH-232	DUP	05/15/17 16:41	1.02E+00	110.01	0.00	0.00			
04	TH-232	DMSO	05/15/17 16:41	1.02E+00	95.97	0.00	0.00			
05	TH-232	MS	05/15/17 16:41	1.02E+00	98.44	0.00	0.00			
06	TH-232	MSD	05/15/17 16:41	1.02E+00	117.66	0.00	0.00			
07	TH-232	TRG	05/15/17 16:35	1.02E+00	104.94	0.00	0.00			
08	TH-232	TRG	05/15/17 16:32	1.02E+00	99.57	0.00	0.00			
09	TH-232	TRG	05/15/17 16:29	1.01E+00	135.37	0.00	0.00			
10	TH-232	TRG	05/15/17 16:26	1.01E+00	103.46	0.00	0.00			
11	TH-232	TRG	05/15/17 16:23	1.01E+00	99.74	0.00	0.00			
12	TH-232	TRG	05/15/17 16:20	1.03E+00	99.96	0.00	0.00			
13	TH-232	TRG	05/15/17 15:56	1.03E+00	124.30	0.00	0.00			
14	TH-232	TRG	05/15/17 15:53	1.03E+00	103.29	0.00	0.00			
15	TH-232	TRG	05/15/17 15:50	1.01E+00	103.50	0.00	0.00			
16	TH-232	TRG	05/15/17 15:47	1.03E+00	119.48	0.00	0.00			
17	TH-232	TRG	05/15/17 15:44	1.04E+00	121.52	0.00	0.00			
18	TH-232	TRG	05/15/17 15:41	1.02E+00	61.35	0.00	0.00			
19	TH-232	TRG	05/15/17 15:38	1.03E+00	142.81	0.00	0.00			
20	TH-232	TRG	05/15/17 15:35	1.01E+00	87.77	0.00	0.00			

Preliminary Data Report & Analytical Calculations
Work Order: 17-07091-ThISO-1

Run: 1
Analysis Code: ThISO
Eberline Analytical Work Order: 17-07091
Client: Weston Solutions, Inc.
0213

Lab Fraction	Nuclide	Sample Desc	Counting Date/Time	Halflife (days)	Detect	Carrier	Count Time	Counts	Bkg CPM	Eff
01	TH-232	LCS	09/01/17 10:23		A_Spec	Alpha_049	170	3.06 E+02	0.00 E+00	14.9
02	TH-232	MBL	09/01/17 10:23		A_Spec	Alpha_050	170	2.64 E+00	8.00 E-03	14.3
03	TH-232	DUP	09/01/17 10:24		A_Spec	Alpha_052	170	4.07 E+01	2.00 E-03	17.4
04	TH-232	DMSO	09/01/17 11:38		A_Spec	Alpha_033	170	1.98 E+01	1.00 E-03	16.8
05	TH-232	MS	09/01/17 11:38		A_Spec	Alpha_034	170	5.14 E+02	6.00 E-03	17.3
06	TH-232	MSD	09/01/17 11:38		A_Spec	Alpha_035	170	4.64 E+02	2.00 E-03	15.8
07	TH-232	TRG	09/01/17 11:38		A_Spec	Alpha_036	170	9.15 E+01	3.00 E-03	18.2
08	TH-232	TRG	09/01/17 11:38		A_Spec	Alpha_037	170	9.07 E+01	2.00 E-03	15.9
09	TH-232	TRG	09/01/17 11:38		A_Spec	Alpha_038	170	9.12 E+01	5.00 E-03	15.4
10	TH-232	TRG	09/01/17 11:38		A_Spec	Alpha_039	170	9.02 E+01	5.00 E-03	18.5
11	TH-232	TRG	09/01/17 11:38		A_Spec	Alpha_040	170	8.45 E+01	3.00 E-03	18.1
12	TH-232	TRG	09/01/17 11:38		A_Spec	Alpha_043	170	7.30 E+01	6.00 E-03	18.7
13	TH-232	TRG	09/01/17 11:38		A_Spec	Alpha_044	170	7.28 E+01	1.00 E-03	17.9
14	TH-232	TRG	09/01/17 11:38		A_Spec	Alpha_045	170	7.41 E+01	1.70 E-02	16.9
15	TH-232	TRG	09/01/17 11:38		A_Spec	Alpha_046	170	9.91 E+01	1.10 E-02	17.1
16	TH-232	TRG	09/01/17 13:16		A_Spec	Alpha_049	170	9.58 E+01	1.00 E-03	14.9
17	TH-232	TRG	09/01/17 13:17		A_Spec	Alpha_050	170	7.76 E+01	8.00 E-03	14.3
18	TH-232	TRG	09/01/17 13:17		A_Spec	Alpha_052	170	4.07 E+01	2.00 E-03	17.4
19	TH-232	TRG	09/01/17 14:09		A_Spec	Alpha_003	170.02	4.65 E+01	3.00 E-03	15.6
20	TH-232	TRG	09/01/17 14:09		A_Spec	Alpha_004	170.02	4.65 E+01	3.00 E-03	18.8

Count Room Report
Client: Weston Solutions, Inc.

17-07091-ThISO-1 (pCi/g) in SO
Tracer ID: Th-18a

Internal Fraction	Sample Desc	Client ID	Sample Date	Sample Aliquot	Tracer Aliquot (g)	Tracer ACT (dpm)	Radiometric Tracer (pCi)	Radiometric % Rec	SAF 1*	SAF 2*
01	LCS	LCS	07/19/17 00:00	1.0000	0.4515	10.1407		0.00		
02	MBL	BLANK	07/19/17 00:00	1.0000	0.2252	5.0580		0.00		
03	DUP	HTC-A08-BKGD01-0006-01	05/15/17 16:41	1.0197	0.2140	4.8064		0.00		
04	DMSO	HTC-A08-BKGD01-0006-01	05/15/17 16:41	1.0185	0.2259	5.0737		0.00		
05	MS	HTC-A08-BKGD01-0006-01	05/15/17 16:41	1.0192	0.2250	5.0535		0.00		
06	MSD	TC-A08-BKGD01-0006-01 MS	05/15/17 16:41	1.0189	0.2278	5.1164		0.00		
07	TRG	HTC-A08-BKGD01-1218-01	05/15/17 16:35	1.0178	0.2258	5.0715		0.00		
08	TRG	HTC-A08-BKGD01-1824-01	05/15/17 16:32	1.0192	0.2251	5.0557		0.00		
09	TRG	HTC-A08-BKGD01-2430-01	05/15/17 16:29	1.0106	0.2246	5.0445		0.00		
10	TRG	HTC-A08-BKGD01-3036-01	05/15/17 16:26	1.0101	0.2244	5.0400		0.00		
11	TRG	HTC-A08-BKGD01-3642-01	05/15/17 16:23	1.0051	0.2247	5.0468		0.00		
12	TRG	HTC-A08-BKGD01-4248-01	05/15/17 16:20	1.0279	0.2243	5.0378		0.00		
13	TRG	HTC-A08-BKGD02-0006-01	05/15/17 15:56	1.0336	0.2249	5.0513		0.00		
14	TRG	HTC-A08-BKGD02-0612-01	05/15/17 15:53	1.0299	0.2246	5.0445		0.00		
15	TRG	HTC-A08-BKGD02-1218-01	05/15/17 15:50	1.0093	0.2252	5.0580		0.00		
16	TRG	HTC-A08-BKGD02-1824-01	05/15/17 15:47	1.0327	0.2246	5.0445		0.00		
17	TRG	HTC-A08-BKGD02-2430-01	05/15/17 15:44	1.0412	0.2249	5.0513		0.00		
18	TRG	HTC-A08-BKGD02-3036-01	05/15/17 15:41	1.0152	0.2289	5.1411		0.00		
19	TRG	HTC-A08-BKGD02-3642-01	05/15/17 15:38	1.0292	0.2254	5.0625		0.00		
20	TRG	HTC-A08-BKGD02-4248-01	05/15/17 15:35	1.0081	0.2247	5.0468		0.00		

Eberline Analytical
Oak Ridge Laboratory

Spike and Tracer Worksheet

Printed: 8/14/2017 1:46 PM

Internal Work Order	Run	Analysis Code	Date	Technician	Technician Initials	Witness Initials
17-07091	1	ThISO	8/14/2017 13:42	JPACHELLA		

LCS & Matrix Spikes					LCS	MS	LCSD	MSD	LCS		MS		LCSD		MSD	
Isotope	Sol #	Activity dpm/g	Solution Date	Approx Addition	Volume Used (g)	Volume Used (g)	Volume Used (g)	Volume Used (g)	Known pCi	Error Estimate	Added pCi	Error Estimate	Known pCi	Error Estimate	Added pCi	Error Estimate
Th-228	Th-8b	103.560	8/14/2017	0.100	0.1077	0.1811		0.1566	5.02	0.181	8.45	0.304	0.00	0.000	7.31	0.263
Th-230	Th-1b	23.520	8/14/2017	0.500	0.5123	0.6251		0.5911	5.43	0.147	6.62	0.179	0.00	0.000	6.26	0.169
Th-232	Th-8b	103.560	8/14/2017	0.100	0.1077	0.1811		0.1566	5.02	0.181	8.45	0.304	0.00	0.000	7.31	0.263

Tracers

fraction	Isotope	Sol #	Activity dpm/g	Solution Date	Volume Used (g)	Approx Addition
01	Th-229	Th-18a	22.460	8/14/2017	0.4515	0.2200
02	Th-229	Th-18a	22.460	8/14/2017	0.2252	0.2200
03	Th-229	Th-18a	22.460	8/14/2017	0.2140	0.2200
04	Th-229	Th-18a	22.460	8/14/2017	0.2259	0.2200
05	Th-229	Th-18a	22.460	8/14/2017	0.2250	0.2200
06	Th-229	Th-18a	22.460	8/14/2017	0.2278	0.2200
07	Th-229	Th-18a	22.460	8/14/2017	0.2258	0.2200
08	Th-229	Th-18a	22.460	8/14/2017	0.2251	0.2200
09	Th-229	Th-18a	22.460	8/14/2017	0.2246	0.2200
10	Th-229	Th-18a	22.460	8/14/2017	0.2244	0.2200
11	Th-229	Th-18a	22.460	8/14/2017	0.2247	0.2200
12	Th-229	Th-18a	22.460	8/14/2017	0.2243	0.2200
13	Th-229	Th-18a	22.460	8/14/2017	0.2249	0.2200
14	Th-229	Th-18a	22.460	8/14/2017	0.2246	0.2200
15	Th-229	Th-18a	22.460	8/14/2017	0.2252	0.2200
16	Th-229	Th-18a	22.460	8/14/2017	0.2246	0.2200
17	Th-229	Th-18a	22.460	8/14/2017	0.2249	0.2200
18	Th-229	Th-18a	22.460	8/14/2017	0.2289	0.2200
19	Th-229	Th-18a	22.460	8/14/2017	0.2254	0.2200
20	Th-229	Th-18a	22.460	8/14/2017	0.2247	0.2200

Balance Printer Tapes

Tracer	LCS

Matrix Spike

0215

Eberline Analytical
Oak Ridge Laboratory

Aliquot Worksheet

Work Order	Run	Analysis Code	Rpt Units	Lab Deadline	Technician
17-07091	1	ThISO	grams	8/10/2017	JPACHELLA

Lab Fraction	Weston Solutions, Inc. Client ID	Sample Type	Muffle Data	Dilution Data			Aliquot Data		MS Aliquot Data		H-3 Solids Only	
			Ratio Post/Pre	No of Dils	Dil Factor	Ratio	Aliquot	Net Equiv	Aliquot	Net Equiv	Water Added (ml)	H3 Dist Aliq
01	LCS	LCS					1.0000E+00	1.0000E+00				
02	BLANK	MBL					1.0000E+00	1.0000E+00				
03	HTC-A08-BKGD01-0006-01	DUP					1.0197E+00	1.0197E+00				
04	HTC-A08-BKGD01-0006-01	DO					1.0185E+00	1.0185E+00				
05	HTC-A08-BKGD01-0006-01 MS	TRG					1.0192E+00	1.0192E+00				
06	HTC-A08-BKGD01-0006-01 MSD	TRG					1.0189E+00	1.0189E+00				
07	HTC-A08-BKGD01-1218-01	TRG					1.0178E+00	1.0178E+00				
08	HTC-A08-BKGD01-1824-01	TRG					1.0192E+00	1.0192E+00				
09	HTC-A08-BKGD01-2430-01	TRG					1.0106E+00	1.0106E+00				
10	HTC-A08-BKGD01-3036-01	TRG					1.0101E+00	1.0101E+00				
11	HTC-A08-BKGD01-3642-01	TRG					1.0051E+00	1.0051E+00				
12	HTC-A08-BKGD01-4248-01	TRG					1.0279E+00	1.0279E+00				
13	HTC-A08-BKGD02-0006-01	TRG					1.0336E+00	1.0336E+00				
14	HTC-A08-BKGD02-0612-01	TRG					1.0299E+00	1.0299E+00				
15	HTC-A08-BKGD02-1218-01	TRG					1.0093E+00	1.0093E+00				
16	HTC-A08-BKGD02-1824-01	TRG					1.0327E+00	1.0327E+00				
17	HTC-A08-BKGD02-2430-01	TRG					1.0412E+00	1.0412E+00				
18	HTC-A08-BKGD02-3036-01	TRG					1.0152E+00	1.0152E+00				
19	HTC-A08-BKGD02-3642-01	TRG					1.0292E+00	1.0292E+00				
20	HTC-A08-BKGD02-4248-01	TRG					1.0081E+00	1.0081E+00				

Comments	

0216

Technician: JPachella Date: 8/14/17

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

Rough Sample Preparation Log Book

Work Order	Lab Deadline	Date Received in Prep	Date Sealed	Date Returned	Technician
17-07091	8/10/2017	8/2/2017	8/3/2017	8/4/2017	KSALLINGS

Bico Pulverizer: 000302 [✓] Jaw Crusher 68275 [ ]

Eberline Fraction	Weston Solutions, Inc. Client ID	Tare (g) Pan Wt	Gross (g) Wet Wt.	Gross (g) Dry Wt.	Net (g) Wet Wt.	Net (g) Dry Wt.	Percent Liquid	Percent Solid	Gamma Dry Wt.	Gamma LEPS Wt.	Special Info
04	HTC-A08-BKGD01-0006-01	14.5100	835.6600	678.3100	821.1500	663.8000	19.16%	80.84%	0.0000	0.0000	
05	HTC-A08-BKGD01-0006-01 MS	14.5200	841.5000	688.8100	826.9800	674.2900	18.46%	81.54%	0.0000	0.0000	
06	HTC-A08-BKGD01-0006-01 MSD	14.5200	841.5000	688.8100	826.9800	674.2900	18.46%	81.54%	0.0000	0.0000	
07	HTC-A08-BKGD01-1218-01	14.5400	914.6000	745.1300	900.0600	730.5900	18.83%	81.17%	0.0000	0.0000	
08	HTC-A08-BKGD01-1824-01	14.5100	906.2400	733.9300	891.7300	719.4200	19.32%	80.68%	0.0000	0.0000	
09	HTC-A08-BKGD01-2430-01	14.5900	939.2800	764.9700	924.6900	750.3800	18.85%	81.15%	0.0000	0.0000	
10	HTC-A08-BKGD01-3036-01	14.5500	960.4800	781.3200	945.9300	766.7700	18.94%	81.06%	0.0000	0.0000	
11	HTC-A08-BKGD01-3642-01	14.5300	949.6200	766.2000	935.0900	751.6700	19.62%	80.38%	0.0000	0.0000	
12	HTC-A08-BKGD01-4248-01	14.5300	996.6400	809.0000	982.1100	794.4700	19.11%	80.89%	0.0000	0.0000	
13	HTC-A08-BKGD02-0006-01	14.5100	920.1600	722.4800	905.6500	707.9700	21.83%	78.17%	0.0000	0.0000	
14	HTC-A08-BKGD02-0612-01	14.4700	933.8000	750.2600	919.3300	735.7900	19.96%	80.04%	0.0000	0.0000	
15	HTC-A08-BKGD02-1218-01	14.4800	862.2400	690.1000	847.7600	675.6200	20.31%	79.69%	0.0000	0.0000	
16	HTC-A08-BKGD02-1824-01	14.5200	951.5400	759.0000	937.0200	744.4800	20.55%	79.45%	0.0000	0.0000	
17	HTC-A08-BKGD02-2430-01	14.5800	918.3000	748.3600	903.7200	733.7800	18.80%	81.20%	0.0000	0.0000	
18	HTC-A08-BKGD02-3036-01	14.6400	944.2000	772.0700	929.5600	757.4300	18.52%	81.48%	0.0000	0.0000	
19	HTC-A08-BKGD02-3642-01	14.6300	1129.2800	968.0000	1114.6500	953.3700	14.47%	85.53%	0.0000	0.0000	
20	HTC-A08-BKGD02-4248-01	14.5800	1021.6200	877.8000	1007.0400	863.2200	14.28%	85.72%	0.0000	0.0000	

OVENS Fisher Isotemp SN 00579 [✓] VWR SN 000588 [ ]

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

0217

Technician: Kerry Sallings

Date: **Analysis: Rough Prep Logbook**

Analysis: ThISO Page No. 10182

Apex-Alpha™

KB 9/1/17

Sample Description: SPIKE
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001933
Batch Identification: 1707091A-TH
Sample Identification: 01
Sample Geometry: Shelf 2
Procedure Description: Th iso

Detector Name: Alpha_049
Chamber Serial Number: 10006121A
Detector Serial Number: 49
Env. Background: System Bkgd 194888
Reagent Blank: <not performed>

Sample Size: 1.000E+000 +/- 0.000E+000 gram
Sample Date/Time: 9/1/2017 6:48:22 AM
Acquisition Date/Time: 9/1/2017 10:23:57 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: 0.1378 +/- 0.0099
Counting Efficiency: 0.1488 +/- 0.0026 on 11/18/2016 3:34:20 PM
Chem. Recovery Factor: 0.9257 +/- 0.0686

Control Certificate Name: NatTh_Th-8
Chem. Recov. of Control: TH-232 1.171332 +/- 0.113329
Peak Match Tolerance: 0.175 MeV

PEAK AREA REPORT

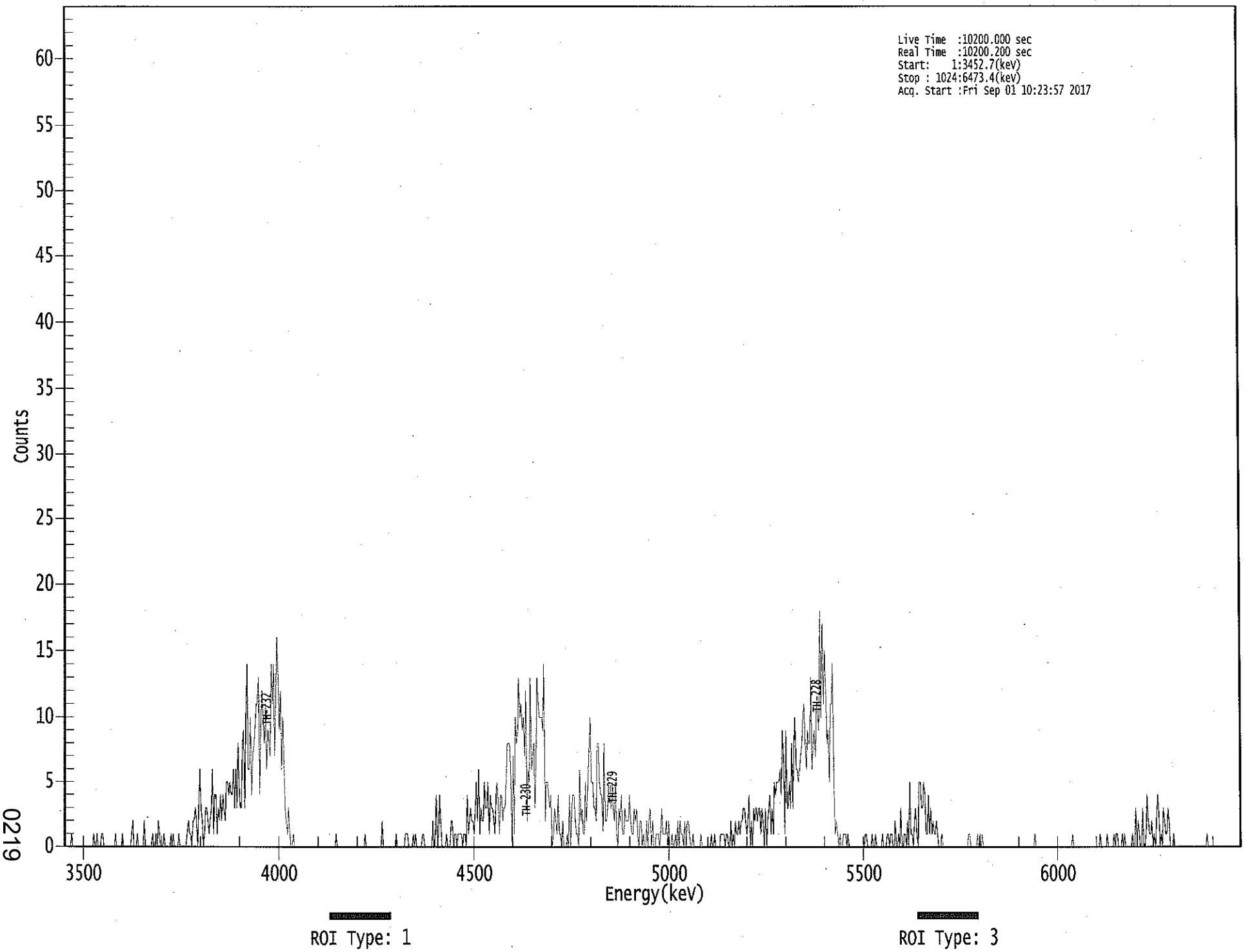
Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
TH-227		5.829	7.83	70.93	0.17	0.00E+000	3.0
TH-228		5.384	310.49	11.13	0.51	0.00E+000	19.9
TH-229	T	4.857	237.49	12.73	0.51	0.00E+000	8.9
TH-230		4.638	335.81	10.72	1.19	0.00E+000	22.4
TH-232		3.974	306.00	11.22	0.00	0.00E+000	16.1

T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.998	5850.00*	1.54E-001 +/- 1.12E-001	8.23E-002 +/- 1.16E-002
TH-228	0.999	5400.00*	5.98E+000 +/- 1.07E+000	1.01E-001 +/- 1.42E-002
TH-229	0.999	4872.00*	4.59E+000 +/- 6.48E-001	1.01E-001 +/- 1.43E-002
TH-230	0.994	4672.00*	6.47E+000 +/- 1.15E+000	1.27E-001 +/- 1.79E-002
TH-232	0.997	3997.00*	5.88E+000 +/- 1.06E+000	1.15E-001 +/- 1.63E-002

0000193394.CNF



0219

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

Sample Title: 01

Elapsed Live time: 10200
Elapsed Real Time: 10200

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

369:	1	4	3	3	2	1	4	5

Sample Title: 01

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

801:	0	0	0	0	0	0	0	0

Sample Title: 01

Channel								
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	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	1	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	1	0	0	0
905:	0	0	1	0	0	0	0	0
913:	1	0	1	1	0	0	0	1
921:	0	1	0	0	0	0	0	0
929:	1	0	0	3	0	2	1	0
937:	0	3	0	0	1	4	2	1
945:	1	2	0	1	0	2	4	3
953:	0	1	0	3	2	1	1	3
961:	2	0	0	0	1	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	1	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™

JCB 9/1/17

Sample Description: BLANK
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001933
Batch Identification: 1707091A-TH
Sample Identification: 02
Sample Geometry: Shelf 2
Procedure Description: Th iso

Detector Name: Alpha_050
Chamber Serial Number: 10006121B
Detector Serial Number: 50
Env. Background: System Bkgd 194889
Reagent Blank: <not performed>

Sample Size: 1.000E+000 +/- 0.000E+000 gram
Sample Date/Time: 9/1/2017 6:48:22 AM
Acquisition Date/Time: 9/1/2017 10:23:59 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: 0.1471 +/- 0.0139
Counting Efficiency: 0.1433 +/- 0.0025 on 11/18/2016 3:34:18 PM
Chem. Recovery Factor: 1.0269 +/- 0.0989

Peak Match Tolerance: 0.175 MeV

PEAK AREA REPORT

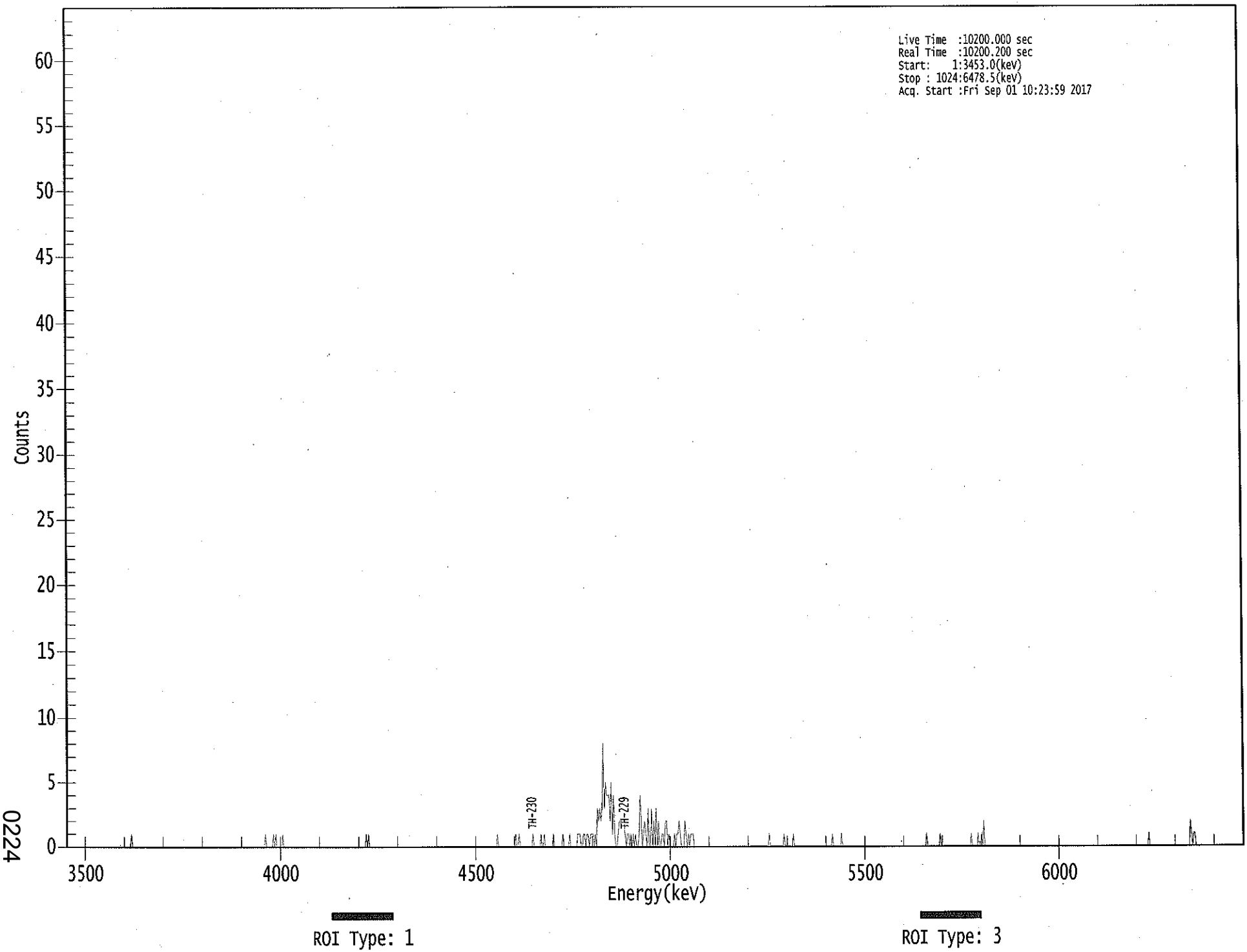
Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
TH-227		5.797	4.15	107.12	0.85	0.00E+000	3.0
TH-228		5.344	2.11	217.68	2.89	0.00E+000	3.0
TH-229	T	4.884	126.47	17.55	1.53	0.00E+000	4.7
TH-230		4.649	5.28	107.99	2.72	0.00E+000	3.0
TH-232		3.985	2.64	152.72	1.36	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	0.985	5850.00*	7.67E-002 +/- 8.34E-002	1.11E-001 +/- 2.05E-002
TH-228	0.984	5400.00*	3.80E-002 +/- 8.31E-002	1.58E-001 +/- 2.93E-002
TH-229	0.999	4872.00*	2.29E+000 +/- 4.25E-001	1.29E-001 +/- 2.39E-002
TH-230	0.997	4672.00*	9.53E-002 +/- 1.04E-001	1.55E-001 +/- 2.87E-002
TH-232	0.999	3997.00*	4.76E-002 +/- 7.32E-002	1.23E-001 +/- 2.29E-002

0000193353.CNF



0224

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

369:	0	0	0	0	0	1	0	0

Sample Title: 02

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

801:	0	0	0	0	0	0	0	0

Sample Title: 02

Channel								
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	0	0
937:	0	0	0	0	1	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:	2	1	0	1	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
9/1/17

Apex-Alpha™

Sample Description: HTC-A08-BKGD01-0006-01-DUP
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001933
Batch Identification: 1707091A-TH
Sample Identification: 03
Sample Geometry: Shelf 2
Procedure Description: Th iso

Detector Name: Alpha_052
Chamber Serial Number: 10006123B
Detector Serial Number: 52
Env. Background: System Bkgd 194890
Reagent Blank: <not performed>

Sample Size: 1.020E+000 +/- 0.000E+000 gram
Sample Date/Time: 5/15/2017 6:48:22 AM
Acquisition Date/Time: 9/1/2017 10:24:01 AM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
Tracer Quantity: 0.214 mL
Effective Efficiency: 0.1911 +/- 0.0164
Counting Efficiency: 0.1737 +/- 0.0030 on 11/18/2016 3:34:15 PM
Chem. Recovery Factor: 1.1001 +/- 0.0965

Peak Match Tolerance: 0.175 MeV

PEAK AREA REPORT

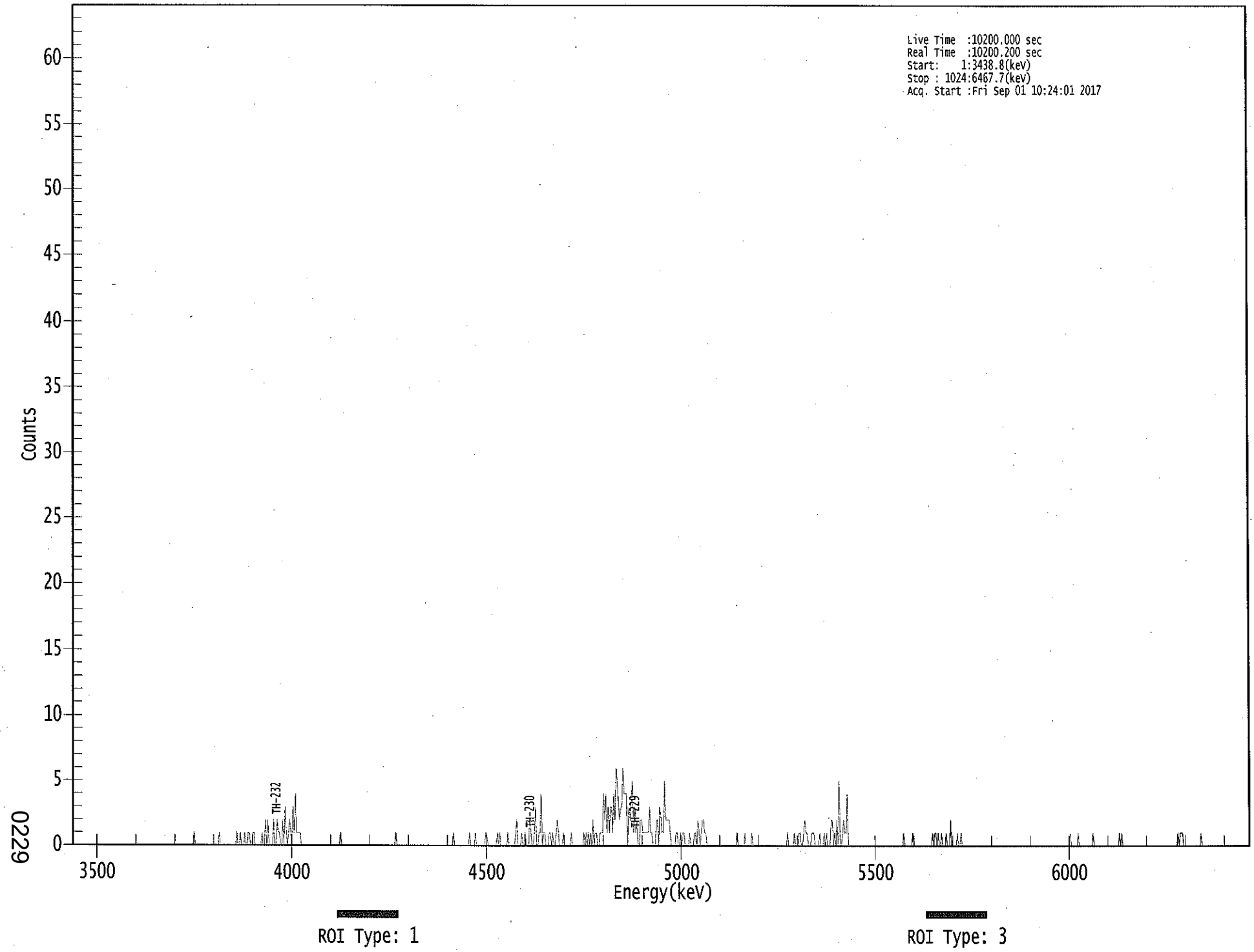
Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
TH-227		5.865	3.83	102.72	0.17	0.00E+000	3.0
TH-228		5.365	36.81	32.91	1.19	0.00E+000	3.0
TH-229	T	4.884	156.15	15.73	0.85	0.00E+000	8.1
TH-230		4.613	35.32	33.35	0.68	0.00E+000	3.5
TH-232		3.962	40.66	30.89	0.34	0.00E+000	3.9

T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.999	5850.00*	5.39E-002 +/- 5.61E-002	5.87E-002 +/- 9.91E-003
TH-228	0.993	5400.00*	5.58E-001 +/- 2.06E-001	9.99E-002 +/- 1.68E-002
TH-229	0.999	4872.00*	2.13E+000 +/- 3.60E-001	8.18E-002 +/- 1.38E-002
TH-230	0.982	4672.00*	4.81E-001 +/- 1.80E-001	7.68E-002 +/- 1.30E-002
TH-232	0.994	3997.00*	5.53E-001 +/- 1.95E-001	6.50E-002 +/- 1.10E-002

0000193351.CNF



0229

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

Sample Title: 03

Elapsed Live time: 10200
Elapsed Real Time: 10200

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

369:	1	0	1	0	0	0	0	0

Sample Title: 03

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

801:	0	0	0	0	0	0	0	0

Sample Title: 03

Channel								
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	1	0	0	0	0	0
873:	0	1	0	0	0	0	0	0
881:	0	0	0	0	0	0	1	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	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:	0	0	0	0	0	0	0	0
953:	0	0	0	0	0	0	0	0
961:	1	0	1	1	1	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	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

Apex-Alpha™

VB 9/1/17

Sample Description: HTC-A08-BKGD01-0006-01
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001933
Batch Identification: 1707091A-TH
Sample Identification: 04
Sample Geometry: Shelf 2
Procedure Description: Th iso

Detector Name: Alpha_033
Chamber Serial Number: 04026479A
Detector Serial Number: 91132
Env. Background: System Bkgd 194874
Reagent Blank: <not performed>

Sample Size: 1.018E+000 +/- 0.000E+000 gram
Sample Date/Time: 5/15/2017 6:48:22 AM
Acquisition Date/Time: 9/1/2017 11:38:04 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: 0.1613 +/- 0.0146
Counting Efficiency: 0.1681 +/- 0.0029 on 11/18/2016 10:08:33 AM
Chem. Recovery Factor: 0.9597 +/- 0.0884

Peak Match Tolerance: 0.175 MeV

PEAK AREA REPORT

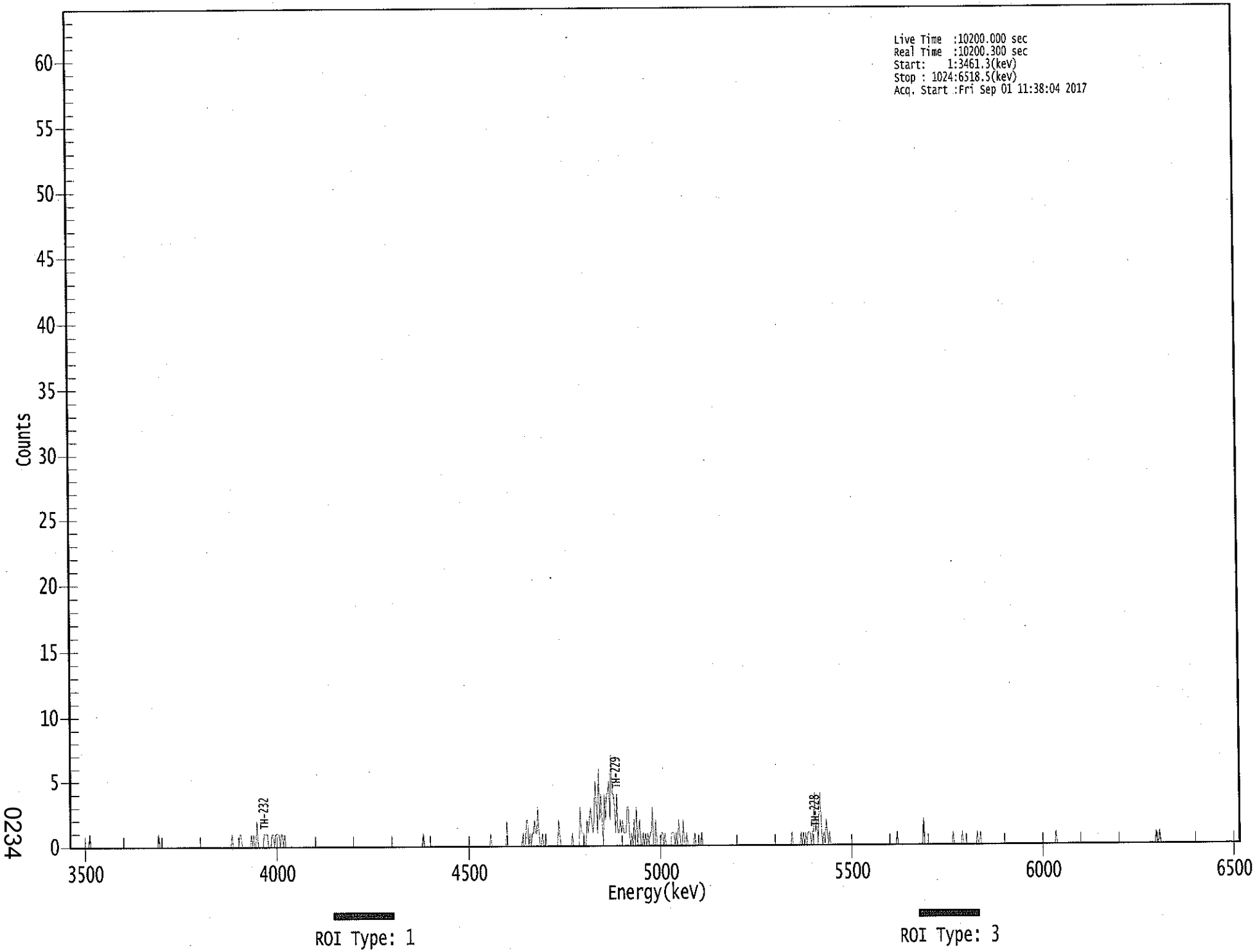
Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
TH-227		5.851	3.81	117.34	1.19	0.00E+000	3.0
TH-228		5.407	27.98	37.84	1.02	0.00E+000	4.0
TH-229	T	4.887	139.15	16.67	0.85	0.00E+000	9.6
TH-230		4.658	20.32	44.32	0.68	0.00E+000	4.5
TH-232		3.969	19.83	44.23	0.17	0.00E+000	3.0

T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	1.000	5850.00*	6.36E-002 +/- 7.55E-002	1.10E-001 +/- 1.95E-002
TH-228	1.000	5400.00*	5.03E-001 +/- 2.10E-001	1.13E-001 +/- 2.01E-002
TH-229	0.999	4872.00*	2.25E+000 +/- 4.00E-001	9.70E-002 +/- 1.72E-002
TH-230	0.999	4672.00*	3.28E-001 +/- 1.57E-001	9.11E-002 +/- 1.62E-002
TH-232	0.996	3997.00*	3.20E-001 +/- 1.52E-001	6.73E-002 +/- 1.19E-002

0000193372.CNF



0234

****
***** 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	0	0	0
17:	0	1	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0
65:	0	0	0	0	0	0	0	0
73:	0	0	0	0	0	1	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	1	0	0
145:	0	0	0	0	1	1	0	0
153:	0	0	0	0	0	0	1	0
161:	1	0	0	2	0	0	0	0
169:	0	1	1	1	1	0	0	0
177:	1	1	0	1	1	1	1	0
185:	1	1	0	1	0	0	0	0
193:	0	0	0	0	0	0	0	0
201:	0	0	0	0	0	0	0	0
209:	0	0	0	0	0	0	0	0
217:	0	0	0	0	0	0	0	0
225:	0	0	0	0	0	0	0	0
233:	0	0	0	0	0	0	0	0
241:	0	0	0	0	0	0	0	0
249:	0	0	0	0	0	0	0	0
257:	0	0	0	0	0	0	0	0
265:	0	0	0	0	0	0	0	0
273:	0	0	0	0	0	0	0	0
281:	0	0	0	0	0	0	0	0
289:	0	0	0	0	0	0	0	0
297:	0	0	0	0	0	0	0	0
305:	0	0	0	0	1	0	0	0
313:	0	0	0	0	0	0	0	0
321:	0	0	0	0	0	0	0	0
329:	0	0	0	0	0	0	0	0
337:	0	0	0	0	0	0	0	0
345:	0	0	0	0	0	0	0	0
353:	0	0	0	0	0	0	0	0
361:	0	0	0	0	0	0	0	1

369:	0	0	0	0	0	0	0	0

Sample Title: 04

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

801:	0	0	0	0	0	0	0	0

Sample Title: 04

Channel								
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	1	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	1	0	0
953:	1	0	0	0	0	0	0	0
961:	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

Apex-Alpha™

KB 9/1/17

Sample Description: HTC-A08-BKGD01-0006-01 MS
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001933
Batch Identification: 1707091A-TH
Sample Identification: 05
Sample Geometry: Shelf 2
Procedure Description: Th iso

Detector Name: Alpha_034
Chamber Serial Number: 04026479B
Detector Serial Number: 91136
Env. Background: System Bkgd 194875
Reagent Blank: <not performed>

Sample Size: 1.019E+000 +/- 0.000E+000 gram
Sample Date/Time: 5/15/2017 6:48:22 AM
Acquisition Date/Time: 9/1/2017 11:38:07 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: 0.1701 +/- 0.0151
Counting Efficiency: 0.1728 +/- 0.0029 on 11/18/2016 10:08:58 AM
Chem. Recovery Factor: 0.9844 +/- 0.0888

Peak Match Tolerance: 0.175 MeV

PEAK AREA REPORT

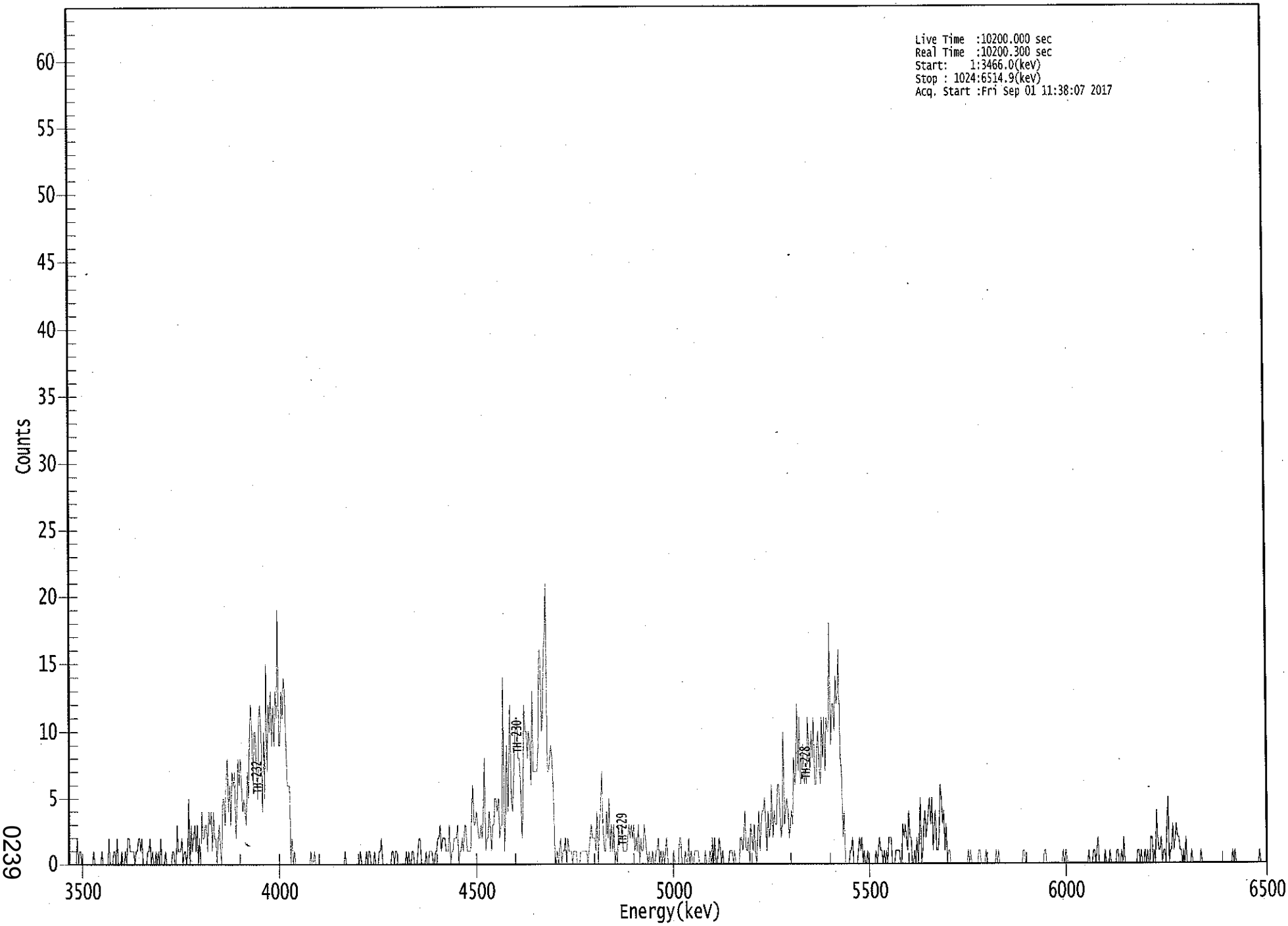
Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
TH-227		5.850	14.64	53.94	1.36	0.00E+000	6.0
TH-228		5.342	535.81	8.48	1.19	0.00E+000	13.4
TH-229	T	4.873	146.15	16.27	0.85	0.00E+000	7.1
TH-230		4.609	520.49	8.60	0.51	0.00E+000	12.7
TH-232		3.945	513.98	8.66	1.02	0.00E+000	11.4

T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	1.000	5850.00*	2.32E-001 +/- 1.31E-001	1.08E-001 +/- 1.88E-002
TH-228	0.983	5400.00*	9.13E+000 +/- 1.76E+000	1.12E-001 +/- 1.95E-002
TH-229	1.000	4872.00*	2.24E+000 +/- 3.90E-001	9.19E-002 +/- 1.60E-002
TH-230	0.979	4672.00*	7.97E+000 +/- 1.54E+000	8.03E-002 +/- 1.39E-002
TH-232	0.986	3997.00*	7.85E+000 +/- 1.52E+000	9.63E-002 +/- 1.67E-002

0000193373.CNF



ROI Type: 1

ROI Type: 3

0239

****
***** 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	0	0	0	0	2
9:	0	1	1	0	0	0	0	0
17:	0	0	0	0	0	1	0	0
25:	0	0	0	0	1	0	0	0
33:	0	0	2	0	0	0	1	1
41:	0	2	0	0	0	1	0	0
49:	1	0	2	2	1	1	1	1
57:	0	1	1	2	2	1	2	0
65:	0	0	0	1	1	2	0	1
73:	0	0	1	0	1	0	2	0
81:	0	0	1	0	0	0	0	0
89:	1	1	0	0	3	1	1	1
97:	2	0	1	1	0	1	5	0
105:	3	1	2	3	1	3	0	2
113:	0	4	2	2	3	3	1	4
121:	3	4	1	4	2	2	0	2
129:	3	1	0	5	5	3	6	8
137:	4	6	3	7	6	7	2	4
145:	8	6	8	6	4	5	4	3
153:	7	5	10	12	10	6	10	10
161:	7	5	11	12	9	4	10	5
169:	15	7	12	10	13	9	12	9
177:	13	11	19	9	9	13	11	14
185:	13	9	6	6	6	0	2	0
193:	1	0	0	0	0	0	0	0
201:	0	0	0	0	0	0	1	0
209:	0	1	0	0	0	0	0	0
217:	0	0	0	0	0	0	0	0
225:	0	0	0	0	0	0	0	0
233:	0	0	0	1	0	0	0	0
241:	0	0	0	0	0	0	0	0
249:	1	0	0	0	0	1	0	1
257:	1	0	0	0	1	0	0	0
265:	1	1	2	0	0	0	0	0
273:	0	0	0	1	1	0	1	1
281:	0	0	0	0	0	0	0	1
289:	0	1	0	0	1	1	0	0
297:	0	1	2	2	0	0	0	0
305:	1	0	0	1	1	1	0	0
313:	1	1	2	2	3	1	2	2
321:	2	1	1	1	3	0	1	1
329:	2	2	2	3	0	1	1	2
337:	1	3	3	1	1	1	1	4
345:	6	3	3	4	3	2	2	3
353:	2	4	8	1	2	2	4	3
361:	1	3	3	5	5	4	5	2

369:	3	3	14	1	4	9	4	8

Sample Title: 05

Channel								
377:	12	5	4	6	9	11	11	8
385:	8	6	2	4	12	10	10	8
393:	10	9	6	13	7	7	7	7
401:	9	16	16	10	11	16	17	21
409:	7	7	8	9	8	5	1	0
417:	1	0	1	2	0	1	1	2
425:	0	2	1	1	1	0	1	1
433:	1	0	0	0	1	1	1	1
441:	1	1	0	1	2	3	2	2
449:	2	1	4	0	3	4	7	3
457:	1	1	4	2	5	1	3	1
465:	3	0	1	0	3	2	2	3
473:	1	1	1	1	2	3	2	3
481:	2	3	1	2	1	3	0	2
489:	1	1	3	2	1	0	1	0
497:	0	1	0	0	1	1	2	0
505:	1	0	1	0	1	2	0	0
513:	0	0	0	1	0	0	0	0
521:	2	2	0	0	0	1	0	0
529:	2	0	1	0	0	1	1	1
537:	1	0	0	0	0	0	1	0
545:	0	0	1	0	2	0	2	0
553:	0	1	2	1	0	1	0	0
561:	0	0	0	1	1	1	0	1
569:	0	0	0	0	2	2	1	2
577:	4	1	1	2	0	3	2	1
585:	3	1	0	2	4	1	3	4
593:	4	5	3	1	4	2	3	6
601:	2	4	3	3	6	6	4	2
609:	3	10	3	4	5	4	2	3
617:	4	3	8	6	7	12	7	11
625:	6	7	9	6	7	6	11	9
633:	7	10	8	11	6	6	9	10
641:	7	6	11	8	11	7	11	10
649:	10	18	9	12	12	10	14	12
657:	13	16	8	7	2	4	0	0
665:	0	0	1	1	2	0	0	0
673:	0	1	2	1	2	0	1	0
681:	0	1	0	0	0	0	0	0
689:	1	0	1	2	1	1	0	1
697:	0	1	0	2	2	2	0	0
705:	0	1	1	1	1	0	0	3
713:	2	3	2	1	4	2	2	0
721:	0	1	0	2	0	2	5	0
729:	1	3	4	2	3	4	5	3
737:	5	1	3	4	1	1	2	6
745:	5	3	4	1	3	0	1	1
753:	0	0	0	0	0	0	0	0
761:	0	0	0	0	0	0	0	1
769:	0	1	0	0	0	0	0	0
777:	1	1	0	0	0	0	1	0
785:	0	0	0	0	0	0	0	1
793:	0	1	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	1	1
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	1	1	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	1	0	1	1	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	1	0
873:	0	0	1	1	0	1	2	0
881:	0	0	0	0	1	0	0	0
889:	1	0	0	0	0	0	1	1
897:	0	0	1	0	2	0	0	0
905:	0	0	0	0	0	0	0	0
913:	1	1	0	1	0	0	1	0
921:	1	0	0	2	2	0	1	0
929:	4	2	1	1	2	0	1	1
937:	0	3	5	0	1	1	3	1
945:	2	3	2	2	1	1	0	1
953:	0	2	0	0	0	0	1	0
961:	0	0	0	0	0	0	1	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	1	0	1	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	1	0	0	0	0	0	0	0

KB 9/1/17

Apex-Alpha™

Sample Description: HTC-A08-BKGD01-0006-01 MSD
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001933
Batch Identification: 1707091A-TH
Sample Identification: 06
Sample Geometry: Shelf 2
Procedure Description: Th iso

Detector Name: Alpha_035
Chamber Serial Number: 04026477A
Detector Serial Number: 58771
Env. Background: System Bkgd 194876
Reagent Blank: <not performed>

Sample Size: 1.019E+000 +/- 0.000E+000 gram
Sample Date/Time: 5/15/2017 6:48:22 AM
Acquisition Date/Time: 9/1/2017 11:38:09 AM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
Tracer Quantity: 0.228 mL
Effective Efficiency: 0.1859 +/- 0.0157
Counting Efficiency: 0.1580 +/- 0.0027 on 11/18/2016 10:08:56 AM
Chem. Recovery Factor: 1.1766 +/- 0.1016

Peak Match Tolerance: 0.175 MeV

PEAK AREA REPORT

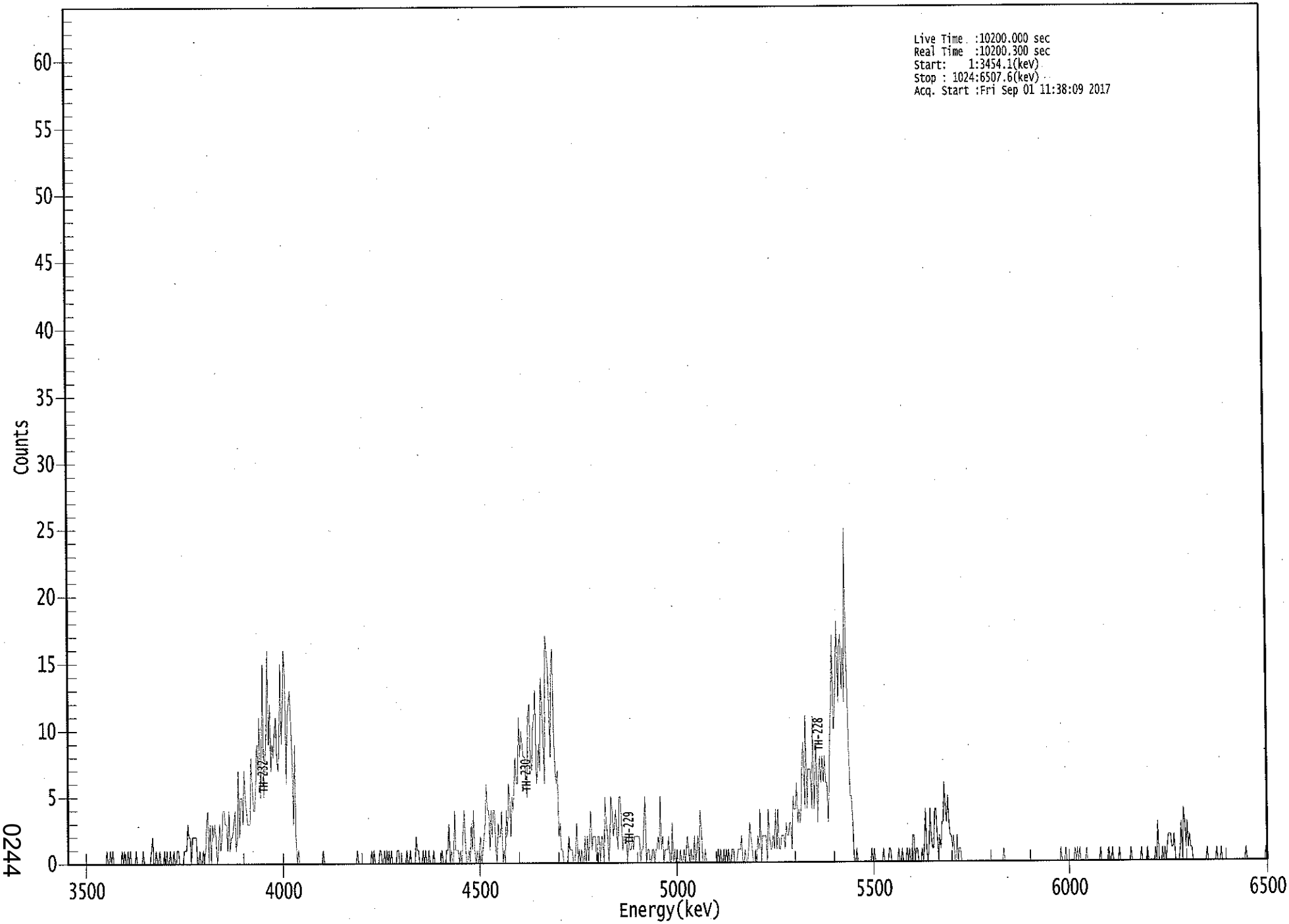
Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
TH-227		5.831	15.66	50.15	0.34	0.00E+000	3.0
TH-228		5.365	516.00	8.64	0.00	0.00E+000	8.5
TH-229	T	4.882	161.66	15.43	0.34	0.00E+000	6.0
TH-230		4.621	475.83	8.99	0.17	0.00E+000	13.9
TH-232		3.953	463.66	9.11	0.34	0.00E+000	14.3

T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.998	5850.00*	2.27E-001 +/- 1.20E-001	6.93E-002 +/- 1.15E-002
TH-228	0.994	5400.00*	8.05E+000 +/- 1.51E+000	9.35E-002 +/- 1.55E-002
TH-229	1.000	4872.00*	2.27E+000 +/- 3.77E-001	6.72E-002 +/- 1.11E-002
TH-230	0.986	4672.00*	6.67E+000 +/- 1.26E+000	5.85E-002 +/- 9.70E-003
TH-232	0.990	3997.00*	6.49E+000 +/- 1.23E+000	6.69E-002 +/- 1.11E-002

0000193366.CNF



ROI Type: 1

ROI Type: 3

0244

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

Sample Title: 06

Elapsed Live time: 10200
Elapsed Real Time: 10200

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

369:	2	4	0	1	0	4	2	6

Sample Title: 06

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

801:	0	0	0	0	0	0	0	0

Sample Title: 06

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

Apex-Alpha™

KG 9/1/17

Sample Description: HTC-A08-BKGD01-1218-01
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001933
Batch Identification: 1707091A-TH
Sample Identification: 07
Sample Geometry: Shelf 2
Procedure Description: Th iso

Detector Name: Alpha_036
Chamber Serial Number: 04026477B
Detector Serial Number: 84167
Env. Background: System Bkgd 194877
Reagent Blank: <not performed>

Sample Size: 1.018E+000 +/- 0.000E+000 gram
Sample Date/Time: 5/15/2017 6:48:22 AM
Acquisition Date/Time: 9/1/2017 11:38:11 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: 0.1914 +/- 0.0161
Counting Efficiency: 0.1824 +/- 0.0031 on 11/18/2016 10:08:54 AM
Chem. Recovery Factor: 1.0494 +/- 0.0900

Peak Match Tolerance: 0.175 MeV

PEAK AREA REPORT

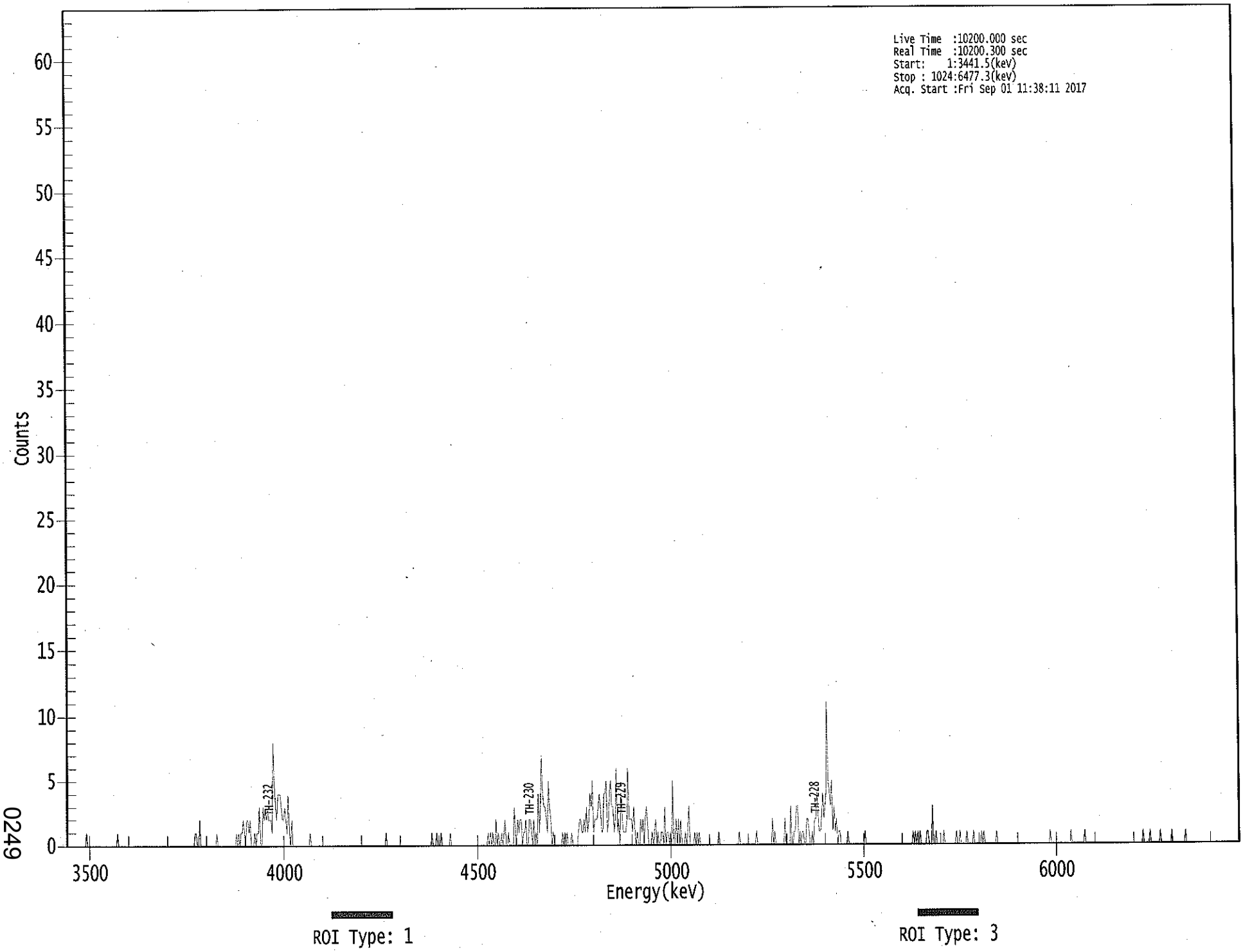
Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
TH-227		5.824	9.32	66.89	0.68	0.00E+000	3.0
TH-228		5.378	89.64	20.88	1.36	0.00E+000	5.1
TH-229	T	4.875	164.98	15.31	1.02	0.00E+000	4.0
TH-230		4.638	73.81	23.03	1.19	0.00E+000	7.0
TH-232		3.964	91.49	20.56	0.51	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	0.997	5850.00*	1.31E-001 +/- 9.04E-002	7.94E-002 +/- 1.31E-002
TH-228	0.997	5400.00*	1.36E+000 +/- 3.62E-001	1.04E-001 +/- 1.71E-002
TH-229	1.000	4872.00*	2.26E+000 +/- 3.72E-001	8.61E-002 +/- 1.42E-002
TH-230	0.994	4672.00*	1.01E+000 +/- 2.85E-001	8.98E-002 +/- 1.48E-002
TH-232	0.994	3997.00*	1.24E+000 +/- 3.28E-001	7.14E-002 +/- 1.18E-002

0000193367.CNF



0249

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

369:	1	0	1	0	0	2	0	1

Sample Title: 07

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

801:	0	0	0	0	0	0	0	0

Sample Title: 07

Channel								
809:	0	0	1	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	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	0	1	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	1	0	0	0	0	0
945:	1	0	0	0	0	0	0	0
953:	0	1	0	0	0	0	0	0
961:	0	0	0	1	0	0	0	0
969:	0	0	0	0	0	0	0	1
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™

JCB 9/1/17

Sample Description: HTC-A08-BKGD01-1824-01
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001933
Batch Identification: 1707091A-TH
Sample Identification: 08
Sample Geometry: Shelf 2
Procedure Description: Th iso

Detector Name: Alpha_037
Chamber Serial Number: 04026478A
Detector Serial Number: 91133
Env. Background: System Bkgd 194878
Reagent Blank: <not performed>

Sample Size: 1.019E+000 +/- 0.000E+000 gram
Sample Date/Time: 5/15/2017 6:48:22 AM
Acquisition Date/Time: 9/1/2017 11:38:14 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: 0.1581 +/- 0.0144
Counting Efficiency: 0.1587 +/- 0.0027 on 11/18/2016 10:08:53 AM
Chem. Recovery Factor: 0.9957 +/- 0.0925

Peak Match Tolerance: 0.175 MeV

PEAK AREA REPORT

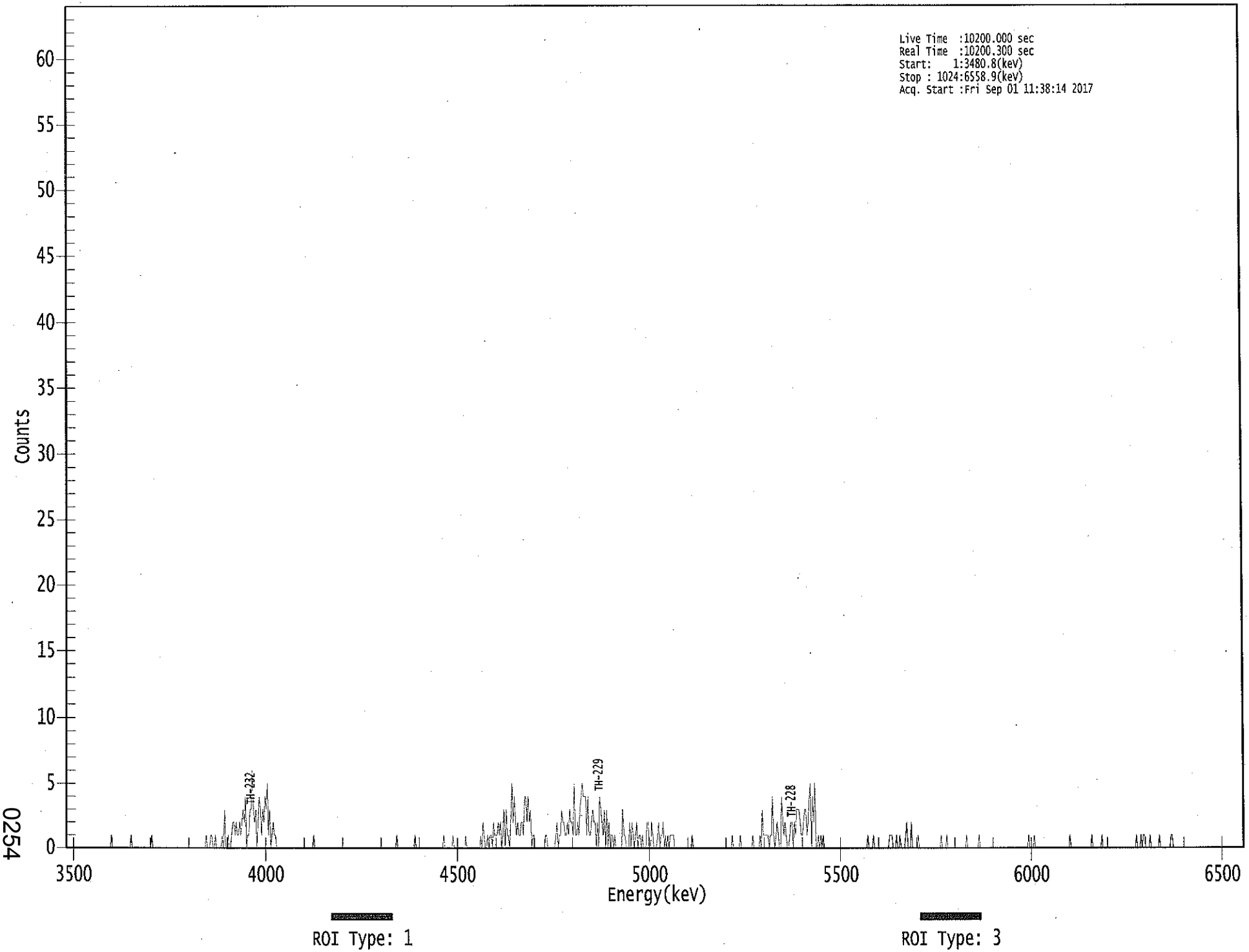
Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
TH-227		5.849	5.98	87.78	1.02	0.00E+000	3.0
TH-228		5.374	85.81	21.33	1.19	0.00E+000	6.8
TH-229	T	4.872	135.83	16.83	0.17	0.00E+000	3.8
TH-230		4.638	74.83	22.69	0.17	0.00E+000	5.0
TH-232		3.961	90.66	20.63	0.34	0.00E+000	6.0

T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	1.000	5850.00*	1.02E-001 +/- 9.12E-002	1.07E-001 +/- 1.92E-002
TH-228	0.996	5400.00*	1.57E+000 +/- 4.38E-001	1.21E-001 +/- 2.16E-002
TH-229	1.000	4872.00*	2.25E+000 +/- 4.02E-001	6.90E-002 +/- 1.23E-002
TH-230	0.994	4672.00*	1.23E+000 +/- 3.56E-001	6.88E-002 +/- 1.23E-002
TH-232	0.993	3997.00*	1.49E+000 +/- 4.07E-001	7.86E-002 +/- 1.41E-002

0000193360.CNF



0254

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

Sample Title: 08

Elapsed Live time: 10200
Elapsed Real Time: 10200

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

369:	1	0	2	1	1	1	2	1

Sample Title: 08

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

801:	0	0	0	0	0	0	0	0

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

Apex-Alpha™

KB 9/1/17

Sample Description: HTC-A08-BKGD01-2430-01
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001933
Batch Identification: 1707091A-TH
Sample Identification: 09
Sample Geometry: Shelf 2
Procedure Description: Th iso

Detector Name: Alpha_038
Chamber Serial Number: 04026478B
Detector Serial Number: 91134
Env. Background: System Bkgd 194879
Reagent Blank: <not performed>

Sample Size: 1.011E+000 +/- 0.000E+000 gram
Sample Date/Time: 5/15/2017 6:48:22 AM
Acquisition Date/Time: 9/1/2017 11:38:16 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: 0.2089 +/- 0.0169
Counting Efficiency: 0.1543 +/- 0.0027 on 11/18/2016 10:08:51 AM
Chem. Recovery Factor: 1.3537 +/- 0.1122

Peak Match Tolerance: 0.175 MeV

PEAK AREA REPORT

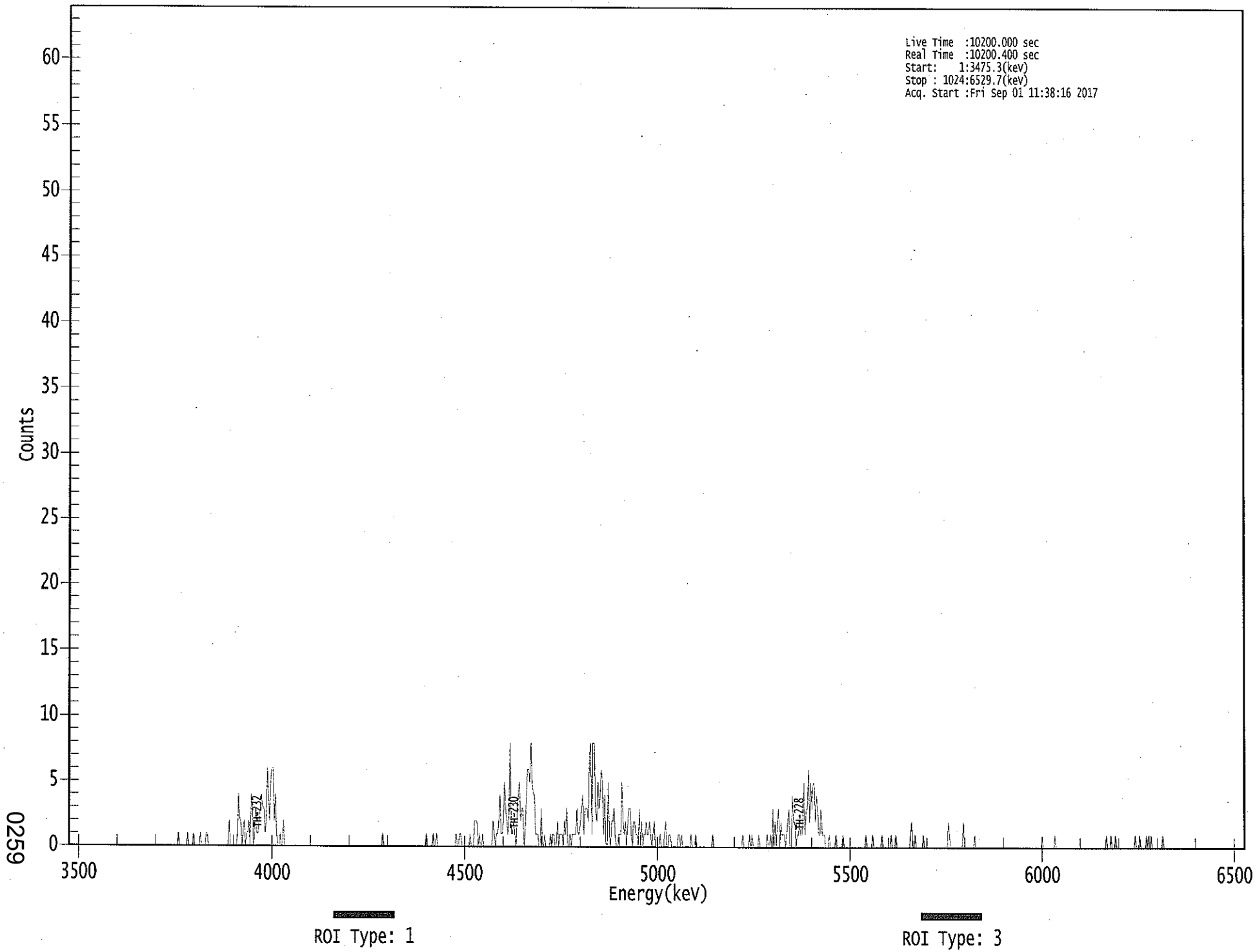
Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
TH-227		5.840	7.49	74.41	0.51	0.00E+000	4.5
TH-228		5.370	98.15	19.88	0.85	0.00E+000	5.2
TH-229	T	4.868	179.15	14.68	0.85	0.00E+000	6.5
TH-230		4.630	125.66	17.51	0.34	0.00E+000	4.1
TH-232		3.966	91.15	20.64	0.85	0.00E+000	6.7

T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	1.000	5850.00*	9.73E-002 +/- 7.41E-002	6.82E-002 +/- 1.08E-002
TH-228	0.995	5400.00*	1.37E+000 +/- 3.50E-001	8.38E-002 +/- 1.33E-002
TH-229	1.000	4872.00*	2.26E+000 +/- 3.59E-001	7.55E-002 +/- 1.20E-002
TH-230	0.991	4672.00*	1.58E+000 +/- 3.74E-001	6.01E-002 +/- 9.55E-003
TH-232	0.995	3997.00*	1.14E+000 +/- 2.98E-001	7.51E-002 +/- 1.19E-002

0000193361.CNF



0259

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

Sample Title: 09

Elapsed Live time: 10200
Elapsed Real Time: 10200

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

369:	2	1	0	1	1	2	4	1

Sample Title: 09

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

801:	0	0	0	0	0	0	0	0

Sample Title: 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	1	0
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	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	1	0
905:	0	0	1	0	0	0	1	0
913:	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	1
929:	0	0	0	1	0	0	0	0
937:	0	1	0	1	0	1	0	0
945:	0	0	0	0	0	0	0	1
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 9/1/17

Sample Description: HTC-A08-BKGD01-3036-01
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001933
Batch Identification: 1707091A-TH
Sample Identification: 10
Sample Geometry: Shelf 2
Procedure Description: Th iso

Detector Name: Alpha_039
Chamber Serial Number: 06027396A
Detector Serial Number: 83109
Env. Background: System Bkgd 194880
Reagent Blank: <not performed>

Sample Size: 1.010E+000 +/- 0.000E+000 gram
Sample Date/Time: 5/15/2017 6:48:22 AM
Acquisition Date/Time: 9/1/2017 11:38:19 AM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
Tracer Quantity: 0.224 mL
Effective Efficiency: 0.1916 +/- 0.0162
Counting Efficiency: 0.1852 +/- 0.0031 on 11/18/2016 10:08:50 AM
Chem. Recovery Factor: 1.0346 +/- 0.0891

Peak Match Tolerance: 0.175 MeV

PEAK AREA REPORT

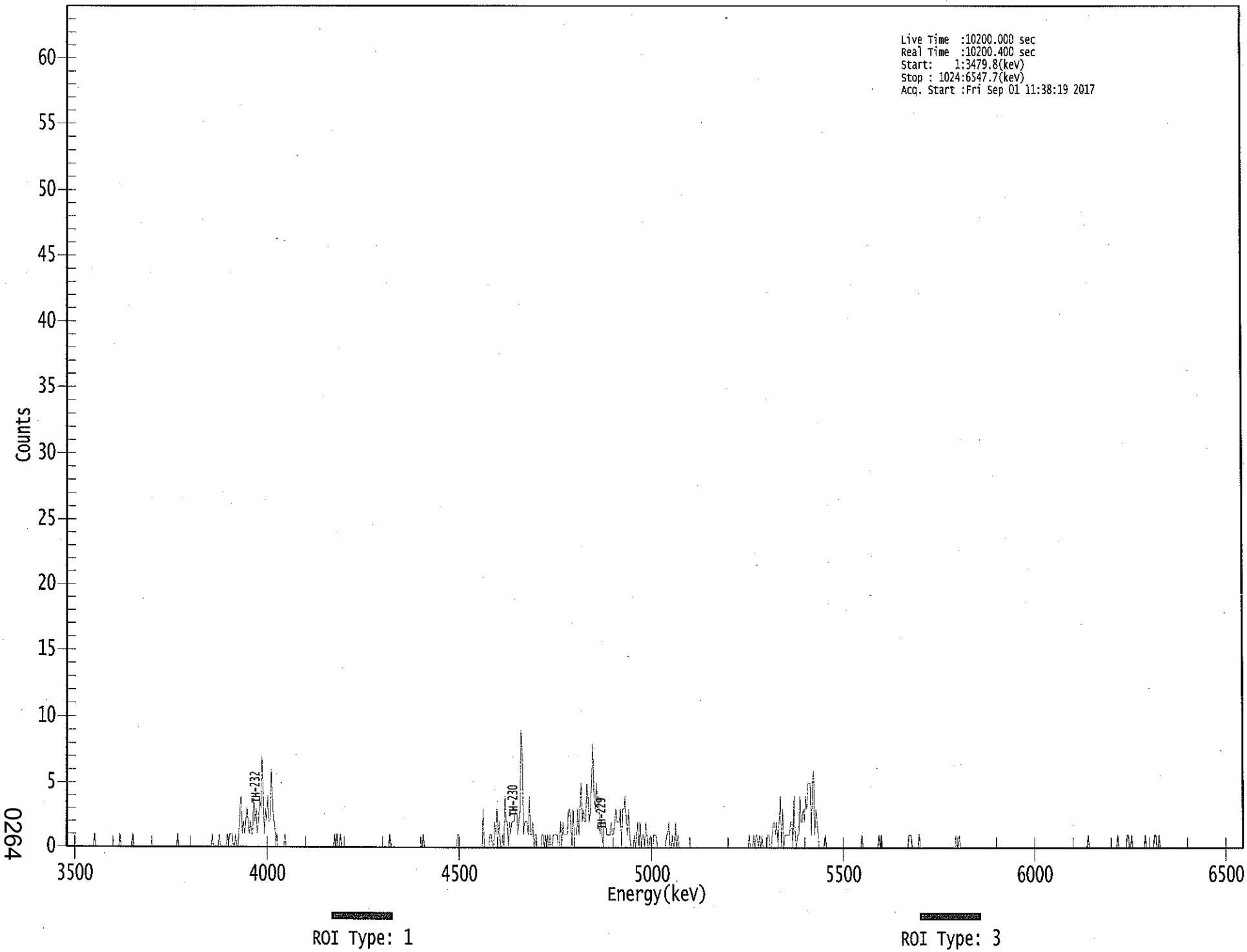
Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
TH-227		5.766	2.49	138.29	0.51	0.00E+000	3.0
TH-228		5.378	92.11	20.79	2.89	0.00E+000	6.3
TH-229	T	4.871	164.13	15.40	1.87	0.00E+000	7.5
TH-230		4.644	81.81	21.85	1.19	0.00E+000	6.5
TH-232		3.973	90.15	20.76	0.85	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	0.964	5850.00*	3.53E-002 +/- 4.92E-002	7.44E-002 +/- 1.23E-002
TH-228	0.997	5400.00*	1.41E+000 +/- 3.74E-001	1.34E-001 +/- 2.21E-002
TH-229	1.000	4872.00*	2.26E+000 +/- 3.74E-001	1.04E-001 +/- 1.72E-002
TH-230	0.996	4672.00*	1.12E+000 +/- 3.08E-001	9.04E-002 +/- 1.50E-002
TH-232	0.997	3997.00*	1.23E+000 +/- 3.28E-001	8.20E-002 +/- 1.36E-002

0000193368.CNF



0264

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

369:	1	0	0	2	1	3	1	2

Sample Title: 10

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

801:	0	0	0	0	0	0	0	0

Sample Title: 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	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	1	0	0	0	0	0	0
921:	0	1	1	0	0	1	0	0
929:	0	0	0	0	0	0	0	0
937:	0	1	0	0	0	0	0	0
945:	0	1	1	0	0	1	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 9/1/17

Sample Description: HTC-A08-BKGD01-3642-01
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001933
Batch Identification: 1707091A-TH
Sample Identification: 11
Sample Geometry: Shelf 2
Procedure Description: Th iso

Detector Name: Alpha_040
Chamber Serial Number: 06027396B
Detector Serial Number: 91135
Env. Background: System Bkgd 194881
Reagent Blank: <not performed>

Sample Size: 1.005E+000 +/- 0.000E+000 gram
Sample Date/Time: 5/15/2017 6:48:22 AM
Acquisition Date/Time: 9/1/2017 11:38:21 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: 0.1809 +/- 0.0156
Counting Efficiency: 0.1813 +/- 0.0031 on 11/18/2016 10:08:48 AM
Chem. Recovery Factor: 0.9974 +/- 0.0877

Peak Match Tolerance: 0.175 MeV

PEAK AREA REPORT

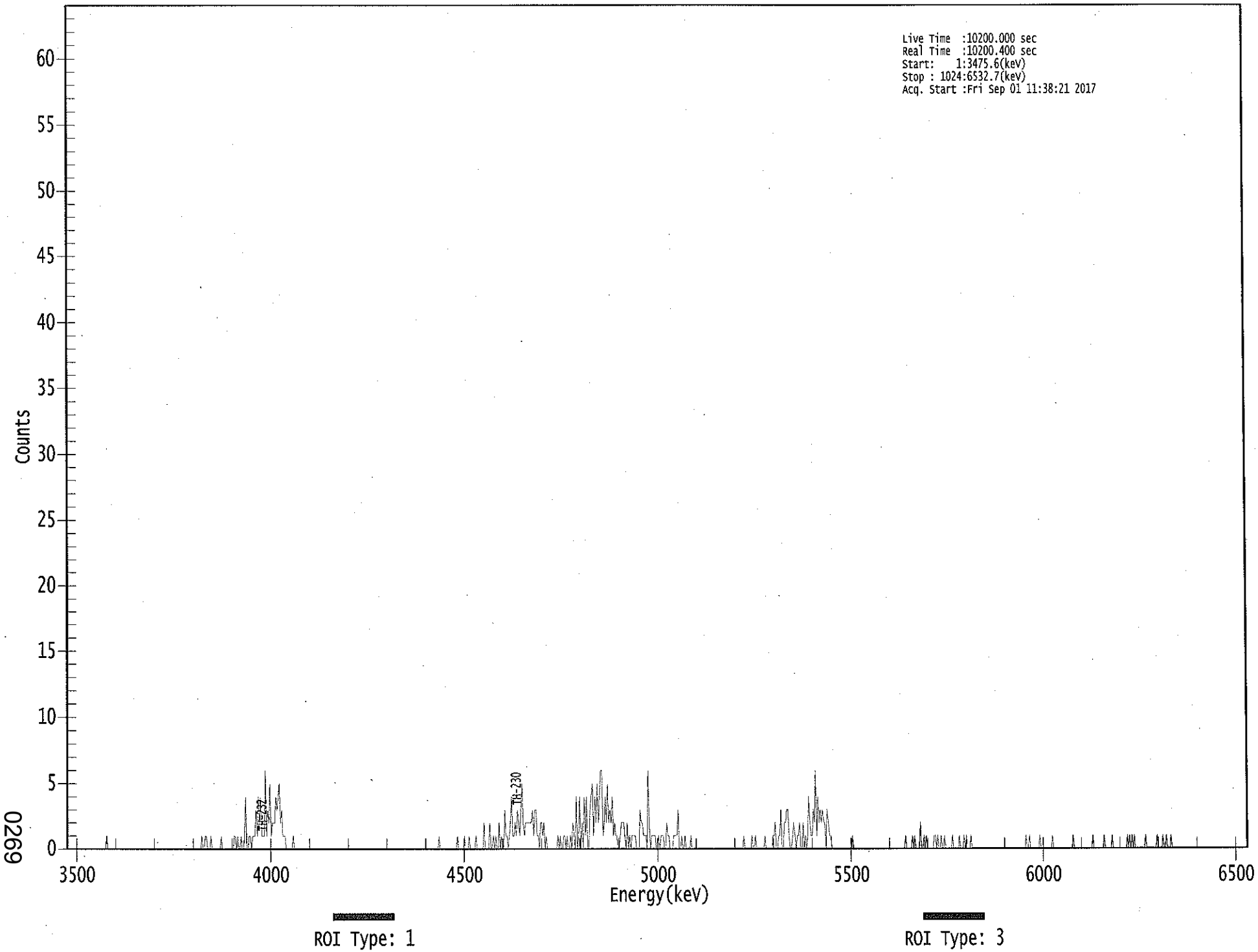
Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
TH-227		5.824	12.81	57.66	1.19	0.00E+000	6.0
TH-228		5.378	79.98	22.08	1.02	0.00E+000	4.0
TH-229	T	4.888	155.15	15.79	0.85	0.00E+000	9.3
TH-230		4.637	79.49	22.07	0.51	0.00E+000	6.2
TH-232		3.980	84.49	21.40	0.51	0.00E+000	3.6

T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.996	5850.00*	1.93E-001 +/- 1.16E-001	9.94E-002 +/- 1.68E-002
TH-228	0.997	5400.00*	1.30E+000 +/- 3.62E-001	1.02E-001 +/- 1.73E-002
TH-229	0.999	4872.00*	2.27E+000 +/- 3.84E-001	8.77E-002 +/- 1.48E-002
TH-230	0.994	4672.00*	1.16E+000 +/- 3.23E-001	7.66E-002 +/- 1.30E-002
TH-232	0.999	3997.00*	1.23E+000 +/- 3.36E-001	7.65E-002 +/- 1.29E-002

0000193369.CNF



0269

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

Sample Title: 11

Elapsed Live time: 10200
Elapsed Real Time: 10200

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

369:	1	0	1	0	0	2	0	1

Sample Title: 11

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

801:	0	0	0	0	0	0	0	0

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

KB 9/1/17

Apex-Alpha™

Sample Description: HTC-A08-BKGD01-4248-01
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001933
Batch Identification: 1707091A-TH
Sample Identification: 12
Sample Geometry: Shelf 2
Procedure Description: Th iso

Detector Name: Alpha_043
Chamber Serial Number: 04026481A
Detector Serial Number: 91088
Env. Background: System Bkgd 194882
Reagent Blank: <not performed>

Sample Size: 1.028E+000 +/- 0.000E+000 gram
Sample Date/Time: 5/15/2017 6:48:22 AM
Acquisition Date/Time: 9/1/2017 11:38:23 AM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
Tracer Quantity: 0.224 mL
Effective Efficiency: 0.1874 +/- 0.0160
Counting Efficiency: 0.1874 +/- 0.0032 on 11/18/2016 10:08:43 AM
Chem. Recovery Factor: 0.9996 +/- 0.0871

Peak Match Tolerance: 0.175 MeV

PEAK AREA REPORT

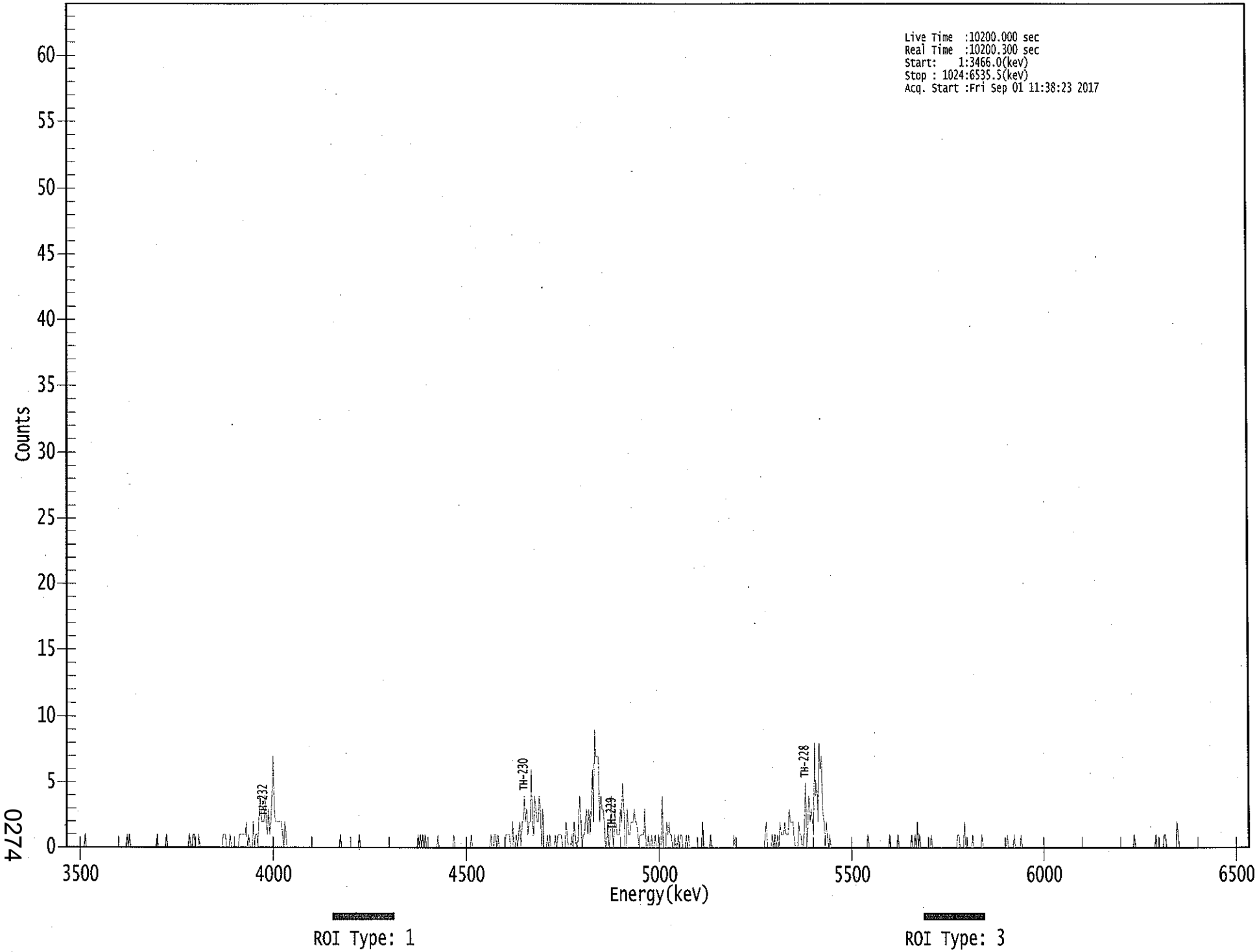
Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
TH-227		5.828	9.15	68.23	0.85	0.00E+000	3.0
TH-228		5.382	99.62	19.91	2.38	0.00E+000	4.7
TH-229	T	4.879	160.45	15.62	2.55	0.00E+000	12.4
TH-230		4.651	65.47	24.55	1.53	0.00E+000	4.5
TH-232		3.975	72.98	23.13	1.02	0.00E+000	6.4

T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.997	5850.00*	1.30E-001 +/- 9.16E-002	8.53E-002 +/- 1.43E-002
TH-228	0.998	5400.00*	1.53E+000 +/- 3.98E-001	1.26E-001 +/- 2.11E-002
TH-229	1.000	4872.00*	2.22E+000 +/- 3.72E-001	1.16E-001 +/- 1.94E-002
TH-230	0.998	4672.00*	9.02E-001 +/- 2.68E-001	9.80E-002 +/- 1.64E-002
TH-232	0.997	3997.00*	1.00E+000 +/- 2.87E-001	8.67E-002 +/- 1.45E-002

0000193370.CNF



0274

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

Sample Title: 12

Elapsed Live time: 10200
Elapsed Real Time: 10200

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

369:	0	1	1	0	1	0	0	0

Sample Title: 12

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

801:	0	0	0	0	0	0	0	0

Sample Title: 12

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

Apex-Alpha™

KB 9/1/17

Sample Description: HTC-A08-BKGD02-0006-01
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001933
Batch Identification: 1707091A-TH
Sample Identification: 13
Sample Geometry: Shelf 2
Procedure Description: Th iso

Detector Name: Alpha_044
Chamber Serial Number: 04026481B
Detector Serial Number: 84168
Env. Background: System Bkgd 194883
Reagent Blank: <not performed>

Sample Size: 1.034E+000 +/- 0.000E+000 gram
Sample Date/Time: 5/15/2017 6:48:22 AM
Acquisition Date/Time: 9/1/2017 11:38:26 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: 0.2228 +/- 0.0176
Counting Efficiency: 0.1793 +/- 0.0030 on 11/18/2016 10:08:42 AM
Chem. Recovery Factor: 1.2430 +/- 0.1002

Peak Match Tolerance: 0.175 MeV

PEAK AREA REPORT

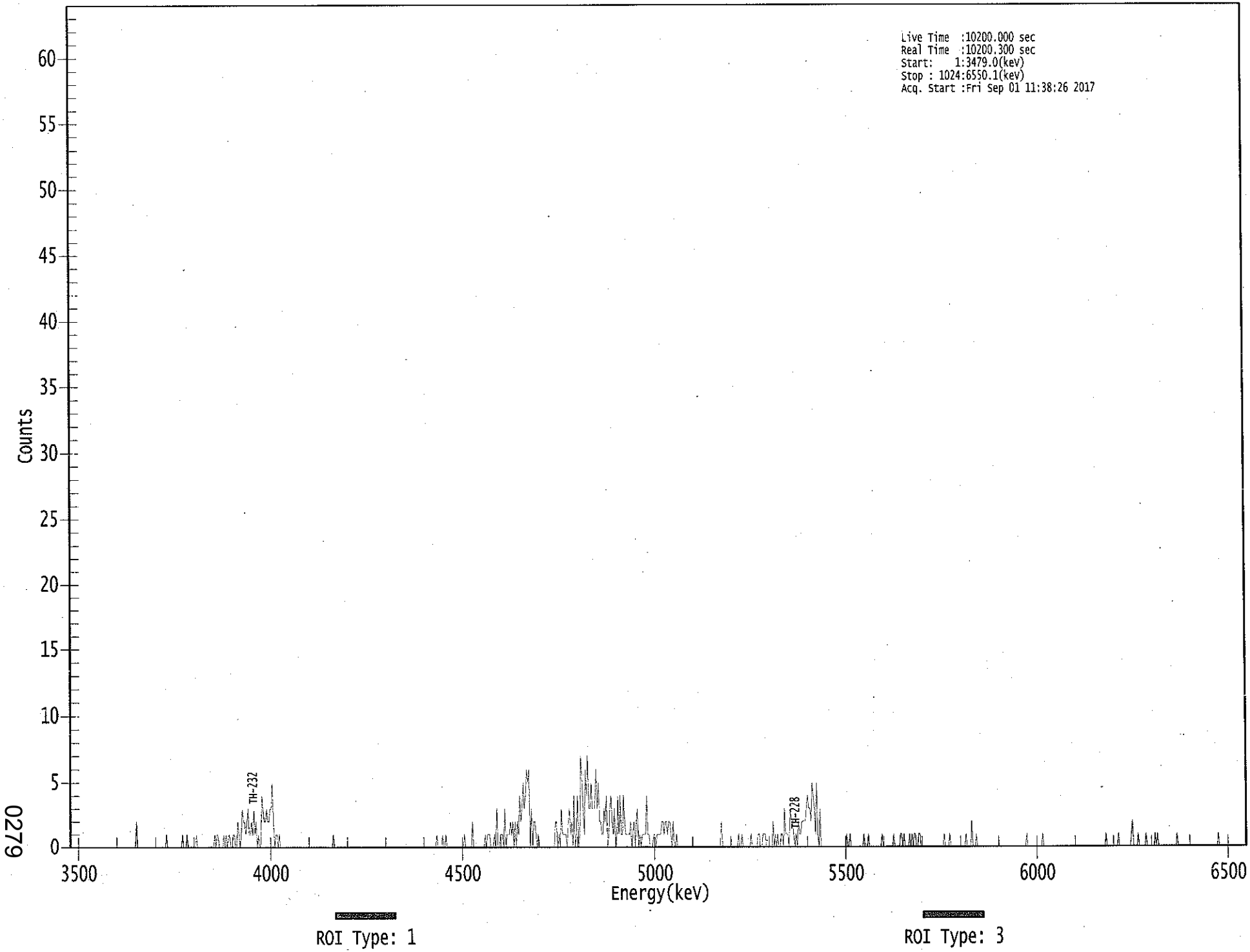
Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
TH-227		5.854	6.81	82.43	1.19	0.00E+000	3.0
TH-228		5.370	79.49	22.07	0.51	0.00E+000	9.3
TH-229	T	4.878	191.32	14.20	0.68	0.00E+000	7.0
TH-230		4.635	79.15	22.17	0.85	0.00E+000	13.5
TH-232		3.957	72.83	23.00	0.17	0.00E+000	10.0

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*	8.11E-002 +/- 6.80E-002	7.85E-002 +/- 1.21E-002
TH-228	0.995	5400.00*	1.02E+000 +/- 2.75E-001	6.73E-002 +/- 1.04E-002
TH-229	1.000	4872.00*	2.21E+000 +/- 3.42E-001	6.52E-002 +/- 1.01E-002
TH-230	0.993	4672.00*	9.12E-001 +/- 2.46E-001	6.90E-002 +/- 1.07E-002
TH-232	0.992	3997.00*	8.38E-001 +/- 2.32E-001	4.80E-002 +/- 7.42E-003

0000193371.CNF



0279

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

Sample Title: 13

Elapsed Live time: 10200
Elapsed Real Time: 10200

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

369:	1	0	3	0	0	1	1	1

Sample Title: 13

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

801:	0	0	0	0	0	0	0	0

Sample Title: 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	1
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	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	1	0	0	0
905:	0	0	0	0	0	0	0	1
913:	0	0	0	0	0	0	0	0
921:	0	0	1	2	0	0	0	0
929:	1	0	0	0	0	0	0	1
937:	0	0	0	0	0	0	0	1
945:	0	1	0	0	0	0	0	0
953:	0	0	0	0	0	0	0	0
961:	0	0	1	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	1	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™

VCB 9/1/17

Sample Description: HTC-A08-BKGD02-0612-01
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001933
Batch Identification: 1707091A-TH
Sample Identification: 14
Sample Geometry: Shelf 2
Procedure Description: Th iso

Detector Name: Alpha_045
Chamber Serial Number: 04026482A
Detector Serial Number: 91131
Env. Background: System Bkgd 194884
Reagent Blank: <not performed>

Sample Size: 1.030E+000 +/- 0.000E+000 gram
Sample Date/Time: 5/15/2017 6:48:22 AM
Acquisition Date/Time: 9/1/2017 11:38:28 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: 0.1743 +/- 0.0153
Counting Efficiency: 0.1688 +/- 0.0029 on 11/18/2016 10:08:40 AM
Chem. Recovery Factor: 1.0329 +/- 0.0922

Peak Match Tolerance: 0.175 MeV

PEAK AREA REPORT

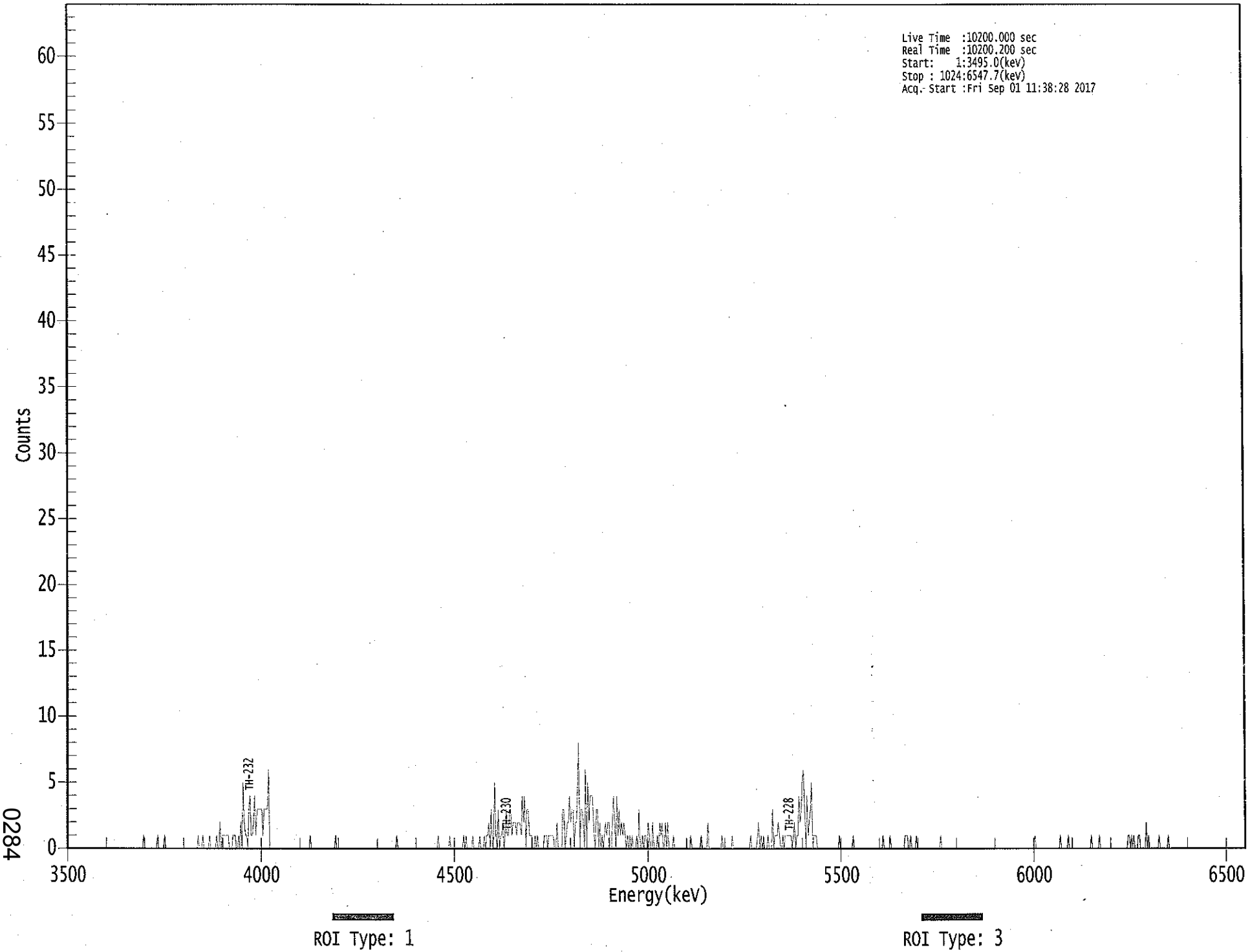
Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
TH-227		5.876	1.32	215.97	0.68	0.00E+000	3.0
TH-228		5.364	71.64	23.41	1.36	0.00E+000	9.0
TH-229	T	4.867	149.49	16.06	0.51	0.00E+000	5.5
TH-230		4.632	75.32	22.70	0.68	0.00E+000	3.7
TH-232		3.965	74.11	23.28	2.89	0.00E+000	4.5

T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.996	5850.00*	2.02E-002 +/- 4.37E-002	8.62E-002 +/- 1.48E-002
TH-228	0.993	5400.00*	1.18E+000 +/- 3.42E-001	1.13E-001 +/- 1.94E-002
TH-229	1.000	4872.00*	2.22E+000 +/- 3.81E-001	7.78E-002 +/- 1.34E-002
TH-230	0.992	4672.00*	1.11E+000 +/- 3.17E-001	8.34E-002 +/- 1.43E-002
TH-232	0.995	3997.00*	1.09E+000 +/- 3.16E-001	1.29E-001 +/- 2.22E-002

0000193362.CNF



0284

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

Sample Title: 14

Elapsed Live time: 10200
Elapsed Real Time: 10200

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

369:	0	1	5	1	0	3	0	1

Sample Title: 14

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

801:	0	0	0	0	0	0	0	0

Sample Title: 14

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

XP 9/1/17

Apex-Alpha™

Sample Description: HTC-A08-BKGD02-1218-01
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001933
Batch Identification: 1707091A-TH
Sample Identification: 15
Sample Geometry: Shelf 2
Procedure Description: Th iso

Detector Name: Alpha_046
Chamber Serial Number: 04026482B
Detector Serial Number: 58762
Env. Background: System Bkgd 194885
Reagent Blank: <not performed>

Sample Size: 1.009E+000 +/- 0.000E+000 gram
Sample Date/Time: 5/15/2017 6:48:22 AM
Acquisition Date/Time: 9/1/2017 11:38:31 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: 0.1773 +/- 0.0155
Counting Efficiency: 0.1713 +/- 0.0029 on 11/18/2016 10:08:38 AM
Chem. Recovery Factor: 1.0350 +/- 0.0919

Peak Match Tolerance: 0.175 MeV

PEAK AREA REPORT

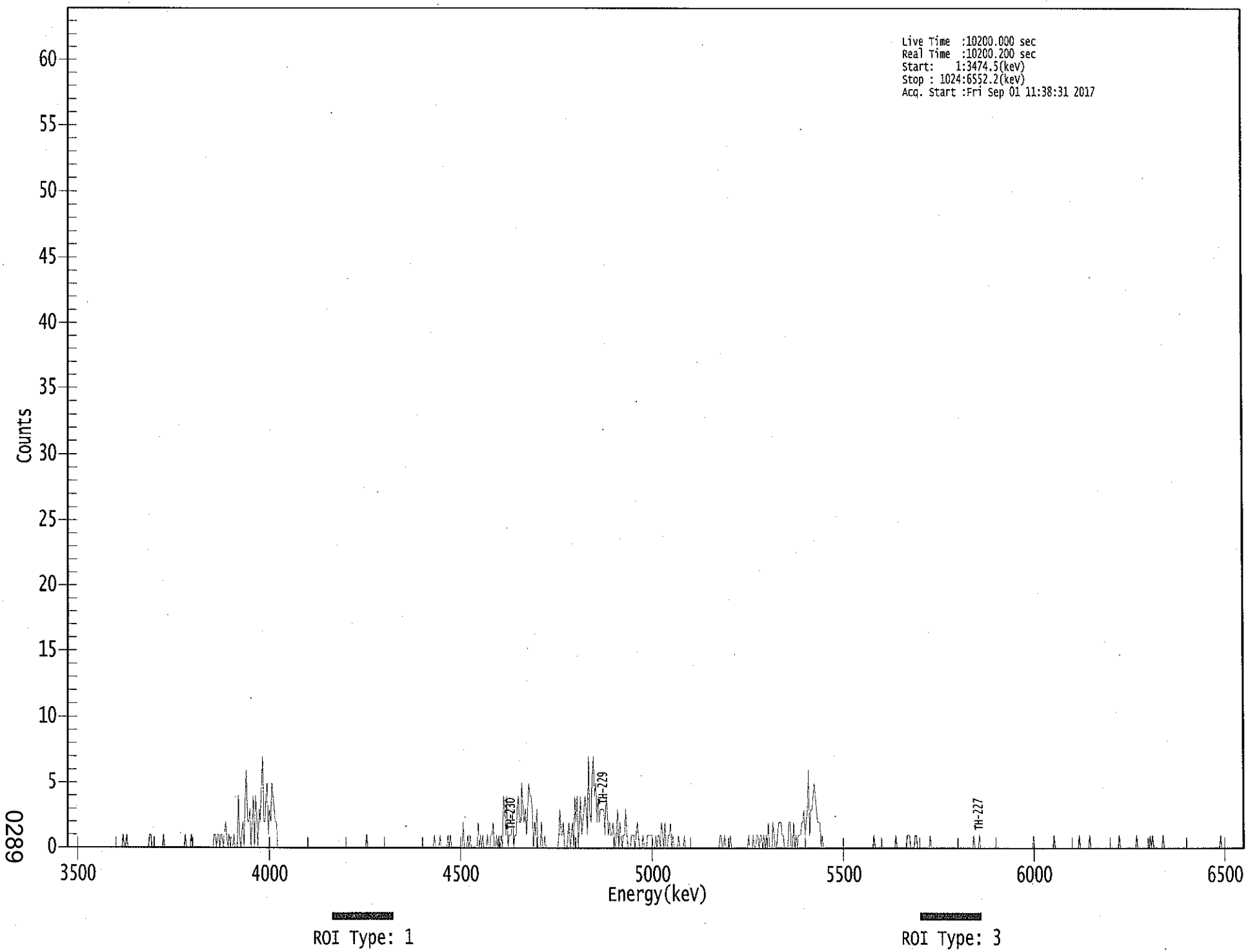
Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
TH-227		5.857	2.98	134.36	1.02	0.00E+000	3.0
TH-228		5.373	83.47	21.68	1.53	0.00E+000	4.8
TH-229	T	4.875	152.47	15.97	1.53	0.00E+000	4.4
TH-230		4.634	91.64	20.65	1.36	0.00E+000	7.0
TH-232		3.963	99.13	19.90	1.87	0.00E+000	6.6

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*	4.57E-002 +/- 6.19E-002	9.66E-002 +/- 1.65E-002
TH-228	0.996	5400.00*	1.38E+000 +/- 3.80E-001	1.17E-001 +/- 2.00E-002
TH-229	1.000	4872.00*	2.27E+000 +/- 3.87E-001	1.06E-001 +/- 1.81E-002
TH-230	0.993	4672.00*	1.36E+000 +/- 3.64E-001	1.02E-001 +/- 1.74E-002
TH-232	0.994	3997.00*	1.47E+000 +/- 3.85E-001	1.12E-001 +/- 1.91E-002

0000193363.CNF



0289

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

Sample Title: 15

Elapsed Live time: 10200
Elapsed Real Time: 10200

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

369:	1	2	0	0	1	0	1	0

Sample Title: 15

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

801:	0	0	0	0	0	0	0	0

Sample Title: 15

Channel								
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	1
841:	0	0	0	0	0	0	0	0
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	0	0	0	0	0	1
881:	0	0	0	0	0	0	0	0
889:	1	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0
913:	0	0	1	0	0	0	0	0
921:	0	0	0	0	0	0	0	0
929:	0	1	0	0	0	0	0	0
937:	0	0	0	0	0	1	0	1
945:	0	0	0	0	0	0	0	0
953:	1	0	0	0	0	0	0	0
961:	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	1	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 9/1/17

Sample Description: HTC-A08-BKGD02-1824-01
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001933
Batch Identification: 1707091A-TH
Sample Identification: 16
Sample Geometry: Shelf 2
Procedure Description: Th iso

Detector Name: Alpha_049
Chamber Serial Number: 10006121A
Detector Serial Number: 49
Env. Background: System Bkgd 194888
Reagent Blank: <not performed>

Sample Size: 1.033E+000 +/- 0.000E+000 gram
Sample Date/Time: 5/15/2017 6:48:22 AM
Acquisition Date/Time: 9/1/2017 1:16:58 PM
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: 0.1778 +/- 0.0154
Counting Efficiency: 0.1488 +/- 0.0026 on 11/18/2016 3:34:20 PM
Chem. Recovery Factor: 1.1948 +/- 0.1058

Peak Match Tolerance: 0.175 MeV

PEAK AREA REPORT

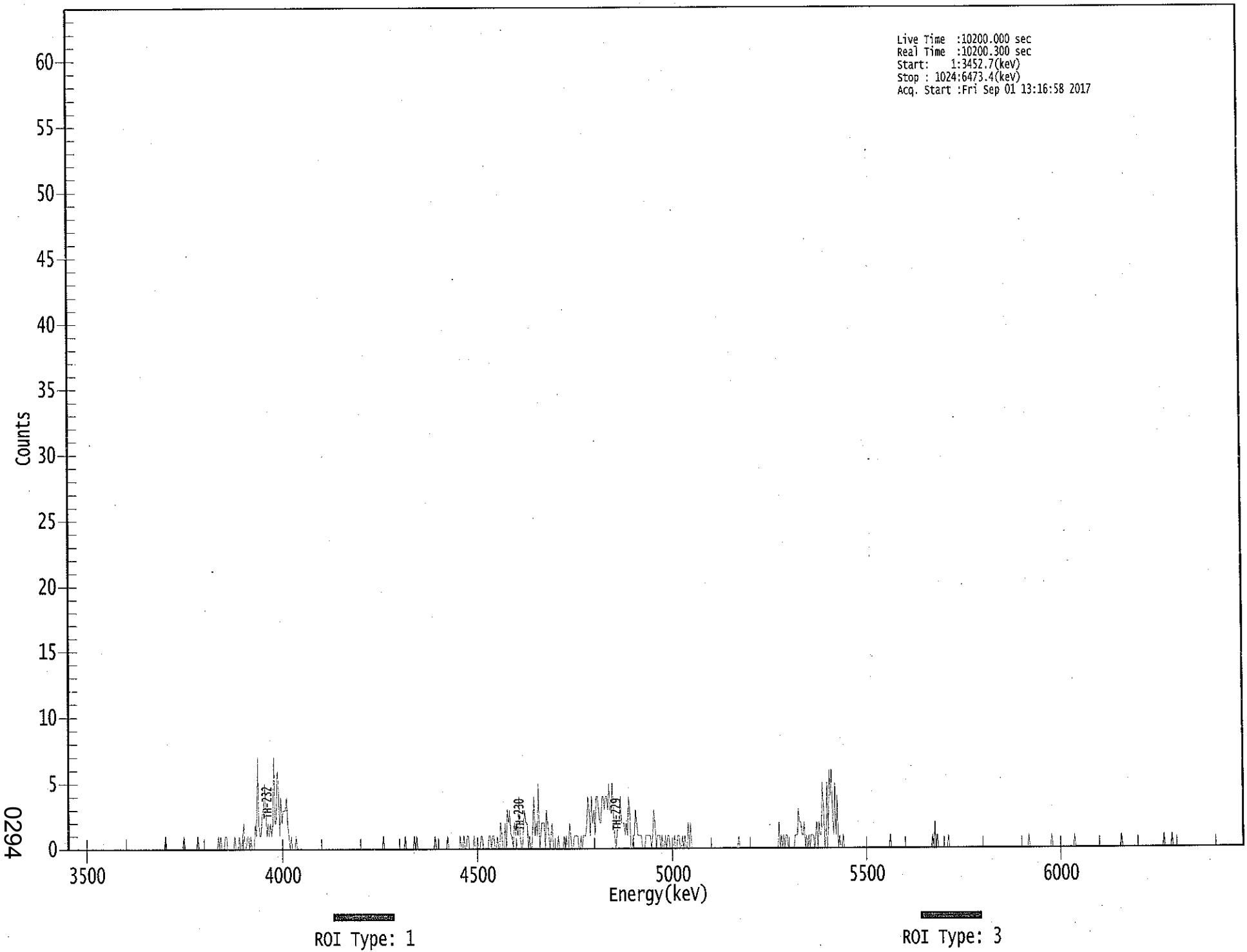
Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
TH-227		5.911	3.83	102.72	0.17	0.00E+000	3.0
TH-228		5.375	77.98	22.36	1.02	0.00E+000	9.9
TH-229	T	4.859	152.49	15.90	0.51	0.00E+000	32.5
TH-230		4.609	81.64	21.90	1.36	0.00E+000	3.3
TH-232		3.965	95.83	20.04	0.17	0.00E+000	3.8

T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.981	5850.00*	5.72E-002 +/- 5.96E-002	6.23E-002 +/- 1.06E-002
TH-228	0.997	5400.00*	1.25E+000 +/- 3.53E-001	1.01E-001 +/- 1.73E-002
TH-229	0.999	4872.00*	2.21E+000 +/- 3.76E-001	7.61E-002 +/- 1.30E-002
TH-230	0.980	4672.00*	1.18E+000 +/- 3.27E-001	9.91E-002 +/- 1.69E-002
TH-232	0.995	3997.00*	1.38E+000 +/- 3.64E-001	6.02E-002 +/- 1.03E-002

0000193382.CNF



0294

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

Sample Title: 16

Elapsed Live time: 10200
Elapsed Real Time: 10200

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

369:	1	1	0	0	1	0	0	2

Sample Title: 16

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

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

Apex-Alpha™

KB 9/1/17

Sample Description: HTC-08-BKGD02-2430-01
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001933
Batch Identification: 1707091A-TH
Sample Identification: 17
Sample Geometry: Shelf 2
Procedure Description: Th iso

Detector Name: Alpha_050
Chamber Serial Number: 10006121B
Detector Serial Number: 50
Env. Background: System Bkgd 194889
Reagent Blank: <not performed>

Sample Size: 1.041E+000 +/- 0.000E+000 gram
Sample Date/Time: 5/15/2017 6:48:22 AM
Acquisition Date/Time: 9/1/2017 1:17:00 PM
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: 0.1741 +/- 0.0153
Counting Efficiency: 0.1433 +/- 0.0025 on 11/18/2016 3:34:18 PM
Chem. Recovery Factor: 1.2152 +/- 0.1089

Peak Match Tolerance: 0.175 MeV

PEAK AREA REPORT

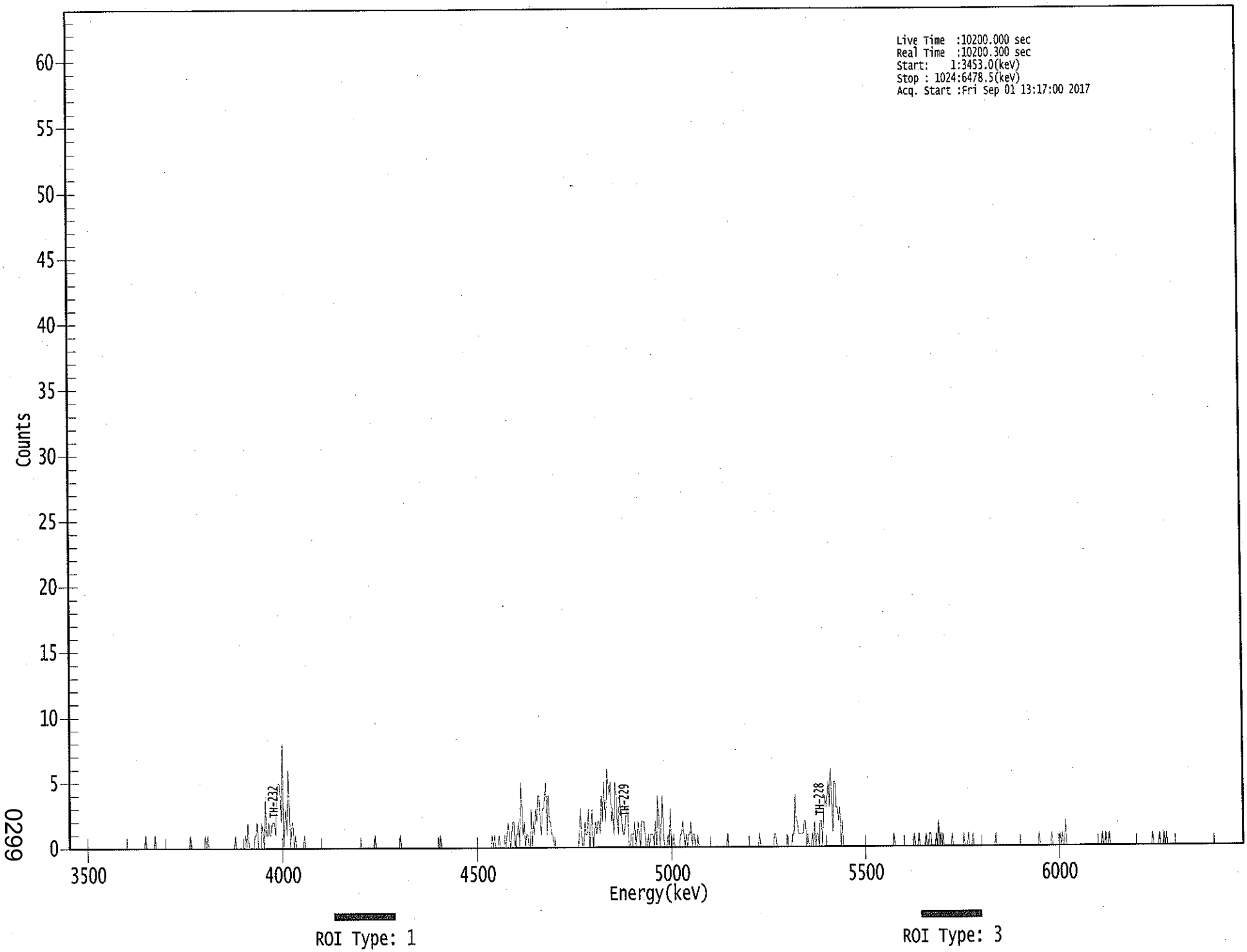
Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
TH-227		5.878	11.15	61.26	0.85	0.00E+000	3.0
TH-228		5.385	86.11	21.53	2.89	0.00E+000	6.9
TH-229	T	4.883	149.47	16.13	1.53	0.00E+000	13.1
TH-230		4.641	75.28	23.06	2.72	0.00E+000	5.2
TH-232		3.980	77.64	22.47	1.36	0.00E+000	3.5

T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.996	5850.00*	1.69E-001 +/- 1.07E-001	9.06E-002 +/- 1.56E-002
TH-228	0.999	5400.00*	1.40E+000 +/- 3.87E-001	1.43E-001 +/- 2.46E-002
TH-229	0.999	4872.00*	2.20E+000 +/- 3.78E-001	1.04E-001 +/- 1.80E-002
TH-230	0.995	4672.00*	1.10E+000 +/- 3.17E-001	1.26E-001 +/- 2.16E-002
TH-232	0.999	3997.00*	1.13E+000 +/- 3.21E-001	1.00E-001 +/- 1.73E-002

0000193383.CNF



0299

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

Sample Title: 17

Elapsed Live time: 10200
Elapsed Real Time: 10200

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

369:	0	1	0	0	0	1	0	0

Sample Title: 17

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

801:	0	0	0	0	0	0	1	0

Sample Title: 17

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	1	0	0	0
849:	0	0	0	0	0	0	0	1
857:	0	0	0	0	0	0	1	0
865:	1	0	0	2	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	1	0	0	1	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	1
945:	0	0	0	0	0	1	0	0
953:	0	1	0	1	0	0	0	0
961:	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

KD 9/1/17

Apex-Alpha™

Sample Description: HTC-A08-BKGD02-3036-01
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001933
Batch Identification: 1707091A-TH
Sample Identification: 18
Sample Geometry: Shelf 2
Procedure Description: Th iso

Detector Name: Alpha_052
Chamber Serial Number: 10006123B
Detector Serial Number: 52
Env. Background: System Bkgd 194890
Reagent Blank: <not performed>

Sample Size: 1.015E+000 +/- 0.000E+000 gram
Sample Date/Time: 5/15/2017 6:48:22 AM
Acquisition Date/Time: 9/1/2017 1:17:02 PM
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: 0.1066 +/- 0.0116
Counting Efficiency: 0.1737 +/- 0.0030 on 11/18/2016 3:34:15 PM
Chem. Recovery Factor: 0.6135 +/- 0.0675

Peak Match Tolerance: 0.175 MeV

PEAK AREA REPORT

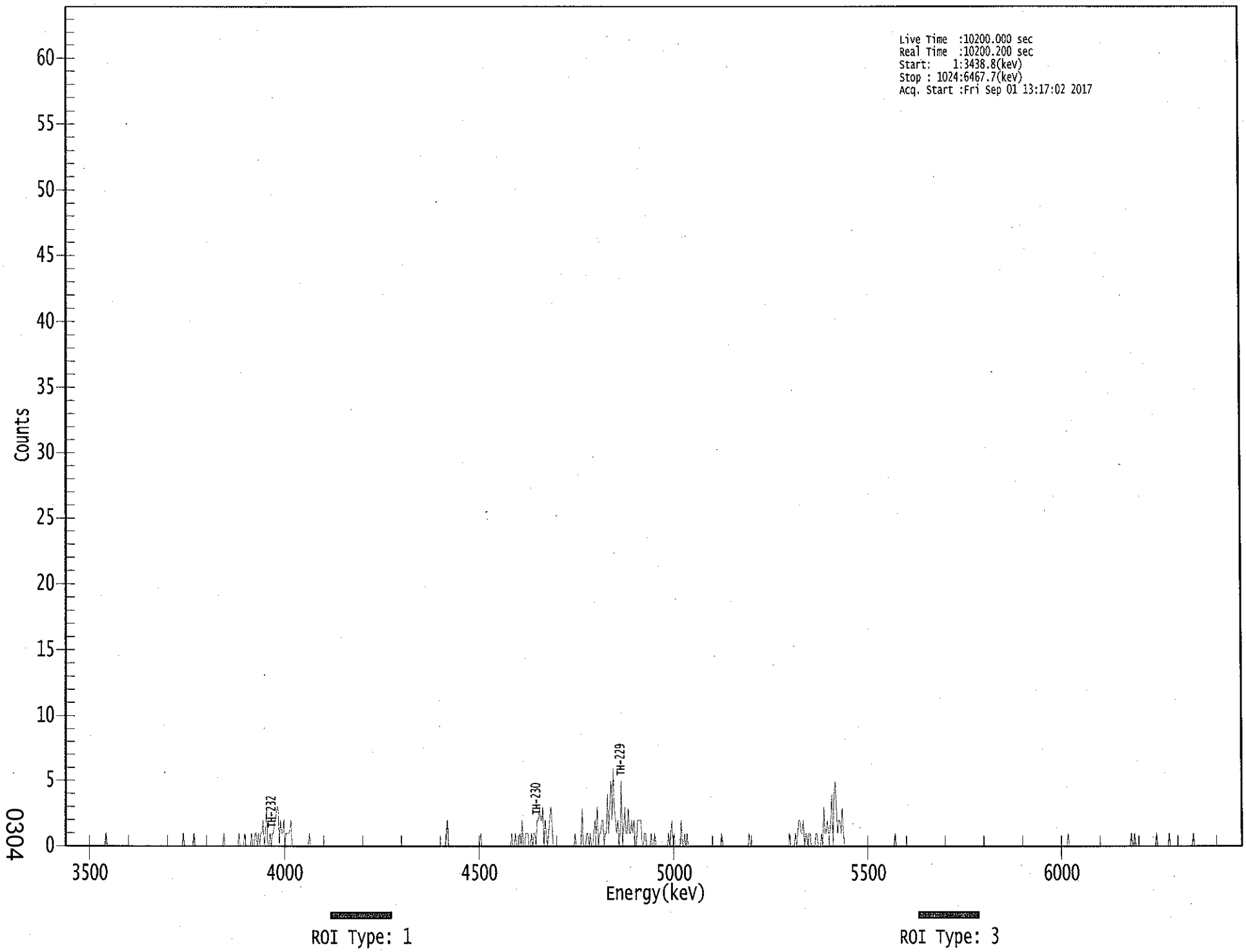
Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
TH-227		6.018	0.83	239.53	0.17	0.00E+000	3.0
TH-228		5.384	54.81	26.81	1.19	0.00E+000	7.8
TH-229	T	4.866	93.15	20.42	0.85	0.00E+000	5.2
TH-230		4.649	36.32	32.88	0.68	0.00E+000	17.0
TH-232		3.968	40.66	30.89	0.34	0.00E+000	3.7

T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.863	5850.00*	2.10E-002 +/- 5.06E-002	1.06E-001 +/- 2.25E-002
TH-228	0.999	5400.00*	1.50E+000 +/- 5.12E-001	1.80E-001 +/- 3.83E-002
TH-229	1.000	4872.00*	2.29E+000 +/- 4.88E-001	1.47E-001 +/- 3.14E-002
TH-230	0.997	4672.00*	8.91E-001 +/- 3.49E-001	1.38E-001 +/- 2.95E-002
TH-232	0.996	3997.00*	9.96E-001 +/- 3.74E-001	1.17E-001 +/- 2.49E-002

0000193381.CNF



0304

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

Sample Title: 18

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

369:	0	0	0	0	0	0	0	0

Sample Title: 18

Channel								
377:	0	0	0	0	0	0	0	0
385:	0	0	0	1	0	0	1	0
393:	0	0	1	0	2	0	0	1
401:	1	1	0	0	1	0	1	1
409:	0	2	2	3	2	2	3	0
417:	2	1	0	1	2	3	2	0
425:	0	0	0	0	0	0	0	0
433:	0	0	0	0	0	0	0	0
441:	0	0	1	0	0	0	0	0
449:	3	0	0	0	1	1	0	1
457:	0	0	1	2	1	3	0	1
465:	1	2	2	0	1	1	4	1
473:	3	5	2	6	3	2	1	2
481:	0	1	5	0	1	3	1	1
489:	3	1	1	2	1	2	0	0
497:	2	2	2	2	0	0	1	1
505:	0	0	0	0	1	0	0	1
513:	0	0	0	0	0	0	0	0
521:	0	0	0	1	0	1	2	0
529:	1	0	0	0	0	0	2	0
537:	0	1	0	1	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	1	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	1	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	1	0	0	0
633:	0	1	0	1	2	2	1	1
641:	2	0	1	1	0	1	1	0
649:	0	0	0	1	1	0	0	0
657:	1	0	3	1	1	2	1	1
665:	2	4	0	4	5	3	1	2
673:	2	1	3	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	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0
713:	0	0	0	0	0	0	0	0
721:	1	0	0	0	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: 18

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

Apex-Alpha™

KB 9/1/17

Sample Description: HTC-A08-BKGD02-3642-01
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001933
Batch Identification: 1707091A-TH
Sample Identification: 19
Sample Geometry: Shelf 2
Procedure Description: Th iso

Detector Name: Alpha_003
Chamber Serial Number:
Detector Serial Number: 3
Env. Background: System Bkgd 194868
Reagent Blank: <not performed>

Sample Size: 1.029E+000 +/- 0.000E+000 gram
Sample Date/Time: 5/15/2017 6:48:22 AM
Acquisition Date/Time: 9/1/2017 2:09:24 PM
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: 0.2231 +/- 0.0176
Counting Efficiency: 0.1562 +/- 0.0027 on 11/19/2016 1:08:16 PM
Chem. Recovery Factor: 1.4281 +/- 0.1152

Peak Match Tolerance: 0.175 MeV

PEAK AREA REPORT

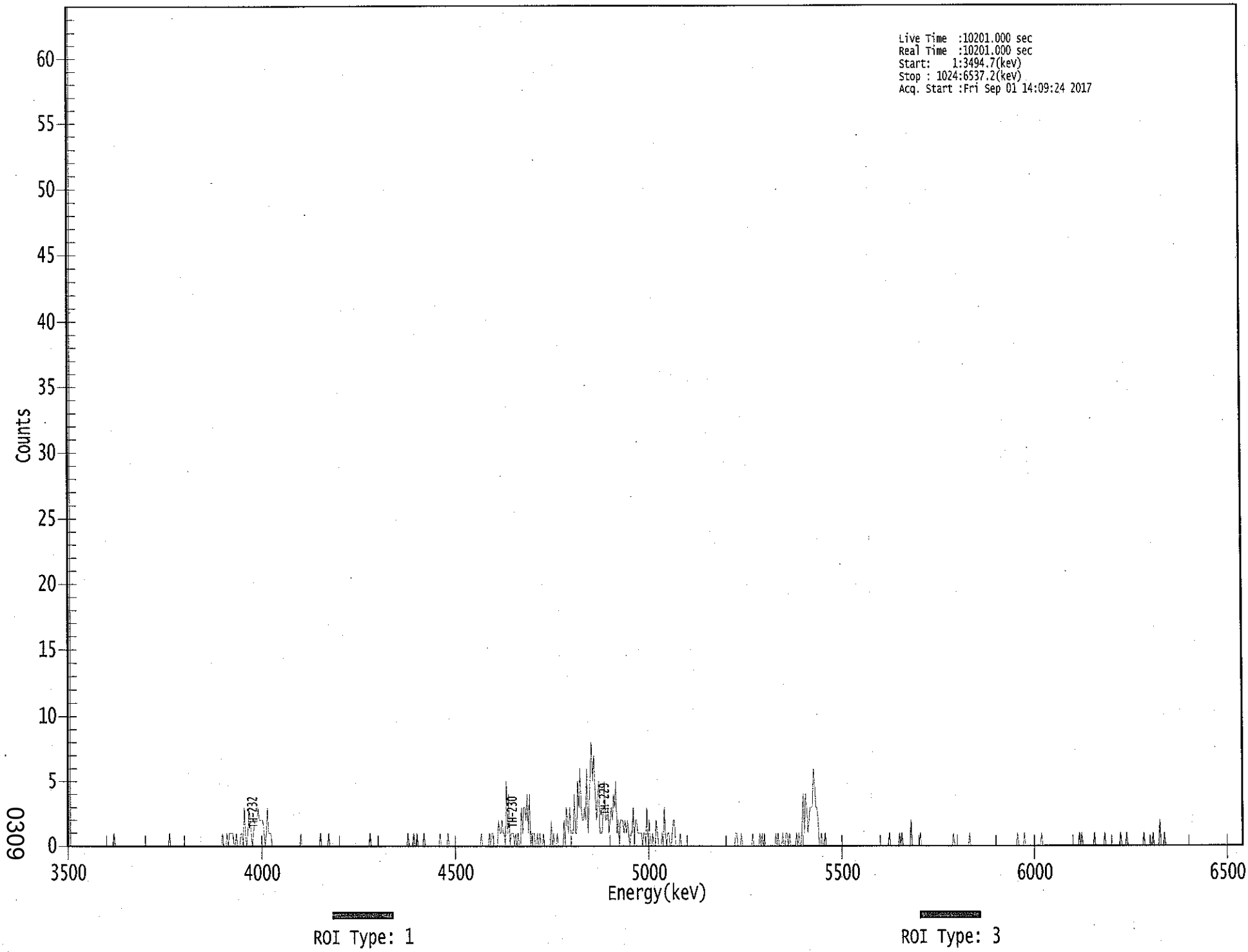
Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
TH-227		5.874	4.81	101.48	1.19	0.00E+000	3.0
TH-228		5.389	59.47	25.80	1.53	0.00E+000	8.9
TH-229	T	4.883	192.00	14.18	0.00	0.00E+000	13.9
TH-230		4.646	54.64	26.90	1.36	0.00E+000	3.3
TH-232		3.973	46.49	28.93	0.51	0.00E+000	3.7

T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.997	5850.00*	5.75E-002 +/- 5.90E-002	7.87E-002 +/- 1.21E-002
TH-228	0.999	5400.00*	7.65E-001 +/- 2.30E-001	9.15E-002 +/- 1.41E-002
TH-229	0.999	4872.00*	2.23E+000 +/- 3.43E-001	6.95E-002 +/- 1.07E-002
TH-230	0.996	4672.00*	6.32E-001 +/- 1.96E-001	7.93E-002 +/- 1.22E-002
TH-232	0.997	3997.00*	5.36E-001 +/- 1.76E-001	6.05E-002 +/- 9.34E-003

0000193385.CNF



0309

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

Sample Title: 19

Elapsed Live time: 10201
Elapsed Real Time: 10201

Channel								
1:	10201	10201	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0
41:	1	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0
65:	0	0	0	0	0	0	0	0
73:	0	0	0	0	0	0	0	0
81:	0	0	0	0	0	0	0	0
89:	1	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	1	0
137:	0	0	1	0	1	1	1	1
145:	0	0	1	0	0	0	1	1
153:	0	3	1	0	1	3	2	1
161:	0	1	2	2	2	3	2	2
169:	2	2	1	0	1	3	1	1
177:	1	0	0	0	0	0	0	0
185:	0	0	0	0	0	0	0	0
193:	0	0	0	0	0	0	0	0
201:	0	0	1	0	0	0	0	0
209:	0	0	0	0	0	0	0	0
217:	0	0	0	1	0	0	0	0
225:	0	0	1	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:	0	0	0	0	0	0	0	0
281:	0	0	0	0	0	0	0	0
289:	0	0	0	0	0	0	0	1
297:	0	0	0	0	1	0	0	1
305:	0	0	0	0	0	1	0	0
313:	0	0	0	0	0	0	0	0
321:	0	0	0	1	0	0	0	0
329:	0	0	1	0	0	0	0	0
337:	0	0	0	0	0	0	0	0
345:	0	0	0	0	0	0	0	0
353:	0	0	0	0	0	0	0	1
361:	0	0	0	0	0	0	1	0

369:	1	1	0	0	0	0	2	1

Sample Title: 19

Channel								
377:	1	2	1	1	0	5	1	4
385:	0	1	1	1	0	1	0	1
393:	0	0	3	1	3	3	2	4
401:	1	4	0	1	1	1	0	0
409:	1	0	1	0	0	1	0	0
417:	0	0	0	0	2	0	1	0
425:	0	1	0	0	0	0	0	2
433:	0	3	2	1	3	1	1	1
441:	4	1	1	5	3	6	3	2
449:	2	3	2	6	1	3	6	8
457:	5	7	4	2	4	5	1	1
465:	1	3	5	2	2	3	1	2
473:	3	2	4	3	5	1	2	0
481:	2	2	2	1	2	1	2	1
489:	0	1	1	3	0	2	2	1
497:	1	1	1	0	1	1	0	3
505:	0	2	0	0	1	0	0	2
513:	1	0	0	0	1	0	3	1
521:	0	1	1	0	0	1	2	2
529:	0	0	0	0	1	0	0	0
537:	0	0	0	0	0	0	0	0
545:	0	0	0	0	0	0	0	0
553:	0	0	0	0	0	0	0	0
561:	0	0	0	0	0	0	0	0
569:	0	0	0	0	0	0	0	0
577:	0	0	0	0	1	1	0	0
585:	0	1	0	0	0	0	0	0
593:	0	0	0	1	0	0	0	0
601:	0	1	0	1	0	1	0	0
609:	0	0	0	0	0	0	0	1
617:	0	1	0	0	0	1	0	0
625:	1	1	0	1	0	0	0	0
633:	0	1	0	1	0	0	2	4
641:	1	4	3	1	2	3	3	3
649:	6	5	3	3	2	0	0	1
657:	0	0	1	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	1	0	0	0	0	0
721:	0	0	0	1	0	1	0	0
729:	0	0	0	0	0	2	0	0
737:	0	0	0	0	0	1	0	0
745:	0	0	0	0	0	0	0	0
753:	0	0	0	0	0	0	0	0
761:	0	0	0	0	0	0	0	0
769:	0	0	1	0	0	0	0	0
777:	0	0	0	0	0	0	0	0
785:	1	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: 19

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

Apex-Alpha™

KB 9/1/17

Sample Description: HTC-A08-BKGD02-4248-01
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001933
Batch Identification: 1707091A-TH
Sample Identification: 20
Sample Geometry: Shelf 2
Procedure Description: Th iso

Detector Name: Alpha_004
Chamber Serial Number:
Detector Serial Number: 4
Env. Background: System Bkgd 194869
Reagent Blank: <not performed>

Sample Size: 1.008E+000 +/- 0.000E+000 gram
Sample Date/Time: 5/15/2017 6:48:22 AM
Acquisition Date/Time: 9/1/2017 2:09:25 PM
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: 0.1653 +/- 0.0149
Counting Efficiency: 0.1883 +/- 0.0032 on 11/19/2016 1:08:17 PM
Chem. Recovery Factor: 0.8777 +/- 0.0803

Peak Match Tolerance: 0.175 MeV

PEAK AREA REPORT

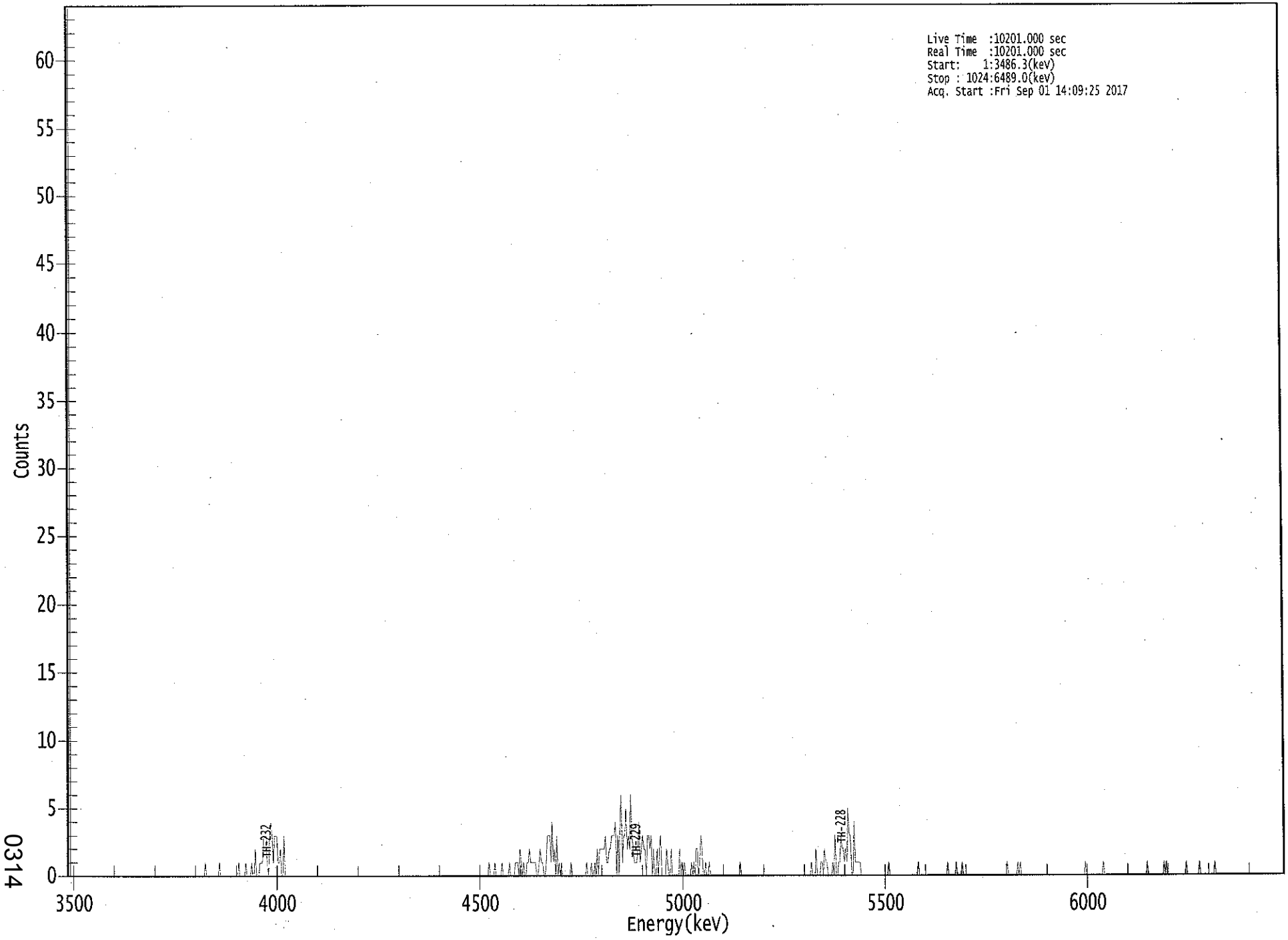
Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
TH-227		5.900	4.66	94.59	0.34	0.00E+000	2.9
TH-228		5.393	44.64	29.85	1.36	0.00E+000	8.2
TH-229	T	4.886	141.81	16.54	1.19	0.00E+000	5.4
TH-230		4.644	47.64	28.87	1.36	0.00E+000	3.9
TH-232		3.975	46.49	28.93	0.51	0.00E+000	8.3

T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/gram)	MDA (pCi/gram)
TH-227	0.987	5850.00*	7.67E-002 +/- 7.38E-002	7.87E-002 +/- 1.39E-002
TH-228	1.000	5400.00*	7.92E-001 +/- 2.74E-001	1.22E-001 +/- 2.14E-002
TH-229	0.999	4872.00*	2.27E+000 +/- 3.99E-001	1.05E-001 +/- 1.85E-002
TH-230	0.996	4672.00*	7.59E-001 +/- 2.57E-001	1.09E-001 +/- 1.92E-002
TH-232	0.998	3997.00*	7.39E-001 +/- 2.50E-001	8.34E-002 +/- 1.47E-002

0000193384.CNF



ROI Type: 1

ROI Type: 3

0314

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

Sample Title: 20

Elapsed Live time: 10201
Elapsed Real Time: 10201

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

369:	0	0	1	0	0	0	0	1

Sample Title: 20

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

801:	1	0	0	0	0	0	0	0

Sample Title: 20

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	1
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	1	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	1	0	0	0	0
913:	0	0	0	0	0	0	0	0
921:	0	1	0	1	0	0	0	0
929:	0	0	0	0	0	0	0	0
937:	0	0	0	0	1	0	0	0
945:	0	0	0	0	0	0	0	1
953:	0	0	0	0	0	0	0	0
961:	0	0	0	0	1	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

Apex-Alpha™

QA SUMMARY REPORT

Review Of QA Results - Pulser Check

Date : 9/1/2017
Time : 5:34:06 AM

CHAMBER	DEVICE	PARAMETER	FLAG	DATE
Alpha_001	21f	ALL	Not Done	
Alpha_002	21f	ALL	Not Done	
Alpha_003	21f	ALL	Passed	9/1/2017 4:59:44 AM
Alpha_004	21f	ALL	Passed	9/1/2017 4:59:44 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	9/1/2017 4:59:45 AM
Alpha_011	21f	ALL	Passed	9/1/2017 4:59:46 AM
Alpha_012	21f	ALL	Passed	9/1/2017 4:59:47 AM
Alpha_013	21f	ALL	Not Done	
Alpha_014	21f	ALL	Passed	9/1/2017 4:59:48 AM
Alpha_015	21f	ALL	Not Done	
Alpha_016	21f	ALL	Not Done	
Alpha_033	Alpha Analyst100DC	ALL	Passed	9/1/2017 4:59:49 AM
Alpha_034	Alpha Analyst100DC	ALL	Passed	9/1/2017 4:59:51 AM
Alpha_035	Alpha Analyst100DC	ALL	Passed	9/1/2017 4:59:53 AM
Alpha_036	Alpha Analyst100DC	ALL	Passed	9/1/2017 4:59:54 AM
Alpha_037	Alpha Analyst100DC	ALL	Passed	9/1/2017 4:59:56 AM
Alpha_038	Alpha Analyst100DC	Peak Energy	Action	9/1/2017 4:59:58 AM
Alpha_039	Alpha Analyst100DC	ALL	Passed	9/1/2017 5:00:00 AM
Alpha_040	Alpha Analyst100DC	Peak FWHM	Action	9/1/2017 5:00:02 AM
Alpha_041	Alpha Analyst100DC	ALL	Not Done	
Alpha_042	Alpha Analyst100DC	ALL	Not Done	
Alpha_043	Alpha Analyst100DC	ALL	Passed	9/1/2017 5:00:04 AM
Alpha_044	Alpha Analyst100DC	ALL	Passed	9/1/2017 5:00:06 AM
Alpha_045	Alpha Analyst100DC	ALL	Passed	9/1/2017 5:00:08 AM
Alpha_046	Alpha Analyst100DC	ALL	Passed	9/1/2017 5:00:11 AM
Alpha_047	Alpha Analyst100DC	ALL	Passed	9/1/2017 5:00:13 AM
Alpha_048	Alpha Analyst100DC	ALL	Passed	9/1/2017 5:00:16 AM
Alpha_049	Alpha Analyst100DC	ALL	Passed	9/1/2017 5:00:18 AM
Alpha_050	Alpha Analyst100DC	ALL	Passed	9/1/2017 5:00:21 AM
Alpha_051	Alpha Analyst100DC	ALL	Not Done	
Alpha_052	Alpha Analyst100DC	ALL	Passed	9/1/2017 5:00:24 AM
Alpha_053	Alpha Analyst100DC	ALL	Passed	9/1/2017 5:00:26 AM
Alpha_054	Alpha Analyst100DC	ALL	Passed	9/1/2017 5:00:29 AM
Alpha_055	Alpha Analyst100DC	ALL	Not Done	
Alpha_056	Alpha Analyst100DC	ALL	Passed	9/1/2017 5:00:32 AM
Alpha_057	Alpha Analyst100DC	ALL	Passed	9/1/2017 5:00:35 AM
Alpha_058	Alpha Analyst100DC	ALL	Passed	9/1/2017 5:00:38 AM

9/1/2017 5:34:06 AM

CHAMBER	DEVICE	PARAMETER	FLAG	DATE
Alpha_059	Alpha Analyst100DC	ALL	Passed	9/1/2017 5:00:41 AM
Alpha_060	Alpha Analyst100DC	ALL	Passed	9/1/2017 5:00:44 AM

APPROVED BY: _____

APPROVAL DATE: 9/1/17

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

Nuclide Library Title: Thorium

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

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

* = key line

TOTALS: 5 Nuclides 5 Energy Lines

SECTION X

ANALYTICAL DATA (GAMMA SPECTROSCOPY)

17-07091
Gamma
Run 2

Work Order	17-07091
Analysis Code	Gamma
Run	2
Date Received	7/18/2017
Lab Deadline	8/10/2017
Client	Weston Solutions, Inc.
Project	94759
Report Level	4
Activity Units	pCi
Aliquot Units	g
Matrix	SO
Method	EPA 901.1 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		07/19/17 00:00	1.0000E+00
02	MBL	BLANK		07/19/17 00:00	1.0000E+00
03	DUP	HTC-A08-BKGD01-0006-01	46	05/15/17 16:41	5.8458E+02
04	DO	HTC-A08-BKGD01-0006-01	46	05/15/17 16:41	5.8458E+02
07	TRG	HTC-A08-BKGD01-1218-01	41	05/15/17 16:35	6.5995E+02
08	TRG	HTC-A08-BKGD01-1824-01	30	05/15/17 16:32	6.4477E+02
09	TRG	HTC-A08-BKGD01-2430-01	34	05/15/17 16:29	6.4793E+02
10	TRG	HTC-A08-BKGD01-3036-01	44	05/15/17 16:26	6.7022E+02
11	TRG	HTC-A08-BKGD01-3642-01	43	05/15/17 16:23	6.5346E+02
12	TRG	HTC-A08-BKGD01-4248-01	30	05/15/17 16:20	6.8415E+02
13	TRG	HTC-A08-BKGD02-0006-01	47	05/15/17 15:56	6.4075E+02
14	TRG	HTC-A08-BKGD02-0612-01	38	05/15/17 15:53	5.8464E+02
15	TRG	HTC-A08-BKGD02-1218-01	47	05/15/17 15:50	5.8630E+02
16	TRG	HTC-A08-BKGD02-1824-01	38	05/15/17 15:47	6.7257E+02
17	TRG	HTC-A08-BKGD02-2430-01	40	05/15/17 15:44	6.5550E+02
18	TRG	HTC-A08-BKGD02-3036-01	32	05/15/17 15:41	6.7550E+02
19	TRG	HTC-A08-BKGD02-3642-01	33	05/15/17 15:38	8.0184E+02
20	TRG	HTC-A08-BKGD02-4248-01	43	05/15/17 15:35	7.8246E+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.

17-07091
Gamma
Run 2

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								
07	TRG				0.00								
08	TRG				0.00								
09	TRG				0.00								
10	TRG				0.00								
11	TRG				0.00								
12	TRG				0.00								
13	TRG				0.00								
14	TRG				0.00								
15	TRG				0.00								
16	TRG				0.00								
17	TRG				0.00								
18	TRG				0.00								
19	TRG				0.00								
20	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.

17-07091
Gamma
Run 2

Internal Fraction	Sample Desc	Rough Prep Date	Rough Prep By	Prep Date	Prep By	Sep t0 Date/Time	Sep t0 By	Sep t1 Date/Time	Sep t1 By
01	LCS								
02	MBL								
03	DUP								
04	DO	08/03/17 06:56	KSALLINGS						
07	TRG	08/03/17 06:56	KSALLINGS						
08	TRG	08/03/17 06:56	KSALLINGS						
09	TRG	08/03/17 06:56	KSALLINGS						
10	TRG	08/03/17 06:56	KSALLINGS						
11	TRG	08/03/17 06:56	KSALLINGS						
12	TRG	08/03/17 06:56	KSALLINGS						
13	TRG	08/03/17 06:56	KSALLINGS						
14	TRG	08/03/17 06:56	KSALLINGS						
15	TRG	08/03/17 06:56	KSALLINGS						
16	TRG	08/03/17 06:56	KSALLINGS						
17	TRG	08/03/17 06:56	KSALLINGS						
18	TRG	08/03/17 06:56	KSALLINGS						
19	TRG	08/03/17 06:56	KSALLINGS						
20	TRG	08/03/17 06:56	KSALLINGS						

0324

* 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: 17-07091-Gamma-2

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	1.22E+02	7.38E+00	1.23E+00	1.35E+02	90.05	OK		07/19/17 00:00	1.00E+00	08/24/17 11:57	YES
01	CS-137	LCS	LCS	pCi/g	8.09E+01	9.89E+00	1.61E+00	8.44E+01	95.89	OK		07/19/17 00:00	1.00E+00	08/24/17 11:57	YES
02	AC-228	MBL	BLANK	pCi/g	1.59E-03	1.22E-01	1.80E-01					07/19/17 00:00	1.00E+00	08/24/17 12:29	NO
02	BI-212	MBL	BLANK	pCi/g	6.39E-02	2.49E-01	3.99E-01					07/19/17 00:00	1.00E+00	08/24/17 12:29	NO
02	BI-214	MBL	BLANK	pCi/g	2.90E-02	5.85E-02	9.82E-02					07/19/17 00:00	1.00E+00	08/24/17 12:29	NO
02	CS-137	MBL	BLANK	pCi/g	6.94E-03	3.33E-02	5.67E-02					07/19/17 00:00	1.00E+00	08/24/17 12:29	NO
02	K-40	MBL	BLANK	pCi/g	-1.19E-01	3.20E-01	4.52E-01					07/19/17 00:00	1.00E+00	08/24/17 12:29	NO
02	PA-234M	MBL	BLANK	pCi/g	2.17E+00	2.29E+00	5.22E+00					07/19/17 00:00	1.00E+00	08/24/17 12:29	NO
02	PB-212	MBL	BLANK	pCi/g	-7.69E-03	3.69E-02	5.47E-02					07/19/17 00:00	1.00E+00	08/24/17 12:29	NO
02	PB-214	MBL	BLANK	pCi/g	2.94E-02	5.06E-02	8.56E-02					07/19/17 00:00	1.00E+00	08/24/17 12:29	NO
02	RA-224	MBL	BLANK	pCi/g	2.40E-01	3.80E-01	6.36E-01					07/19/17 00:00	1.00E+00	08/24/17 12:29	NO
02	RA-226	MBL	BLANK	pCi/g	2.90E-02	5.85E-02	9.82E-02					07/19/17 00:00	1.00E+00	08/24 12:29	NO
02	RA-228	MBL	BLANK	pCi/g	1.59E-03	1.22E-01	1.80E-01					07/19/17 00:00	1.00E+00	08/24/17 12:29	NO
02	TH-234	MBL	BLANK	pCi/g	6.17E-01	3.99E-01	6.79E-01					07/19/17 00:00	1.00E+00	08/24/17 12:29	NO
02	TL-208	MBL	BLANK	pCi/g	1.55E-02	6.37E-02	1.12E-01					07/19/17 00:00	1.00E+00	08/24/17 12:29	NO
03	AC-228	DUP	HTC-A08-BKGD01-0006-01	pCi/g	1.09E+00	3.21E-01	9.45E-01					05/15/17 16:41	5.85E+02	08/24/17 08:20	YES
03	BI-212	DUP	HTC-A08-BKGD01-0006-01	pCi/g	7.69E-01	5.56E-01	8.70E-01					05/15/17 16:41	5.85E+02	08/24/17 08:20	YES
03	BI-214	DUP	HTC-A08-BKGD01-0006-01	pCi/g	9.80E-01	1.92E-01	4.97E-01					05/15/17 16:41	5.85E+02	08/24/17 08:20	YES
03	CS-137	DUP	HTC-A08-BKGD01-0006-01	pCi/g	1.78E-01	1.08E-01	1.69E-01					05/15/17 16:41	5.85E+02	08/24/17 08:20	YES
03	K-40	DUP	HTC-A08-BKGD01-0006-01	pCi/g	1.74E+01	2.45E+00	1.07E+00				NA	05/15/17 16:41	5.85E+02	08/24/17 08:20	YES
03	PA-234M	DUP	HTC-A08-BKGD01-0006-01	pCi/g	5.00E+00	8.75E+00	1.39E+01					05/15/17 16:41	5.85E+02	08/24/17 08:20	NO
03	PB-212	DUP	HTC-A08-BKGD01-0006-01	pCi/g	1.38E+00	2.30E-01	2.98E-01					05/15/17 16:41	5.85E+02	08/24/17 08:20	YES
03	PB-214	DUP	HTC-A08-BKGD01-0006-01	pCi/g	8.72E-01	1.77E-01	3.39E-01					05/15/17 16:41	5.85E+02	08/24/17 08:20	YES
03	RA-224	DUP	HTC-A08-BKGD01-0006-01	pCi/g	1.26E+01	2.04E+00	3.25E+00					05/15/17 16:41	5.85E+02	08/24/17 08:20	NO
03	RA-226	DUP	HTC-A08-BKGD01-0006-01	pCi/g	9.80E-01	1.92E-01	4.97E-01				NA	05/15/17 16:41	5.85E+02	08/24/17 08:20	YES
03	RA-228	DUP	HTC-A08-BKGD01-0006-01	pCi/g	1.09E+00	3.21E-01	9.45E-01				NA	05/15/17 16:41	5.85E+02	08/24/17 08:20	YES
03	TH-234	DUP	HTC-A08-BKGD01-0006-01	pCi/g	2.88E+00	1.84E+00	3.03E+00					05/15/17 16:41	5.85E+02	08/24/17 08:20	YES
03	TL-208	DUP	HTC-A08-BKGD01-0006-01	pCi/g	1.11E+00	2.53E-01	7.57E-02					05/15/17 16:41	5.85E+02	08/24/17 08:20	YES
04	AC-228	DO	HTC-A08-BKGD01-0006-01	pCi/g	1.12E+00	2.91E-01	6.06E-01					05/15/17 16:41	5.85E+02	08/24/17 09:23	YES
04	BI-212	DO	HTC-A08-BKGD01-0006-01	pCi/g	5.12E-01	7.15E-01	1.08E+00					05/15/17 16:41	5.85E+02	08/24/17 09:23	NO
04	BI-214	DO	HTC-A08-BKGD01-0006-01	pCi/g	1.05E+00	3.11E-01	4.98E-01					05/15/17 16:41	5.85E+02	08/24/17 09:23	YES
04	CS-137	DO	HTC-A08-BKGD01-0006-01	pCi/g	6.01E-02	9.88E-02	1.48E-01					05/15/17 16:41	5.85E+02	08/24/17 09:23	NO
04	K-40	DO	HTC-A08-BKGD01-0006-01	pCi/g	1.80E+01	2.58E+00	1.53E+00					05/15/17 16:41	5.85E+02	08/24/17 09:23	YES
04	PA-234M	DO	HTC-A08-BKGD01-0006-01	pCi/g	-6.60E+00	1.04E+01	1.27E+01					05/15/17 16:41	5.85E+02	08/24/17 09:23	NO
04	PB-212	DO	HTC-A08-BKGD01-0006-01	pCi/g	1.21E+00	2.02E-01	2.50E-01					05/15/17 16:41	5.85E+02	08/24/17 09:23	YES
04	PB-214	DO	HTC-A08-BKGD01-0006-01	pCi/g	9.54E-01	1.88E-01	2.97E-01					05/15/17 16:41	5.85E+02	08/24/17 09:23	YES
04	RA-224	DO	HTC-A08-BKGD01-0006-01	pCi/g	1.19E+01	1.92E+00	3.12E+00					05/15/17 16:41	5.85E+02	08/24/17 09:23	NO
04	RA-226	DO	HTC-A08-BKGD01-0006-01	pCi/g	1.05E+00	3.11E-01	4.98E-01					05/15/17 16:41	5.85E+02	08/24/17 09:23	YES

Work Order: 17-07091-Gamma-2

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
04	RA-228	DO	HTC-A08-BKGD01-0006-01	pCi/g	1.12E+00	2.91E-01	6.06E-01					05/15/17 16:41	5.85E+02	08/24/17 09:23	YES
04	TH-234	DO	HTC-A08-BKGD01-0006-01	pCi/g	1.83E+00	1.35E+00	2.06E+00					05/15/17 16:41	5.85E+02	08/24/17 09:23	NO
04	TL-208	DO	HTC-A08-BKGD01-0006-01	pCi/g	1.17E+00	2.40E-01	7.57E-02					05/15/17 16:41	5.85E+02	08/24/17 09:23	YES
07	AC-228	TRG	HTC-A08-BKGD01-1218-01	pCi/g	1.02E+00	2.38E-01	4.51E-01					05/15/17 16:35	6.60E+02	08/24/17 08:38	YES
07	BI-212	TRG	HTC-A08-BKGD01-1218-01	pCi/g	8.25E-01	5.05E-01	7.93E-01					05/15/17 16:35	6.60E+02	08/24/17 08:38	YES
07	BI-214	TRG	HTC-A08-BKGD01-1218-01	pCi/g	9.04E-01	1.80E-01	2.72E-01					05/15/17 16:35	6.60E+02	08/24/17 08:38	YES
07	CS-137	TRG	HTC-A08-BKGD01-1218-01	pCi/g	1.05E-02	3.09E-02	9.17E-02					05/15/17 16:35	6.60E+02	08/24/17 08:38	NO
07	K-40	TRG	HTC-A08-BKGD01-1218-01	pCi/g	1.97E+01	2.33E+00	9.39E-01					05/15/17 16:35	6.60E+02	08/24/17 08:38	YES
07	PA-234M	TRG	HTC-A08-BKGD01-1218-01	pCi/g	-1.16E-01	3.22E+00	1.02E+01					05/15/17 16:35	6.60E+02	08/24/17 08:38	NO
07	PB-212	TRG	HTC-A08-BKGD01-1218-01	pCi/g	1.22E+00	1.59E-01	2.32E-01					05/15/17 16:35	6.60E+02	08/24/17 08:38	YES
07	PB-214	TRG	HTC-A08-BKGD01-1218-01	pCi/g	9.01E-01	1.62E-01	2.99E-01					05/15/17 16:35	6.60E+02	08/24/17 08:38	YES
07	RA-224	TRG	HTC-A08-BKGD01-1218-01	pCi/g	1.62E+01	1.99E+00	2.96E+00					05/15/17 16:35	6.60E+02	08/24/17 08:38	NO
07	RA-226	TRG	HTC-A08-BKGD01-1218-01	pCi/g	9.04E-01	1.80E-01	2.72E-01					05/15/17 16:35	6.60E+02	08/24/17 08:38	YES
07	RA-228	TRG	HTC-A08-BKGD01-1218-01	pCi/g	1.02E+00	2.38E-01	4.51E-01					05/15/17 16:35	6.60E+02	08/24/17 08:38	YES
07	TH-234	TRG	HTC-A08-BKGD01-1218-01	pCi/g	9.44E-01	1.26E+00	1.65E+00					05/15/17 16:35	6.60E+02	08/24/17 08:38	NO
07	TL-208	TRG	HTC-A08-BKGD01-1218-01	pCi/g	1.08E+00	1.83E-01	1.07E-01					05/15/17 16:35	6.60E+02	08/24/17 08:38	YES
08	AC-228	TRG	HTC-A08-BKGD01-1824-01	pCi/g	1.38E+00	2.29E-01	5.45E-01					05/15/17 16:32	6.45E+02	08/24/17 09:39	YES
08	BI-212	TRG	HTC-A08-BKGD01-1824-01	pCi/g	9.40E-01	6.53E-01	1.16E+00					05/15/17 16:32	6.45E+02	08/24/17 09:39	YES
08	BI-214	TRG	HTC-A08-BKGD01-1824-01	pCi/g	1.04E+00	1.60E-01	1.74E-01					05/15/17 16:32	6.45E+02	08/24/17 09:39	YES
08	CS-137	TRG	HTC-A08-BKGD01-1824-01	pCi/g	4.62E-02	6.61E-02	1.05E-01					05/15/17 16:32	6.45E+02	08/24/17 09:39	NO
08	K-40	TRG	HTC-A08-BKGD01-1824-01	pCi/g	2.36E+01	2.74E+00	1.38E+00					05/15/17 16:32	6.45E+02	08/24/17 09:39	YES
08	PA-234M	TRG	HTC-A08-BKGD01-1824-01	pCi/g	-2.28E+00	6.94E+00	1.01E+01					05/15/17 16:32	6.45E+02	08/24/17 09:39	NO
08	PB-212	TRG	HTC-A08-BKGD01-1824-01	pCi/g	1.43E+00	1.74E-01	2.72E-01					05/15/17 16:32	6.45E+02	08/24/17 09:39	YES
08	PB-214	TRG	HTC-A08-BKGD01-1824-01	pCi/g	1.09E+00	1.59E-01	5.17E-01					05/15/17 16:32	6.45E+02	08/24/17 09:39	YES
08	RA-224	TRG	HTC-A08-BKGD01-1824-01	pCi/g	3.97E+00	1.71E+00	3.12E+00					05/15/17 16:32	6.45E+02	08/24/17 09:39	YES
08	RA-226	TRG	HTC-A08-BKGD01-1824-01	pCi/g	1.04E+00	1.60E-01	1.74E-01					05/15/17 16:32	6.45E+02	08/24/17 09:39	YES
08	RA-228	TRG	HTC-A08-BKGD01-1824-01	pCi/g	1.38E+00	2.29E-01	5.45E-01					05/15/17 16:32	6.45E+02	08/24/17 09:39	YES
08	TH-234	TRG	HTC-A08-BKGD01-1824-01	pCi/g	1.36E+00	1.29E+00	2.15E+00					05/15/17 16:32	6.45E+02	08/24/17 09:39	YES
08	TL-208	TRG	HTC-A08-BKGD01-1824-01	pCi/g	1.04E+00	2.04E-01	2.63E-01					05/15/17 16:32	6.45E+02	08/24/17 09:39	YES
09	AC-228	TRG	HTC-A08-BKGD01-2430-01	pCi/g	1.34E+00	2.18E-01	3.48E-01					05/15/17 16:29	6.48E+02	08/24/17 09:40	YES
09	BI-212	TRG	HTC-A08-BKGD01-2430-01	pCi/g	8.84E-01	5.65E-01	9.06E-01					05/15/17 16:29	6.48E+02	08/24/17 09:40	YES
09	BI-214	TRG	HTC-A08-BKGD01-2430-01	pCi/g	8.74E-01	1.49E-01	2.02E-01					05/15/17 16:29	6.48E+02	08/24/17 09:40	YES
09	CS-137	TRG	HTC-A08-BKGD01-2430-01	pCi/g	4.62E-02	5.09E-02	8.41E-02					05/15/17 16:29	6.48E+02	08/24/17 09:40	NO
09	K-40	TRG	HTC-A08-BKGD01-2430-01	pCi/g	2.38E+01	2.69E+00	7.75E-01					05/15/17 16:29	6.48E+02	08/24/17 09:40	YES
09	PA-234M	TRG	HTC-A08-BKGD01-2430-01	pCi/g	1.05E+00	5.24E+00	8.29E+00					05/15/17 16:29	6.48E+02	08/24/17 09:40	NO
09	PB-212	TRG	HTC-A08-BKGD01-2430-01	pCi/g	1.25E+00	1.40E-01	1.96E-01					05/15/17 16:29	6.48E+02	08/24/17 09:40	YES
09	PB-214	TRG	HTC-A08-BKGD01-2430-01	pCi/g	9.52E-01	1.25E-01	2.04E-01					05/15/17 16:29	6.48E+02	08/24/17 09:40	YES
09	RA-224	TRG	HTC-A08-BKGD01-2430-01	pCi/g	4.00E+00	1.45E+00	2.25E+00					05/15/17 16:29	6.48E+02	08/24/17 09:40	YES

Work Order: 17-07091-Gamma-2

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
09	RA-226	TRG	HTC-A08-BKGD01-2430-01	pCi/g	8.74E-01	1.49E-01	2.02E-01					05/15/17 16:29	6.48E+02	08/24/17 09:40	YES
09	RA-228	TRG	HTC-A08-BKGD01-2430-01	pCi/g	1.34E+00	2.18E-01	3.48E-01					05/15/17 16:29	6.48E+02	08/24/17 09:40	YES
09	TH-234	TRG	HTC-A08-BKGD01-2430-01	pCi/g	1.28E+00	8.04E-01	1.29E+00					05/15/17 16:29	6.48E+02	08/24/17 09:40	NO
09	TL-208	TRG	HTC-A08-BKGD01-2430-01	pCi/g	1.00E+00	1.68E-01	2.29E-01					05/15/17 16:29	6.48E+02	08/24/17 09:40	YES
10	AC-228	TRG	HTC-A08-BKGD01-3036-01	pCi/g	1.27E+00	2.02E-01	3.54E-01					05/15/17 16:26	6.70E+02	08/24/17 09:40	YES
10	BI-212	TRG	HTC-A08-BKGD01-3036-01	pCi/g	7.47E-01	4.50E-01	7.12E-01					05/15/17 16:26	6.70E+02	08/24/17 09:40	YES
10	BI-214	TRG	HTC-A08-BKGD01-3036-01	pCi/g	9.42E-01	1.52E-01	2.28E-01					05/15/17 16:26	6.70E+02	08/24/17 09:40	YES
10	CS-137	TRG	HTC-A08-BKGD01-3036-01	pCi/g	8.23E-03	4.86E-02	7.31E-02					05/15/17 16:26	6.70E+02	08/24/17 09:40	NO
10	K-40	TRG	HTC-A08-BKGD01-3036-01	pCi/g	2.57E+01	2.65E+00	1.04E+00					05/15/17 16:26	6.70E+02	08/24/17 09:40	YES
10	PA-234M	TRG	HTC-A08-BKGD01-3036-01	pCi/g	3.05E+00	4.81E+00	7.88E+00					05/15/17 16:26	6.70E+02	08/24/17 09:40	NO
10	PB-212	TRG	HTC-A08-BKGD01-3036-01	pCi/g	1.38E+00	1.50E-01	2.60E-01					05/15/17 16:26	6.70E+02	08/24/17 09:40	YES
10	PB-214	TRG	HTC-A08-BKGD01-3036-01	pCi/g	9.52E-01	1.51E-01	2.29E-01					05/15/17 16:26	6.70E+02	08/24/17 09:40	YES
10	RA-224	TRG	HTC-A08-BKGD01-3036-01	pCi/g	3.59E+00	1.24E+00	2.94E+00					05/15/17 16:26	6.70E+02	08/24/17 09:40	YES
10	RA-226	TRG	HTC-A08-BKGD01-3036-01	pCi/g	9.42E-01	1.52E-01	2.28E-01					05/15/17 16:26	6.70E+02	08/24/17 09:40	YES
10	RA-228	TRG	HTC-A08-BKGD01-3036-01	pCi/g	1.27E+00	2.02E-01	3.54E-01					05/15/17 16:26	6.70E+02	08/24/17 09:40	YES
10	TH-234	TRG	HTC-A08-BKGD01-3036-01	pCi/g	2.06E+00	1.56E+00	2.59E+00					05/15/17 16:26	6.70E+02	08/24/17 09:40	YES
10	TL-208	TRG	HTC-A08-BKGD01-3036-01	pCi/g	1.34E+00	2.40E-01	2.76E-01					05/15/17 16:26	6.70E+02	08/24/17 09:40	YES
11	AC-228	TRG	HTC-A08-BKGD01-3642-01	pCi/g	1.32E+00	2.30E-01	3.90E-01					05/15/17 16:23	6.53E+02	08/24/17 10:41	YES
11	BI-212	TRG	HTC-A08-BKGD01-3642-01	pCi/g	1.01E+00	4.24E-01	7.88E-01					05/15/17 16:23	6.53E+02	08/24/17 10:41	YES
11	BI-214	TRG	HTC-A08-BKGD01-3642-01	pCi/g	1.02E+00	1.46E-01	2.09E-01					05/15/17 16:23	6.53E+02	08/24/17 10:41	YES
11	CS-137	TRG	HTC-A08-BKGD01-3642-01	pCi/g	-3.68E-02	4.92E-02	6.85E-02					05/15/17 16:23	6.53E+02	08/24/17 10:41	NO
11	K-40	TRG	HTC-A08-BKGD01-3642-01	pCi/g	2.81E+01	2.95E+00	1.30E+00					05/15/17 16:23	6.53E+02	08/24/17 10:41	YES
11	PA-234M	TRG	HTC-A08-BKGD01-3642-01	pCi/g	5.75E+00	5.48E+00	8.91E+00					05/15/17 16:23	6.53E+02	08/24/17 10:41	NO
11	PB-212	TRG	HTC-A08-BKGD01-3642-01	pCi/g	1.45E+00	1.58E-01	3.35E-01					05/15/17 16:23	6.53E+02	08/24/17 10:41	YES
11	PB-214	TRG	HTC-A08-BKGD01-3642-01	pCi/g	1.24E+00	1.31E-01	2.54E-01					05/15/17 16:23	6.53E+02	08/24/17 10:41	YES
11	RA-224	TRG	HTC-A08-BKGD01-3642-01	pCi/g	5.03E+00	1.68E+00	3.87E+00					05/15/17 16:23	6.53E+02	08/24/17 10:41	YES
11	RA-226	TRG	HTC-A08-BKGD01-3642-01	pCi/g	1.02E+00	1.46E-01	2.09E-01					05/15/17 16:23	6.53E+02	08/24/17 10:41	YES
11	RA-228	TRG	HTC-A08-BKGD01-3642-01	pCi/g	1.32E+00	2.30E-01	3.90E-01					05/15/17 16:23	6.53E+02	08/24/17 10:41	YES
11	TH-234	TRG	HTC-A08-BKGD01-3642-01	pCi/g	1.75E+00	1.19E+00	1.61E+00					05/15/17 16:23	6.53E+02	08/24/17 10:41	NO
11	TL-208	TRG	HTC-A08-BKGD01-3642-01	pCi/g	1.24E+00	2.20E-01	3.74E-01					05/15/17 16:23	6.53E+02	08/24/17 10:41	NO
12	AC-228	TRG	HTC-A08-BKGD01-4248-01	pCi/g	1.18E+00	1.87E-01	3.26E-01					05/15/17 16:20	6.84E+02	08/24/17 10:41	YES
12	BI-212	TRG	HTC-A08-BKGD01-4248-01	pCi/g	8.61E-01	3.12E-01	4.59E-01					05/15/17 16:20	6.84E+02	08/24/17 10:41	YES
12	BI-214	TRG	HTC-A08-BKGD01-4248-01	pCi/g	9.54E-01	1.53E-01	2.30E-01					05/15/17 16:20	6.84E+02	08/24/17 10:41	YES
12	CS-137	TRG	HTC-A08-BKGD01-4248-01	pCi/g	-1.85E-02	5.07E-02	7.34E-02					05/15/17 16:20	6.84E+02	08/24/17 10:41	NO
12	K-40	TRG	HTC-A08-BKGD01-4248-01	pCi/g	2.37E+01	2.70E+00	1.15E+00					05/15/17 16:20	6.84E+02	08/24/17 10:41	YES
12	PA-234M	TRG	HTC-A08-BKGD01-4248-01	pCi/g	-9.57E-01	5.14E+00	7.25E+00					05/15/17 16:20	6.84E+02	08/24/17 10:41	NO
12	PB-212	TRG	HTC-A08-BKGD01-4248-01	pCi/g	1.08E+00	1.24E-01	1.96E-01					05/15/17 16:20	6.84E+02	08/24/17 10:41	YES
12	PB-214	TRG	HTC-A08-BKGD01-4248-01	pCi/g	8.65E-01	1.27E-01	1.97E-01					05/15/17 16:20	6.84E+02	08/24/17 10:41	YES

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Work Order: 17-07091-Gamma-2

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
12	RA-224	TRG	HTC-A08-BKGD01-4248-01	pCi/g	2.40E+00	7.81E-01	2.22E+00					05/15/17 16:20	6.84E+02	08/24/17 10:41	YES
12	RA-226	TRG	HTC-A08-BKGD01-4248-01	pCi/g	9.54E-01	1.53E-01	2.30E-01					05/15/17 16:20	6.84E+02	08/24/17 10:41	YES
12	RA-228	TRG	HTC-A08-BKGD01-4248-01	pCi/g	1.18E+00	1.87E-01	3.26E-01					05/15/17 16:20	6.84E+02	08/24/17 10:41	YES
12	TH-234	TRG	HTC-A08-BKGD01-4248-01	pCi/g	1.09E+00	7.96E-01	1.25E+00					05/15/17 16:20	6.84E+02	08/24/17 10:41	NO
12	TL-208	TRG	HTC-A08-BKGD01-4248-01	pCi/g	9.23E-01	1.48E-01	1.87E-01					05/15/17 16:20	6.84E+02	08/24/17 10:41	YES
13	AC-228	TRG	HTC-A08-BKGD02-0006-01	pCi/g	1.36E+00	3.18E-01	6.16E-01					05/15/17 15:56	6.41E+02	08/24/17 10:57	YES
13	BI-212	TRG	HTC-A08-BKGD02-0006-01	pCi/g	1.46E+00	7.36E-01	1.11E+00					05/15/17 15:56	6.41E+02	08/24/17 10:57	YES
13	BI-214	TRG	HTC-A08-BKGD02-0006-01	pCi/g	9.00E-01	1.89E-01	2.39E-01					05/15/17 15:56	6.41E+02	08/24/17 10:57	YES
13	CS-137	TRG	HTC-A08-BKGD02-0006-01	pCi/g	1.73E-01	1.00E-01	1.55E-01					05/15/17 15:56	6.41E+02	08/24/17 10:57	YES
13	K-40	TRG	HTC-A08-BKGD02-0006-01	pCi/g	1.72E+01	2.62E+00	2.21E+00					05/15/17 15:56	6.41E+02	08/24/17 10:57	YES
13	PA-234M	TRG	HTC-A08-BKGD02-0006-01	pCi/g	-3.25E+00	1.01E+01	1.36E+01					05/15/17 15:56	6.41E+02	08/24/17 10:57	NO
13	PB-212	TRG	HTC-A08-BKGD02-0006-01	pCi/g	1.26E+00	1.96E-01	2.38E-01					05/15/17 15:56	6.41E+02	08/24/17 10:57	YES
13	PB-214	TRG	HTC-A08-BKGD02-0006-01	pCi/g	8.28E-01	1.79E-01	2.87E-01					05/15/17 15:56	6.41E+02	08/24/17 10:57	YES
13	RA-224	TRG	HTC-A08-BKGD02-0006-01	pCi/g	1.45E+01	1.93E+00	3.06E+00					05/15/17 15:56	6.41E+02	08/24/17 10:57	NO
13	RA-226	TRG	HTC-A08-BKGD02-0006-01	pCi/g	9.00E-01	1.89E-01	2.39E-01					05/15/17 15:56	6.41E+02	08/24/17 10:57	YES
13	RA-228	TRG	HTC-A08-BKGD02-0006-01	pCi/g	1.36E+00	3.18E-01	6.16E-01					05/15/17 15:56	6.41E+02	08/24/17 10:57	YES
13	TH-234	TRG	HTC-A08-BKGD02-0006-01	pCi/g	3.21E+00	2.00E+00	5.47E+00					05/15/17 15:56	6.41E+02	08/24/17 10:57	YES
13	TL-208	TRG	HTC-A08-BKGD02-0006-01	pCi/g	1.21E+00	2.67E-01	3.90E-01					05/15/17 15:56	6.41E+02	08/24/17 10:57	YES
14	AC-228	TRG	HTC-A08-BKGD02-0612-01	pCi/g	1.27E+00	2.71E-01	6.95E-01					05/15/17 15:53	5.85E+02	08/24/17 11:12	YES
14	BI-212	TRG	HTC-A08-BKGD02-0612-01	pCi/g	2.54E-01	5.36E-01	8.48E-01					05/15/17 15:53	5.85E+02	08/24/17 11:12	NO
14	BI-214	TRG	HTC-A08-BKGD02-0612-01	pCi/g	9.86E-01	1.82E-01	2.82E-01					05/15/17 15:53	5.85E+02	08/24/17 11:12	YES
14	CS-137	TRG	HTC-A08-BKGD02-0612-01	pCi/g	5.80E-03	6.77E-02	1.02E-01					05/15/17 15:53	5.85E+02	08/24/17 11:12	NO
14	K-40	TRG	HTC-A08-BKGD02-0612-01	pCi/g	1.89E+01	2.42E+00	1.49E+00					05/15/17 15:53	5.85E+02	08/24/17 11:12	YES
14	PA-234M	TRG	HTC-A08-BKGD02-0612-01	pCi/g	3.35E+00	6.50E+00	1.07E+01					05/15/17 15:53	5.85E+02	08/24/17 11:12	NO
14	PB-212	TRG	HTC-A08-BKGD02-0612-01	pCi/g	1.39E+00	1.82E-01	2.84E-01					05/15/17 15:53	5.85E+02	08/24/17 11:12	YES
14	PB-214	TRG	HTC-A08-BKGD02-0612-01	pCi/g	1.12E+00	1.87E-01	2.65E-01					05/15/17 15:53	5.85E+02	08/24/17 11:12	YES
14	RA-224	TRG	HTC-A08-BKGD02-0612-01	pCi/g	1.79E+01	2.20E+00	3.28E+00					05/15/17 15:53	5.85E+02	08/24/17 11:12	NO
14	RA-226	TRG	HTC-A08-BKGD02-0612-01	pCi/g	9.86E-01	1.82E-01	2.82E-01					05/15/17 15:53	5.85E+02	08/24/17 11:12	YES
14	RA-228	TRG	HTC-A08-BKGD02-0612-01	pCi/g	1.27E+00	2.71E-01	6.95E-01					05/15/17 15:53	5.85E+02	08/24/17 11:12	YES
14	TH-234	TRG	HTC-A08-BKGD02-0612-01	pCi/g	3.53E+00	1.82E+00	5.48E+00					05/15/17 15:53	5.85E+02	08/24/17 11:12	YES
14	TL-208	TRG	HTC-A08-BKGD02-0612-01	pCi/g	1.11E+00	2.08E-01	2.28E-01					05/15/17 15:53	5.85E+02	08/24/17 11:12	YES
15	AC-228	TRG	HTC-A08-BKGD02-1218-01	pCi/g	1.19E+00	3.52E-01	6.56E-01					05/15/17 15:50	5.86E+02	08/24/17 12:12	YES
15	BI-212	TRG	HTC-A08-BKGD02-1218-01	pCi/g	9.48E-01	8.09E-01	1.33E+00					05/15/17 15:50	5.86E+02	08/24/17 12:12	YES
15	BI-214	TRG	HTC-A08-BKGD02-1218-01	pCi/g	1.24E+00	2.08E-01	3.02E-01					05/15/17 15:50	5.86E+02	08/24/17 12:12	YES
15	CS-137	TRG	HTC-A08-BKGD02-1218-01	pCi/g	-3.00E-02	7.47E-02	1.07E-01					05/15/17 15:50	5.86E+02	08/24/17 12:12	NO
15	K-40	TRG	HTC-A08-BKGD02-1218-01	pCi/g	2.61E+01	2.97E+00	1.13E+00					05/15/17 15:50	5.86E+02	08/24/17 12:12	YES
15	PA-234M	TRG	HTC-A08-BKGD02-1218-01	pCi/g	4.67E+00	6.88E+00	1.16E+01					05/15/17 15:50	5.86E+02	08/24/17 12:12	NO
15	PB-212	TRG	HTC-A08-BKGD02-1218-01	pCi/g	1.78E+00	2.34E-01	2.60E-01					05/15/17 15:50	5.86E+02	08/24/17 12:12	YES

Work Order: 17-07091-Gamma-2

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
15	PB-214	TRG	HTC-A08-BKGD02-1218-01	pCi/g	1.23E+00	1.57E-01	3.40E-01					05/15/17 15:50	5.86E+02	08/24/17 12:12	YES
15	RA-224	TRG	HTC-A08-BKGD02-1218-01	pCi/g	2.09E+01	2.43E+00	3.49E+00					05/15/17 15:50	5.86E+02	08/24/17 12:12	NO
15	RA-226	TRG	HTC-A08-BKGD02-1218-01	pCi/g	1.24E+00	2.08E-01	3.02E-01					05/15/17 15:50	5.86E+02	08/24/17 12:12	YES
15	RA-228	TRG	HTC-A08-BKGD02-1218-01	pCi/g	1.19E+00	3.52E-01	6.56E-01					05/15/17 15:50	5.86E+02	08/24/17 12:12	YES
15	TH-234	TRG	HTC-A08-BKGD02-1218-01	pCi/g	1.93E+00	1.37E+00	1.86E+00					05/15/17 15:50	5.86E+02	08/24/17 12:12	NO
15	TL-208	TRG	HTC-A08-BKGD02-1218-01	pCi/g	1.11E+00	2.16E-01	1.21E-01					05/15/17 15:50	5.86E+02	08/24/17 12:12	YES
16	AC-228	TRG	HTC-A08-BKGD02-1824-01	pCi/g	1.43E+00	1.87E-01	3.52E-01					05/15/17 15:47	6.73E+02	08/24/17 12:14	YES
16	BI-212	TRG	HTC-A08-BKGD02-1824-01	pCi/g	1.26E+00	5.03E-01	7.48E-01					05/15/17 15:47	6.73E+02	08/24/17 12:14	YES
16	BI-214	TRG	HTC-A08-BKGD02-1824-01	pCi/g	1.12E+00	1.57E-01	2.03E-01					05/15/17 15:47	6.73E+02	08/24/17 12:14	YES
16	CS-137	TRG	HTC-A08-BKGD02-1824-01	pCi/g	-9.58E-03	4.90E-02	7.22E-02					05/15/17 15:47	6.73E+02	08/24/17 12:14	NO
16	K-40	TRG	HTC-A08-BKGD02-1824-01	pCi/g	2.46E+01	2.56E+00	1.10E+00					05/15/17 15:47	6.73E+02	08/24/17 12:14	YES
16	PA-234M	TRG	HTC-A08-BKGD02-1824-01	pCi/g	1.22E+00	4.64E+00	7.23E+00					05/15/17 15:47	6.73E+02	08/24/17 12:14	NO
16	PB-212	TRG	HTC-A08-BKGD02-1824-01	pCi/g	1.41E+00	1.52E-01	2.87E-01					05/15/17 15:47	6.73E+02	08/24/17 12:14	YES
16	PB-214	TRG	HTC-A08-BKGD02-1824-01	pCi/g	1.15E+00	1.60E-01	2.64E-01					05/15/17 15:47	6.73E+02	08/24/17 12:14	YES
16	RA-224	TRG	HTC-A08-BKGD02-1824-01	pCi/g	4.50E+00	1.43E+00	3.27E+00					05/15/17 15:47	6.73E+02	08/24/17 12:14	YES
16	RA-226	TRG	HTC-A08-BKGD02-1824-01	pCi/g	1.12E+00	1.57E-01	2.03E-01					05/15/17 15:47	6.73E+02	08/24/17 12:14	YES
16	RA-228	TRG	HTC-A08-BKGD02-1824-01	pCi/g	1.43E+00	1.87E-01	3.52E-01					05/15/17 15:47	6.73E+02	08/24/17 12:14	YES
16	TH-234	TRG	HTC-A08-BKGD02-1824-01	pCi/g	1.75E+00	1.18E+00	1.59E+00					05/15/17 15:47	6.73E+02	08/24/17 12:14	NO
16	TL-208	TRG	HTC-A08-BKGD02-1824-01	pCi/g	1.29E+00	1.88E-01	1.49E-01					05/15/17 15:47	6.73E+02	08/24/17 12:14	YES
17	AC-228	TRG	HTC-A08-BKGD02-2430-01	pCi/g	1.46E+00	1.98E-01	4.99E-01					05/15/17 15:44	6.56E+02	08/24/17 12:14	YES
17	BI-212	TRG	HTC-A08-BKGD02-2430-01	pCi/g	1.05E+00	4.47E-01	6.60E-01					05/15/17 15:44	6.56E+02	08/24/17 12:14	YES
17	BI-214	TRG	HTC-A08-BKGD02-2430-01	pCi/g	9.88E-01	1.53E-01	2.03E-01					05/15/17 15:44	6.56E+02	08/24/17 12:14	YES
17	CS-137	TRG	HTC-A08-BKGD02-2430-01	pCi/g	1.49E-02	5.60E-02	8.58E-02					05/15/17 15:44	6.56E+02	08/24/17 12:14	NO
17	K-40	TRG	HTC-A08-BKGD02-2430-01	pCi/g	2.26E+01	2.64E+00	1.28E+00					05/15/17 15:44	6.56E+02	08/24/17 12:14	YES
17	PA-234M	TRG	HTC-A08-BKGD02-2430-01	pCi/g	6.18E+00	6.19E+00	1.02E+01					05/15/17 15:44	6.56E+02	08/24/17 12:14	YES
17	PB-212	TRG	HTC-A08-BKGD02-2430-01	pCi/g	1.51E+00	1.91E-01	2.20E-01					05/15/17 15:44	6.56E+02	08/24/17 12:14	YES
17	PB-214	TRG	HTC-A08-BKGD02-2430-01	pCi/g	1.09E+00	1.26E-01	1.60E-01					05/15/17 15:44	6.56E+02	08/24/17 12:14	YES
17	RA-224	TRG	HTC-A08-BKGD02-2430-01	pCi/g	9.56E+00	1.87E+00	2.50E+00					05/15/17 15:44	6.56E+02	08/24/17 12:14	NO
17	RA-226	TRG	HTC-A08-BKGD02-2430-01	pCi/g	9.88E-01	1.53E-01	2.03E-01					05/15/17 15:44	6.56E+02	08/24/17 12:14	YES
17	RA-228	TRG	HTC-A08-BKGD02-2430-01	pCi/g	1.46E+00	1.98E-01	4.99E-01					05/15/17 15:44	6.56E+02	08/24/17 12:14	YES
17	TH-234	TRG	HTC-A08-BKGD02-2430-01	pCi/g	1.70E+00	8.12E-01	1.32E+00					05/15/17 15:44	6.56E+02	08/24/17 12:14	NO
17	TL-208	TRG	HTC-A08-BKGD02-2430-01	pCi/g	1.05E+00	1.49E-01	1.79E-01					05/15/17 15:44	6.56E+02	08/24/17 12:14	YES
18	AC-228	TRG	HTC-A08-BKGD02-3036-01	pCi/g	1.23E+00	2.55E-01	4.81E-01					05/15/17 15:41	6.76E+02	08/24/17 13:13	YES
18	BI-212	TRG	HTC-A08-BKGD02-3036-01	pCi/g	7.12E-01	4.91E-01	8.41E-01					05/15/17 15:41	6.76E+02	08/24/17 13:13	NO
18	BI-214	TRG	HTC-A08-BKGD02-3036-01	pCi/g	9.91E-01	1.73E-01	2.44E-01					05/15/17 15:41	6.76E+02	08/24/17 13:13	YES
18	CS-137	TRG	HTC-A08-BKGD02-3036-01	pCi/g	-1.05E-02	6.12E-02	9.11E-02					05/15/17 15:41	6.76E+02	08/24/17 13:13	NO
18	K-40	TRG	HTC-A08-BKGD02-3036-01	pCi/g	2.30E+01	2.58E+00	8.79E-01					05/15/17 15:41	6.76E+02	08/24/17 13:13	YES
18	PA-234M	TRG	HTC-A08-BKGD02-3036-01	pCi/g	-3.43E-01	2.61E+00	1.01E+01					05/15/17 15:41	6.76E+02	08/24/17 13:13	NO

0329

Work Order: 17-07091-Gamma-2

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
18	PB-212	TRG	HTC-A08-BKGD02-3036-01	pCi/g	1.35E+00	1.67E-01	2.37E-01					05/15/17 15:41	6.76E+02	08/24/17 13:13	YES
18	PB-214	TRG	HTC-A08-BKGD02-3036-01	pCi/g	6.92E-01	1.75E-01	3.33E-01					05/15/17 15:41	6.76E+02	08/24/17 13:13	YES
18	RA-224	TRG	HTC-A08-BKGD02-3036-01	pCi/g	1.64E+01	2.02E+00	2.96E+00					05/15/17 15:41	6.76E+02	08/24/17 13:13	NO
18	RA-226	TRG	HTC-A08-BKGD02-3036-01	pCi/g	9.91E-01	1.73E-01	2.44E-01					05/15/17 15:41	6.76E+02	08/24/17 13:13	YES
18	RA-228	TRG	HTC-A08-BKGD02-3036-01	pCi/g	1.23E+00	2.55E-01	4.81E-01					05/15/17 15:41	6.76E+02	08/24/17 13:13	YES
18	TH-234	TRG	HTC-A08-BKGD02-3036-01	pCi/g	2.93E+00	1.67E+00	5.20E+00					05/15/17 15:41	6.76E+02	08/24/17 13:13	YES
18	TL-208	TRG	HTC-A08-BKGD02-3036-01	pCi/g	1.02E+00	1.97E-01	2.40E-01					05/15/17 15:41	6.76E+02	08/24/17 13:13	YES
19	AC-228	TRG	HTC-A08-BKGD02-3642-01	pCi/g	7.75E-01	1.49E-01	3.01E-01					05/15/17 15:38	8.02E+02	08/24/17 13:15	YES
19	BI-212	TRG	HTC-A08-BKGD02-3642-01	pCi/g	7.35E-01	4.22E-01	6.67E-01					05/15/17 15:38	8.02E+02	08/24/17 13:15	YES
19	BI-214	TRG	HTC-A08-BKGD02-3642-01	pCi/g	7.90E-01	1.31E-01	1.36E-01					05/15/17 15:38	8.02E+02	08/24/17 13:15	YES
19	CS-137	TRG	HTC-A08-BKGD02-3642-01	pCi/g	8.94E-03	3.61E-02	5.61E-02					05/15/17 15:38	8.02E+02	08/24/17 13:15	NO
19	K-40	TRG	HTC-A08-BKGD02-3642-01	pCi/g	1.81E+01	1.92E+00	7.97E-01					05/15/17 15:38	8.02E+02	08/24/17 13:15	YES
19	PA-234M	TRG	HTC-A08-BKGD02-3642-01	pCi/g	6.60E+00	3.62E+00	6.75E+00					05/15/17 15:38	8.02E+02	08/24/17 13:15	NO
19	PB-212	TRG	HTC-A08-BKGD02-3642-01	pCi/g	7.84E-01	9.75E-02	1.88E-01					05/15/17 15:38	8.02E+02	08/24/17 13:15	YES
19	PB-214	TRG	HTC-A08-BKGD02-3642-01	pCi/g	6.63E-01	9.30E-02	1.49E-01					05/15/17 15:38	8.02E+02	08/24/17 13:15	YES
19	RA-224	TRG	HTC-A08-BKGD02-3642-01	pCi/g	2.02E+00	8.84E-01	2.13E+00					05/15/17 15:38	8.02E+02	08/24/17 13:15	YES
19	RA-226	TRG	HTC-A08-BKGD02-3642-01	pCi/g	7.90E-01	1.31E-01	1.36E-01					05/15/17 15:38	8.02E+02	08/24/17 13:15	YES
19	RA-228	TRG	HTC-A08-BKGD02-3642-01	pCi/g	7.75E-01	1.49E-01	3.01E-01					05/15/17 15:38	8.02E+02	08/24/17 13:15	YES
19	TH-234	TRG	HTC-A08-BKGD02-3642-01	pCi/g	1.25E+00	1.06E+00	1.76E+00					05/15/17 15:38	8.02E+02	08/24/17 13:15	YES
19	TL-208	TRG	HTC-A08-BKGD02-3642-01	pCi/g	7.79E-01	1.17E-01	8.56E-02					05/15/17 15:38	8.02E+02	08/24/17 13:15	YES
20	AC-228	TRG	HTC-A08-BKGD02-4248-01	pCi/g	6.32E-01	1.33E-01	4.37E-01					05/15/17 15:35	7.82E+02	08/24/17 13:15	YES
20	BI-212	TRG	HTC-A08-BKGD02-4248-01	pCi/g	5.64E-01	4.19E-01	6.78E-01					05/15/17 15:35	7.82E+02	08/24/17 13:15	YES
20	BI-214	TRG	HTC-A08-BKGD02-4248-01	pCi/g	6.26E-01	9.60E-02	1.24E-01					05/15/17 15:35	7.82E+02	08/24/17 13:15	YES
20	CS-137	TRG	HTC-A08-BKGD02-4248-01	pCi/g	-5.09E-03	3.98E-02	5.90E-02					05/15/17 15:35	7.82E+02	08/24/17 13:15	NO
20	K-40	TRG	HTC-A08-BKGD02-4248-01	pCi/g	1.43E+01	1.73E+00	6.40E-01					05/15/17 15:35	7.82E+02	08/24/17 13:15	YES
20	PA-234M	TRG	HTC-A08-BKGD02-4248-01	pCi/g	8.30E-01	3.63E+00	5.83E+00					05/15/17 15:35	7.82E+02	08/24/17 13:15	NO
20	PB-212	TRG	HTC-A08-BKGD02-4248-01	pCi/g	6.63E-01	8.71E-02	1.56E-01					05/15/17 15:35	7.82E+02	08/24/17 13:15	YES
20	PB-214	TRG	HTC-A08-BKGD02-4248-01	pCi/g	7.40E-01	1.00E-01	1.38E-01					05/15/17 15:35	7.82E+02	08/24/17 13:15	YES
20	RA-224	TRG	HTC-A08-BKGD02-4248-01	pCi/g	4.86E+00	1.33E+00	1.79E+00					05/15/17 15:35	7.82E+02	08/24/17 13:15	NO
20	RA-226	TRG	HTC-A08-BKGD02-4248-01	pCi/g	6.26E-01	9.60E-02	1.24E-01					05/15/17 15:35	7.82E+02	08/24/17 13:15	YES
20	RA-228	TRG	HTC-A08-BKGD02-4248-01	pCi/g	6.32E-01	1.33E-01	4.37E-01					05/15/17 15:35	7.82E+02	08/24/17 13:15	YES
20	TH-234	TRG	HTC-A08-BKGD02-4248-01	pCi/g	7.18E-01	6.15E-01	9.68E-01					05/15/17 15:35	7.82E+02	08/24/17 13:15	NO
20	TL-208	TRG	HTC-A08-BKGD02-4248-01	pCi/g	6.13E-01	1.20E-01	1.39E-01					05/15/17 15:35	7.82E+02	08/24/17 13:15	YES

Count Room Report
Client: Weston Solutions, Inc.

17-07091-Gamma-2 (pCi/g) in SO
Tracer ID:

Internal Fraction	Sample Desc	Client ID	Sample Date	Sample Aliquot	Tracer Aliquot (g)	Tracer ACT (dpm)	Radiometric Tracer (pCi)	Radiometric % Rec	SAF 1*	SAF 2*
01	LCS	LCS	07/19/17 00:00	1.0000				0.00		
02	MBL	BLANK	07/19/17 00:00	1.0000				0.00		
03	DUP	HTC-A08-BKGD01-0006-01	05/15/17 16:41	584.5800				0.00		
04	DO	HTC-A08-BKGD01-0006-01	05/15/17 16:41	584.5800				0.00		
07	TRG	HTC-A08-BKGD01-1218-01	05/15/17 16:35	659.9500				0.00		
08	TRG	HTC-A08-BKGD01-1824-01	05/15/17 16:32	644.7700				0.00		
09	TRG	HTC-A08-BKGD01-2430-01	05/15/17 16:29	647.9300				0.00		
10	TRG	HTC-A08-BKGD01-3036-01	05/15/17 16:26	670.2200				0.00		
11	TRG	HTC-A08-BKGD01-3642-01	05/15/17 16:23	653.4600				0.00		
12	TRG	HTC-A08-BKGD01-4248-01	05/15/17 16:20	684.1500				0.00		
13	TRG	HTC-A08-BKGD02-0006-01	05/15/17 15:56	640.7500				0.00		
14	TRG	HTC-A08-BKGD02-0612-01	05/15/17 15:53	584.6400				0.00		
15	TRG	HTC-A08-BKGD02-1218-01	05/15/17 15:50	586.3000				0.00		
16	TRG	HTC-A08-BKGD02-1824-01	05/15/17 15:47	672.5700				0.00		
17	TRG	HTC-A08-BKGD02-2430-01	05/15/17 15:44	655.5000				0.00		
18	TRG	HTC-A08-BKGD02-3036-01	05/15/17 15:41	675.5000				0.00		
19	TRG	HTC-A08-BKGD02-3642-01	05/15/17 15:38	801.8400				0.00		
20	TRG	HTC-A08-BKGD02-4248-01	05/15/17 15:35	782.4600				0.00		

Eberline Analytical
Oak Ridge Laboratory

Aliquot Worksheet

Work Order	Run	Analysis Code	Rpt Units	Lab Deadline	Technician
17-07091	2	Gamma	grams	8/10/2017	KSALLINGS

Lab Fraction	Weston Solutions, Inc. Client ID	Sample Type	Muffle Data	Dilution Data			Aliquot Data		MS Aliquot Data		H-3 Solids Only	
			Ratio Post/Pre	No of Dils	Dil Factor	Ratio	Aliquot	Net Equiv	Aliquot	Net Equiv	Water Added (ml)	H3 Dist Aliq
01	LCS	LCS					1.0000E+00	1.0000E+00				
02	BLANK	MBL					1.0000E+00	1.0000E+00				
03	HTC-A08-BKGD01-0006-01	DUP					5.8458E+02	5.8458E+02				
04	HTC-A08-BKGD01-0006-01	DO					5.8458E+02	5.8458E+02				
07	HTC-A08-BKGD01-1218-01	TRG					6.5995E+02	6.5995E+02				
08	HTC-A08-BKGD01-1824-01	TRG					6.4477E+02	6.4477E+02				
09	HTC-A08-BKGD01-2430-01	TRG					6.4793E+02	6.4793E+02				
10	HTC-A08-BKGD01-3036-01	TRG					6.7022E+02	6.7022E+02				
11	HTC-A08-BKGD01-3642-01	TRG					6.5346E+02	6.5346E+02				
12	HTC-A08-BKGD01-4248-01	TRG					6.8415E+02	6.8415E+02				
13	HTC-A08-BKGD02-0006-01	TRG					6.4075E+02	6.4075E+02				
14	HTC-A08-BKGD02-0612-01	TRG					5.8464E+02	5.8464E+02				
15	HTC-A08-BKGD02-1218-01	TRG					5.8630E+02	5.8630E+02				
16	HTC-A08-BKGD02-1824-01	TRG					6.7257E+02	6.7257E+02				
17	HTC-A08-BKGD02-2430-01	TRG					6.5550E+02	6.5550E+02				
18	HTC-A08-BKGD02-3036-01	TRG					6.7550E+02	6.7550E+02				
19	HTC-A08-BKGD02-3642-01	TRG					8.0184E+02	8.0184E+02				
20	HTC-A08-BKGD02-4248-01	TRG					7.8246E+02	7.8246E+02				

Comments	

0332

Technician: Kerry Sallings Date: 8/3/17

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

Rough Sample Preparation Log Book

Work Order	Lab Deadline	Date Received in Prep	Date Sealed	Date Returned	Technician
17-07091	8/10/2017	8/2/2017	8/3/2017	8/4/2017	KSALLINGS

Bico Pulverizer: 000302 [✓] Jaw Crusher 68275 [ ]

Eberline	Weston Solutions, Inc.	Tare (g)	Gross (g)		Net (g)		Percent		Gamma		Special
Fraction	Client ID	Pan Wt	Wet Wt.	Dry Wt.	Wet Wt.	Dry Wt.	Liquid	Solid	Dry Wt.	LEPS Wt.	Info
04	HTC-A08-BKGD01-0006-01	14.5100	835.6600	678.3100	821.1500	663.8000	19.16%	80.84%	0.0000	0.0000	
05	HTC-A08-BKGD01-0006-01 MS	14.5200	841.5000	688.8100	826.9800	674.2900	18.46%	81.54%	0.0000	0.0000	
06	HTC-A08-BKGD01-0006-01 MSD	14.5200	841.5000	688.8100	826.9800	674.2900	18.46%	81.54%	0.0000	0.0000	
07	HTC-A08-BKGD01-1218-01	14.5400	914.6000	745.1300	900.0600	730.5900	18.83%	81.17%	0.0000	0.0000	
08	HTC-A08-BKGD01-1824-01	14.5100	906.2400	733.9300	891.7300	719.4200	19.32%	80.68%	0.0000	0.0000	
09	HTC-A08-BKGD01-2430-01	14.5900	939.2800	764.9700	924.6900	750.3800	18.85%	81.15%	0.0000	0.0000	
10	HTC-A08-BKGD01-3036-01	14.5500	960.4800	781.3200	945.9300	766.7700	18.94%	81.06%	0.0000	0.0000	
11	HTC-A08-BKGD01-3642-01	14.5300	949.6200	766.2000	935.0900	751.6700	19.62%	80.38%	0.0000	0.0000	
12	HTC-A08-BKGD01-4248-01	14.5300	996.6400	809.0000	982.1100	794.4700	19.11%	80.89%	0.0000	0.0000	
13	HTC-A08-BKGD02-0006-01	14.5100	920.1600	722.4800	905.6500	707.9700	21.83%	78.17%	0.0000	0.0000	
14	HTC-A08-BKGD02-0612-01	14.4700	933.8000	750.2600	919.3300	735.7900	19.96%	80.04%	0.0000	0.0000	
15	HTC-A08-BKGD02-1218-01	14.4800	862.2400	690.1000	847.7600	675.6200	20.31%	79.69%	0.0000	0.0000	
16	HTC-A08-BKGD02-1824-01	14.5200	951.5400	759.0000	937.0200	744.4800	20.55%	79.45%	0.0000	0.0000	
17	HTC-A08-BKGD02-2430-01	14.5800	918.3000	748.3600	903.7200	733.7800	18.80%	81.20%	0.0000	0.0000	
18	HTC-A08-BKGD02-3036-01	14.6400	944.2000	772.0700	929.5600	757.4300	18.52%	81.48%	0.0000	0.0000	
19	HTC-A08-BKGD02-3642-01	14.6300	1129.2800	968.0000	1114.6500	953.3700	14.47%	85.53%	0.0000	0.0000	
20	HTC-A08-BKGD02-4248-01	14.5800	1021.6200	877.8000	1007.0400	863.2200	14.28%	85.72%	0.0000	0.0000	

OVENS Fisher Isotemp SN 00579 [✓] VWR SN 000588 [ ]

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

0333

Technician: Kerry Sallings Date: Analysis: Rough Prep Logbook

Analysis: Gamma Page No. 10182

Eckert & Ziegler
Analytics

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

CERTIFICATE OF CALIBRATION
Standard Radionuclide Source

GAS-1402

98503
Sand in 16 Ounce PP Taral Jar Filled to Capacity

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

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

Nuclide	Gamma-Ray Energy (keV)	Half-Life, Days	Master Source* γps/gram	This Source γps	Uncertainty*, % Type u_A	u_B	U	Calibration Method*
Am-241	59.5	1.580E+05	———	2.030E+03	0.1	1.8	3.6	4π LS
Cd-109	88.0	4.614E+02	1.663E+05	2.929E+03	0.5	2.0	4.1	HPGe
Co-57	122.1	2.717E+02	8.913E+04	1.569E+03	0.4	1.7	3.5	HPGe
Ce-139	165.9	1.376E+02	1.241E+05	2.185E+03	0.4	1.7	3.5	HPGe
Hg-203	279.2	4.659E+01	2.675E+05	4.710E+03	0.3	1.7	3.5	HPGe
Sn-113	391.7	1.151E+02	1.796E+05	3.163E+03	0.4	1.9	3.9	HPGe
Cs-137	661.7	1.099E+04	1.111E+05	1.956E+03	0.7	1.9	4.0	HPGe
Y-88	898.0	1.066E+02	4.223E+05	7.435E+03	0.7	1.7	3.7	HPGe
Co-60	1173.2	1.925E+03	2.091E+05	3.683E+03	0.7	1.8	3.9	HPGe
Co-60	1332.5	1.925E+03	2.094E+05	3.687E+03	0.7	1.8	3.9	HPGe
Y-88	1836.1	1.066E+02	4.471E+05	7.872E+03	0.7	1.7	3.7	HPGe

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

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

(Certificate continued on reverse side)

ACCREDITED SOURCE CALIBRATION LABORATORY HEALTH PHYSICS SOCIETY FORMED 1956

Corporate Office
24937 Avenue Tibbitts Valencia, California 91355

Laboratory
1380 Seaboard Industrial Blvd. Atlanta, Georgia, 30318

Apex-Gamma

Analysis Report for 1707091-01
GAS-1402

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 1707091-01
Sample Description	: GAS-1402
Sample Type	: SOIL
Sample Size	: 7.360E+02 grams
Facility	: Countroom
Sample Taken On	: 10/1/2014 12:47:18PM
Acquisition Started	: 8/24/2017 11:57:45AM
Procedure	: GAS-1602 pCi
Operator	: Administrator
Detector Name	: GE4
Geometry	: GAS-1602
Live Time	: 1800.0 seconds
Real Time	: 1831.7 seconds
Dead Time	: 1.73 %
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	: 1/14/2017
Efficiency Calibration Used Done On	: 1/14/2017
Efficiency Calibration Description	:
Sample Number	: 55898

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

Analysis Report for 1707091-01

GAS-1402

PEAK LOCATE REPORT

Peak Locate Performed on : 8/24/2017 12:28:20PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096
Peak Search Sensitivity : 2.50

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
1	22.42	21.46	0.0000	0.00
2	31.92	30.96	0.0000	0.00
3	50.51	49.56	0.0000	0.00
4	54.91	53.96	0.0000	0.00
5	59.35	58.41	0.0000	0.00
6	67.67	66.73	0.0000	0.00
7	87.87	86.93	0.0000	0.00
8	122.02	121.09	0.0000	0.00
9	136.51	135.59	0.0000	0.00
10	165.98	165.07	0.0000	0.00
11	174.16	173.25	0.0000	0.00
12	280.65	279.77	0.0000	0.00
13	308.50	307.63	0.0000	0.00
14	397.10	396.26	0.0000	0.00
15	420.19	419.36	0.0000	0.00
16	511.25	510.45	0.0000	0.00
17	661.52	660.78	0.0000	0.00
18	677.83	677.10	0.0000	0.00
19	883.76	883.11	0.0000	0.00
20	1043.27	1042.69	0.0000	0.00
21	1119.93	1119.38	0.0000	0.00
22	1172.98	1172.47	0.0000	0.00
23	1249.95	1249.47	0.0000	0.00
24	1332.23	1331.79	0.0000	0.00
25	1589.91	1589.61	0.0000	0.00
26	1685.35	1685.10	0.0000	0.00
27	1693.05	1692.80	0.0000	0.00
28	1748.54	1748.31	0.0000	0.00
29	1835.27	1835.10	0.0000	0.00
30	2007.98	2007.90	0.0000	0.00
31	2089.41	2089.39	0.0000	0.00
32	2151.81	2151.83	0.0000	0.00
33	2505.09	2505.33	0.0000	0.00
34	2614.27	2614.58	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1707091-01

GAS-1402

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 8/24/2017 12:28:20PM

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

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
	1	22.42	19 -	25	21.46	8.67E+04	807.79	5.62E+04	2.22
	2	31.92	29 -	34	30.96	1.49E+03	239.58	1.04E+04	2.10
M	3	50.51	42 -	62	49.56	1.32E+04	685.25	4.00E+04	5.01
m	4	54.91	42 -	62	53.96	1.02E+04	679.39	2.85E+04	3.79
m	5	59.35	42 -	62	58.41	8.12E+04	653.60	1.66E+04	2.47
	6	67.67	64 -	70	66.73	6.84E+02	315.12	1.77E+04	3.83
	7	87.87	80 -	92	86.93	2.62E+04	581.71	2.73E+04	2.28
	8	122.02	115 -	125	121.09	4.00E+03	363.44	1.55E+04	2.17
	9	136.51	132 -	139	135.59	5.66E+02	251.48	1.02E+04	1.98
	10	165.98	162 -	169	165.07	3.98E+02	236.03	8.99E+03	2.22
	11	174.16	171 -	176	173.25	2.03E+02	182.83	6.53E+03	1.40
	12	280.65	277 -	283	279.77	2.24E+02	177.97	5.59E+03	4.53
	13	308.50	304 -	311	307.63	2.10E+02	190.97	5.95E+03	4.20
	14	397.10	394 -	399	396.26	1.18E+02	144.11	4.04E+03	3.05
	15	420.19	417 -	422	419.36	1.25E+02	143.28	4.02E+03	2.76
	16	511.25	508 -	514	510.45	1.35E+02	135.08	3.21E+03	2.58
	17	661.52	654 -	666	660.78	1.54E+04	309.41	4.03E+03	2.39
	18	677.83	675 -	679	677.10	7.35E+01	81.44	1.39E+03	2.33
	19	883.76	881 -	885	883.11	8.15E+01	94.94	1.93E+03	1.16
	20	1043.27	1039 -	1046	1042.69	1.27E+02	122.15	2.38E+03	3.69
	21	1119.93	1117 -	1122	1119.38	9.25E+01	86.52	1.39E+03	1.92
	22	1172.98	1166 -	1179	1172.47	1.18E+04	256.58	2.06E+03	2.64
	23	1249.95	1246 -	1252	1249.47	3.30E+01	39.12	2.52E+02	3.35
	24	1332.23	1326 -	1339	1331.79	1.06E+04	215.52	4.19E+02	2.75
	25	1589.91	1569 -	1607	1589.61	6.30E+01	72.68	2.34E+02	34.36
	26	1685.35	1681 -	1689	1685.10	2.06E+01	17.61	3.28E+01	3.99
	27	1693.05	1689 -	1697	1692.80	1.42E+01	18.72	4.55E+01	4.66
	28	1748.54	1743 -	1757	1748.31	1.76E+01	22.39	4.68E+01	3.42
	29	1835.27	1830 -	1840	1835.10	3.00E+01	21.21	4.40E+01	2.22
	30	2007.98	2005 -	2010	2007.90	8.08E+00	9.38	9.85E+00	2.02
	31	2089.41	2085 -	2094	2089.39	1.49E+01	15.26	2.43E+01	2.10
	32	2151.81	2149 -	2154	2151.83	1.05E+01	10.00	1.10E+01	2.99
	33	2505.09	2501 -	2509	2505.33	6.70E+01	16.37	0.00E+00	3.48
	34	2614.27	2610 -	2619	2614.58	1.20E+01	6.93	0.00E+00	2.02

Analysis Report for 1707091-01

GAS-1402

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 : 8/24/2017 12:28:20PM

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

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	1	22.42	19 -	25	8.67E+04	807.79	5.62E+04	4.54E+02
	2	31.92	29 -	34	1.49E+03	239.58	1.04E+04	1.86E+02
M	3	50.51	42 -	62	1.32E+04	685.25	4.00E+04	3.29E+02
m	4	54.91	42 -	62	1.02E+04	679.39	2.85E+04	2.77E+02
m	5	59.35	42 -	62	8.12E+04	653.60	1.66E+04	2.12E+02
	6	67.67	64 -	70	6.84E+02	315.12	1.77E+04	2.55E+02
	7	87.87	80 -	92	2.62E+04	581.71	2.73E+04	3.97E+02
	8	122.02	115 -	125	4.00E+03	363.44	1.55E+04	2.80E+02
	9	136.51	132 -	139	5.66E+02	251.48	1.02E+04	2.03E+02
	10	165.98	162 -	169	3.98E+02	236.03	8.99E+03	1.91E+02
	11	174.16	171 -	176	2.03E+02	182.83	6.53E+03	1.48E+02
	12	280.65	277 -	283	2.24E+02	177.97	5.59E+03	1.44E+02
	13	308.50	304 -	311	2.10E+02	190.97	5.95E+03	1.55E+02
	14	397.10	394 -	399	1.18E+02	144.11	4.04E+03	1.17E+02
	15	420.19	417 -	422	1.25E+02	143.28	4.02E+03	1.16E+02
	16	511.25	508 -	514	1.35E+02	135.08	3.21E+03	1.09E+02
	17	661.52	654 -	666	1.54E+04	309.41	4.03E+03	1.52E+02
	18	677.83	675 -	679	7.35E+01	81.44	1.39E+03	6.54E+01
	19	883.76	881 -	885	8.15E+01	94.94	1.93E+03	7.66E+01
	20	1043.27	1039 -	1046	1.27E+02	122.15	2.38E+03	9.87E+01
	21	1119.93	1117 -	1122	9.25E+01	86.52	1.39E+03	6.93E+01
	22	1172.98	1166 -	1179	1.18E+04	256.58	2.06E+03	1.12E+02
	23	1249.95	1246 -	1252	3.30E+01	39.12	2.52E+02	3.07E+01
	24	1332.23	1326 -	1339	1.06E+04	215.52	4.19E+02	5.21E+01
	25	1589.91	1569 -	1607	6.30E+01	72.68	2.34E+02	5.83E+01
	26	1685.35	1681 -	1689	2.06E+01	17.61	3.28E+01	1.24E+01
	27	1693.05	1689 -	1697	1.42E+01	18.72	4.55E+01	1.41E+01
	28	1748.54	1743 -	1757	1.76E+01	22.39	4.68E+01	1.71E+01
	29	1835.27	1830 -	1840	3.00E+01	21.21	4.40E+01	1.49E+01
	30	2007.98	2005 -	2010	8.08E+00	9.38	9.85E+00	6.13E+00
	31	2089.41	2085 -	2094	1.49E+01	15.26	2.43E+01	1.08E+01

Analysis Report for 1707091-01

GAS-1402

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
32	2151.81	2149 -	2154	1.05E+01	10.00	1.10E+01	6.26E+00
33	2505.09	2501 -	2509	6.70E+01	16.37	0.00E+00	0.00E+00
34	2614.27	2610 -	2619	1.20E+01	6.93	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 : 8/24/2017 12:28:20PM

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

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

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	1	22.42	19 -	25	21.46	8.67E+04	807.79	5.62E+04	.....
	2	31.92	29 -	34	30.96	1.49E+03	239.58	1.04E+04	.....
M	3	50.51	42 -	62	49.56	1.32E+04	685.25	4.00E+04	TH-227
									TE-132
m	4	54.91	42 -	62	53.96	1.02E+04	679.39	2.85E+04	.....
m	5	59.35	42 -	62	58.41	8.12E+04	653.60	1.66E+04	AM-241
	6	67.67	64 -	70	66.73	6.84E+02	315.12	1.77E+04	TH-230
									TA-182
									TI-44
									HF-172
									TM-171
	7	87.87	80 -	92	86.93	2.62E+04	581.71	2.73E+04	CD-109
									SN-126
									LU-176
	8	122.02	115 -	125	121.09	4.00E+03	363.44	1.55E+04	CO-57
									EU-152
									SE-75
	9	136.51	132 -	139	135.59	5.66E+02	251.48	1.02E+04	CO-57
									SE-75
	10	165.98	162 -	169	165.07	3.98E+02	236.03	8.99E+03	CE-139
	11	174.16	171 -	176	173.25	2.03E+02	182.83	6.53E+03	.....
	12	280.65	277 -	283	279.77	2.24E+02	177.97	5.59E+03	HO-166M
	13	308.50	304 -	311	307.63	2.10E+02	190.97	5.95E+03	IR-192

Analysis Report for 1707091-01

GAS-1402

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
14	397.10	394 -	399	396.26	1.18E+02	144.11	4.04E+03	.....
15	420.19	417 -	422	419.36	1.25E+02	143.28	4.02E+03	.....
16	511.25	508 -	514	510.45	1.35E+02	135.08	3.21E+03	.....
17	661.52	654 -	666	660.78	1.54E+04	309.41	4.03E+03	CS-137
18	677.83	675 -	679	677.10	7.35E+01	81.44	1.39E+03	AG-110M
19	883.76	881 -	885	883.11	8.15E+01	94.94	1.93E+03	AG-110M
20	1043.27	1039 -	1046	1042.69	1.27E+02	122.15	2.38E+03	.....
21	1119.93	1117 -	1122	1119.38	9.25E+01	86.52	1.39E+03	BI-214 SC-46
22	1172.98	1166 -	1179	1172.47	1.18E+04	256.58	2.06E+03	CO-60
23	1249.95	1246 -	1252	1249.47	3.30E+01	39.12	2.52E+02	.....
24	1332.23	1326 -	1339	1331.79	1.06E+04	215.52	4.19E+02	CO-60
25	1589.91	1569 -	1607	1589.61	6.30E+01	72.68	2.34E+02	.....
26	1685.35	1681 -	1689	1685.10	2.06E+01	17.61	3.28E+01	.....
27	1693.05	1689 -	1697	1692.80	1.42E+01	18.72	4.55E+01	.....
28	1748.54	1743 -	1757	1748.31	1.76E+01	22.39	4.68E+01	.....
29	1835.27	1830 -	1840	1835.10	3.00E+01	21.21	4.40E+01	Y-88
30	2007.98	2005 -	2010	2007.90	8.08E+00	9.38	9.85E+00	.....
31	2089.41	2085 -	2094	2089.39	1.49E+01	15.26	2.43E+01	.....
32	2151.81	2149 -	2154	2151.83	1.05E+01	10.00	1.10E+01	.....
33	2505.09	2501 -	2509	2505.33	6.70E+01	16.37	0.00E+00	.....
34	2614.27	2610 -	2619	2614.58	1.20E+01	6.93	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 : 8/24/2017 12:28:20PM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	22.42	8.67E+04	807.79	3.86E-03	1.56E-03
	2	31.92	1.49E+03	239.58	9.03E-03	1.56E-03
M	3	50.51	1.32E+04	685.25	1.80E-02	1.56E-03
m	4	54.91	1.02E+04	679.39	1.95E-02	1.56E-03
m	5	59.35	8.12E+04	653.60	2.07E-02	1.56E-03
	6	67.67	6.84E+02	315.12	2.23E-02	1.73E-03
	7	87.87	2.62E+04	581.71	2.37E-02	2.16E-03
	8	122.02	4.00E+03	363.44	2.21E-02	1.65E-03

Analysis Report for 1707091-01

GAS-1402

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
9	136.51	5.66E+02	251.48	2.09E-02	1.60E-03
10	165.98	3.98E+02	236.03	1.85E-02	1.49E-03
11	174.16	2.03E+02	182.83	1.78E-02	1.45E-03
12	280.65	2.24E+02	177.97	1.16E-02	9.44E-04
13	308.50	2.10E+02	190.97	1.06E-02	8.85E-04
14	397.10	1.18E+02	144.11	8.13E-03	7.08E-04
15	420.19	1.25E+02	143.28	7.67E-03	6.99E-04
16	511.25	1.35E+02	135.08	6.28E-03	6.61E-04
17	661.52	1.54E+04	309.41	4.87E-03	5.99E-04
18	677.83	7.35E+01	81.44	4.76E-03	5.78E-04
19	883.76	8.15E+01	94.94	3.72E-03	3.20E-04
20	1043.27	1.27E+02	122.15	3.21E-03	2.68E-04
21	1119.93	9.25E+01	86.52	3.02E-03	2.50E-04
22	1172.98	1.18E+04	256.58	2.90E-03	2.38E-04
23	1249.95	3.30E+01	39.12	2.74E-03	2.33E-04
24	1332.23	1.06E+04	215.52	2.59E-03	2.27E-04
25	1589.91	6.30E+01	72.68	2.21E-03	1.88E-04
26	1685.35	2.06E+01	17.61	2.09E-03	1.74E-04
27	1693.05	1.42E+01	18.72	2.08E-03	1.73E-04
28	1748.54	1.76E+01	22.39	2.02E-03	1.64E-04
29	1835.27	3.00E+01	21.21	1.92E-03	1.51E-04
30	2007.98	8.08E+00	9.38	1.75E-03	1.51E-04
31	2089.41	1.49E+01	15.26	1.68E-03	1.51E-04
32	2151.81	1.05E+01	10.00	1.63E-03	1.51E-04
33	2505.09	6.70E+01	16.37	1.35E-03	1.51E-04
34	2614.27	1.20E+01	6.93	1.28E-03	1.51E-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 : 8/24/2017 12:28:20PM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000055576.CNF

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	1	22.42	8.67E+04	807.79	2.18E+01	1.83E+00	8.67E+04	8.08E+02
	2	31.92	1.49E+03	239.58			1.49E+03	2.40E+02
M	3	50.51	1.32E+04	685.25			1.32E+04	6.85E+02
m	4	54.91	1.02E+04	679.39			1.02E+04	6.79E+02

Analysis Report for 1707091-01

GAS-1402

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
m	5	59.35	8.12E+04	653.60			8.12E+04	6.54E+02
	6	67.67	6.84E+02	315.12			6.84E+02	3.15E+02
	7	87.87	2.62E+04	581.71			2.62E+04	5.82E+02
	8	122.02	4.00E+03	363.44			4.00E+03	3.63E+02
	9	136.51	5.66E+02	251.48			5.66E+02	2.51E+02
	10	165.98	3.98E+02	236.03			3.98E+02	2.36E+02
	11	174.16	2.03E+02	182.83			2.03E+02	1.83E+02
	12	280.65	2.24E+02	177.97			2.24E+02	1.78E+02
	13	308.50	2.10E+02	190.97			2.10E+02	1.91E+02
	14	397.10	1.18E+02	144.11			1.18E+02	1.44E+02
	15	420.19	1.25E+02	143.28			1.25E+02	1.43E+02
	16	511.25	1.35E+02	135.08	2.28E+01	2.50E+00	1.13E+02	1.35E+02
	17	661.52	1.54E+04	309.41			1.54E+04	3.09E+02
	18	677.83	7.35E+01	81.44			7.35E+01	8.14E+01
	19	883.76	8.15E+01	94.94			8.15E+01	9.49E+01
	20	1043.27	1.27E+02	122.15			1.27E+02	1.22E+02
	21	1119.93	9.25E+01	86.52			9.25E+01	8.65E+01
	22	1172.98	1.18E+04	256.58			1.18E+04	2.57E+02
	23	1249.95	3.30E+01	39.12			3.30E+01	3.91E+01
	24	1332.23	1.06E+04	215.52			1.06E+04	2.16E+02
	25	1589.91	6.30E+01	72.68			6.30E+01	7.27E+01
	26	1685.35	2.06E+01	17.61			2.06E+01	1.76E+01
	27	1693.05	1.42E+01	18.72			1.42E+01	1.87E+01
	28	1748.54	1.76E+01	22.39			1.76E+01	2.24E+01
	29	1835.27	3.00E+01	21.21			3.00E+01	2.12E+01
	30	2007.98	8.08E+00	9.38			8.08E+00	9.38E+00
	31	2089.41	1.49E+01	15.26			1.49E+01	1.53E+01
	32	2151.81	1.05E+01	10.00			1.05E+01	1.00E+01
	33	2505.09	6.70E+01	16.37			6.70E+01	1.64E+01
	34	2614.27	1.20E+01	6.93			1.20E+01	6.93E+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 : 8/24/2017 12:28:20PM

Ref. Peak Energy : 0.00 Reference Date :
Peak Ratio : 0.00 Uncertainty : 0.00
Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000055576.CNF

Corrected Area is: Original * Peak Ratio - Background

Analysis Report for 1707091-01

GAS-1402

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	1	22.42	8.67E+04	807.79	2.18E+01	1.83E+00	8.67E+04	8.08E+02
	2	31.92	1.49E+03	239.58			1.49E+03	2.40E+02
M	3	50.51	1.32E+04	685.25			1.32E+04	6.85E+02
m	4	54.91	1.02E+04	679.39			1.02E+04	6.79E+02
m	5	59.35	8.12E+04	653.60			8.12E+04	6.54E+02
	6	67.67	6.84E+02	315.12			6.84E+02	3.15E+02
	7	87.87	2.62E+04	581.71			2.62E+04	5.82E+02
	8	122.02	4.00E+03	363.44			4.00E+03	3.63E+02
	9	136.51	5.66E+02	251.48			5.66E+02	2.51E+02
	10	165.98	3.98E+02	236.03			3.98E+02	2.36E+02
	11	174.16	2.03E+02	182.83			2.03E+02	1.83E+02
	12	280.65	2.24E+02	177.97			2.24E+02	1.78E+02
	13	308.50	2.10E+02	190.97			2.10E+02	1.91E+02
	14	397.10	1.18E+02	144.11			1.18E+02	1.44E+02
	15	420.19	1.25E+02	143.28			1.25E+02	1.43E+02
	16	511.25	1.35E+02	135.08	2.28E+01	2.50E+00	1.13E+02	1.35E+02
	17	661.52	1.54E+04	309.41			1.54E+04	3.09E+02
	18	677.83	7.35E+01	81.44			7.35E+01	8.14E+01
	19	883.76	8.15E+01	94.94			8.15E+01	9.49E+01
	20	1043.27	1.27E+02	122.15			1.27E+02	1.22E+02
	21	1119.93	9.25E+01	86.52			9.25E+01	8.65E+01
	22	1172.98	1.18E+04	256.58			1.18E+04	2.57E+02
	23	1249.95	3.30E+01	39.12			3.30E+01	3.91E+01
	24	1332.23	1.06E+04	215.52			1.06E+04	2.16E+02
	25	1589.91	6.30E+01	72.68			6.30E+01	7.27E+01
	26	1685.35	2.06E+01	17.61			2.06E+01	1.76E+01
	27	1693.05	1.42E+01	18.72			1.42E+01	1.87E+01
	28	1748.54	1.76E+01	22.39			1.76E+01	2.24E+01
	29	1835.27	3.00E+01	21.21			3.00E+01	2.12E+01
	30	2007.98	8.08E+00	9.38			8.08E+00	9.38E+00
	31	2089.41	1.49E+01	15.26			1.49E+01	1.53E+01
	32	2151.81	1.05E+01	10.00			1.05E+01	1.00E+01
	33	2505.09	6.70E+01	16.37			6.70E+01	1.64E+01
	34	2614.27	1.20E+01	6.93			1.20E+01	6.93E+00

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

NUCLIDE IDENTIFICATION REPORT

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

IDENTIFIED NUCLIDES

Analysis Report for 1707091-01

GAS-1402

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
CO-57	0.926	122.06	*	85.51	6.48E+01	7.66E+00
		136.48	*	10.60	7.80E+01	3.53E+01
CO-60	0.989	1173.22	*	100.00	1.21E+02	1.03E+01
		1332.49	*	100.00	1.22E+02	1.10E+01
CD-109	0.970	88.03	*	3.72	2.95E+03	3.28E+02
SN-126	0.986	87.57	*	37.00	6.11E+01	5.74E+00
CS-137	0.997	661.65	*	85.12	8.09E+01	1.01E+01
CE-139	0.742	165.85	*	80.35	1.13E+02	6.74E+01
TM-171	0.855	66.72	*	0.14	1.27E+03	5.94E+02
AM-241	0.995	59.54	*	35.90	2.24E+02	1.70E+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 : 8/24/2017 12:28:20PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	22.42	4.81577E+01	0.47		
	2	31.92	8.28614E-01	8.03		
M	3	50.51	7.33022E+00	2.60	Tol.	TE-132 TH-227
m	4	54.91	5.68080E+00	3.32		
	11	174.16	1.12617E-01	45.10		
	12	280.65	1.24198E-01	39.80	Tol.	HO-166M
	13	308.50	1.16825E-01	45.41	Tol.	IR-192
	14	397.10	6.55006E-02	61.12		
	15	420.19	6.91892E-02	57.52		
	16	511.25	6.25435E-02	60.00		
	18	677.83	4.08229E-02	55.41	Tol.	AG-110M
	19	883.76	4.52730E-02	58.25	Tol.	AG-110M
	20	1043.27	7.05094E-02	48.12		
	21	1119.93	5.14040E-02	46.75	Tol.	BI-214
	23	1249.95	1.83211E-02	59.31		
	25	1589.91	3.50000E-02	57.69		
	26	1685.35	1.14414E-02	42.75		

Analysis Report for 1707091-01

GAS-1402

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
27	1693.05	7.91291E-03	65.72		
28	1748.54	9.76965E-03	63.67		
29	1835.27	1.66667E-02	35.36	Sum	
30	2007.98	4.48718E-03	58.07		
31	2089.41	8.25103E-03	51.39		
32	2151.81	5.83333E-03	47.62		
33	2505.09	3.72222E-02	12.22	Sum	
34	2614.27	6.66667E-03	28.87	Tol.	TL-208

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

NUCLIDE IDENTIFICATION REPORT

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

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
CO-57	0.92	122.06	*	85.51	6.48E+01	7.66E+00
		136.48	*	10.60	7.80E+01	3.53E+01
CO-60	0.98	1173.22	*	100.00	1.21E+02	1.03E+01
		1332.49	*	100.00	1.22E+02	1.10E+01
CD-109	0.97	88.03	*	3.72	2.95E+03	3.28E+02
SN-126	0.98	87.57	*	37.00	6.11E+01	5.74E+00
CS-137	0.99	661.65	*	85.12	8.09E+01	1.01E+01
CE-139	0.74	165.85	*	80.35	1.13E+02	6.74E+01
TM-171	0.85	66.72	*	0.14	1.27E+03	5.94E+02
AM-241	0.99	59.54	*	35.90	2.24E+02	1.70E+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 1707091-01

GAS-1402

INTERFERENCE CORRECTED REPORT

	Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
	CO-57	0.926	6.54E+01	7.49E+00	
	CO-60	0.989	1.22E+02	7.53E+00	
?	CD-109	0.970	2.95E+03	3.28E+02	
?	SN-126	0.986	6.11E+01	5.74E+00	
	CS-137	0.997	8.09E+01	1.01E+01	
	CE-139	0.742	1.13E+02	6.74E+01	
	TM-171	0.855	1.27E+03	5.94E+02	
	AM-241	0.995	2.24E+02	1.70E+01	

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

Errors quoted at 2.000sigma

Analysis Report for 1707091-01

GAS-1402

UNIDENTIFIED PEAKS

Peak Locate Performed on : 8/24/2017 12:28:20PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	22.42	4.81577E+01	0.47		
	2	31.92	8.28614E-01	8.03		
M	3	50.51	7.33022E+00	2.60	Tol.	TE-132 TH-227
m	4	54.91	5.68080E+00	3.32		
	11	174.16	1.12617E-01	45.10		
	12	280.65	1.24198E-01	39.80	Tol.	HO-166M
	13	308.50	1.16825E-01	45.41	Tol.	IR-192
	14	397.10	6.55006E-02	61.12		
	15	420.19	6.91892E-02	57.52		
	16	511.25	6.25435E-02	60.00		
	18	677.83	4.08229E-02	55.41	Tol.	AG-110M
	19	883.76	4.52730E-02	58.25	Tol.	AG-110M
	20	1043.27	7.05094E-02	48.12		
	21	1119.93	5.14040E-02	46.75	Tol.	BI-214
	23	1249.95	1.83211E-02	59.31		
	25	1589.91	3.50000E-02	57.69		
	26	1685.35	1.14414E-02	42.75		
	27	1693.05	7.91291E-03	65.72		
	28	1748.54	9.76965E-03	63.67		
	29	1835.27	1.66667E-02	35.36	Sum	
	30	2007.98	4.48718E-03	58.07		
	31	2089.41	8.25103E-03	51.39		
	32	2151.81	5.83333E-03	47.62		
	33	2505.09	3.72222E-02	12.22	Sum	
	34	2614.27	6.66667E-03	28.87	Tol.	TL-208

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

Analysis Report for 1707091-01

GAS-1402

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	3.41E+06	6.00E+06	6.00E+06
+	NA-22	1274.54		99.94	8.25E-01	1.21E+00	1.21E+00
+	@ NA-24	1368.53		99.99	1.00E+26	1.00E+26	1.00E+26
	@	2754.09		99.86	1.00E+26		1.00E+26
+	AL-26	1808.65		99.76	2.38E-02	2.72E-01	2.72E-01
+	K-40	1460.81		10.67	1.75E+00	3.27E+00	3.27E+00
+	@ AR-41	1293.64		99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88		94.40	9.43E-01	4.29E-01	4.56E-01
		78.34		96.00	2.08E-02		4.29E-01
+	SC-46	889.25		99.98	-1.46E+03	6.83E+03	7.06E+03
		1120.51		99.99	-2.81E+03		6.83E+03
+	@ V-48	983.52		99.98	1.00E+26	1.00E+26	1.00E+26
	@	1312.10		97.50	1.00E+26		1.00E+26
+	CR-51	320.08		9.83	-7.58E+11	1.52E+12	1.52E+12
+	MN-54	834.83		99.97	5.83E+00	1.03E+01	1.03E+01
+	CO-56	846.75		99.96	6.60E+03	7.61E+03	1.14E+04
		1037.75		14.03	-2.58E+04		9.00E+04
		1238.25		67.00	5.26E+03		9.53E+03
		1771.40		15.51	-1.06E+04		1.76E+04
		2598.48		16.90	-1.03E+03		7.61E+03
+	CO-57	122.06	*	85.51	6.48E+01	9.11E+00	9.11E+00
		136.48	*	10.60	7.80E+01		5.63E+01
+	CO-58	810.76		99.40	2.72E+03	2.95E+04	2.95E+04
+	FE-59	1099.22		56.50	5.05E+06	1.56E+07	2.87E+07
		1291.56		43.20	-7.61E+06		1.56E+07
+	CO-60	1173.22	*	100.00	1.21E+02	1.23E+00	2.35E+00
		1332.49	*	100.00	1.22E+02		1.23E+00
+	ZN-65	1115.52		50.75	4.88E+00	4.63E+01	4.63E+01
+	@ GA-67	93.31		35.70	1.00E+26	1.00E+26	1.00E+26
	@	208.95		2.24	1.00E+26		1.00E+26
	@	300.22		16.00	1.00E+26		1.00E+26
+	SE-75	121.11		16.70	1.02E+04	2.49E+02	1.11E+03
		136.00		59.20	3.61E+02		2.49E+02
		264.65		59.80	-9.05E+01		3.31E+02
		279.53		25.20	6.31E+02		8.21E+02
		400.65		11.40	1.47E+02		2.33E+03
+	RB-82	776.52		13.00	6.21E+11	2.00E+13	2.00E+13
+	RB-83	520.41		46.00	-7.65E+02	6.78E+03	6.78E+03
		529.64		30.30	1.30E+03		1.03E+04
		552.65		16.40	1.57E+03		1.91E+04

Analysis Report for 1707091-01

GAS-1402

		Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+		KR-85	513.99		0.43	-9.08E+00	1.77E+02	1.77E+02
+		SR-85	513.99		99.27	-2.69E+03	5.22E+04	5.22E+04
+		Y-88	898.02		93.40	7.81E+01	3.63E+02	1.20E+03
			1836.01		99.38	2.99E+02		3.63E+02
+		MO-93	263.06		56.72	2.56E-02	3.80E-01	9.26E-01
			684.67		99.68	3.66E-01		9.22E-01
			1477.11		99.08	-6.74E-02		3.80E-01
+		NB-93M	16.57		9.43	-3.84E+03	8.38E+01	8.38E+01
+		NB-94	702.63		100.00	5.16E-01	7.89E-01	7.89E-01
			871.10		100.00	-4.76E-01		1.07E+00
+		NB-95	765.79		99.81	2.27E+08	1.08E+09	1.08E+09
+	@	NB-95M	235.69		25.00	1.00E+26	1.00E+26	1.00E+26
+		ZR-95	724.18		43.70	-1.01E+05	1.46E+05	1.73E+05
			756.72		55.30	-1.62E+04		1.46E+05
+	@	MO-99	181.06		6.20	1.00E+26	1.00E+26	1.00E+26
	@		739.58		12.80	1.00E+26		1.00E+26
	@		778.00		4.50	1.00E+26		1.00E+26
+		RU-103	497.08		89.00	2.03E+07	8.82E+07	8.82E+07
+		RU-106	621.84		9.80	-5.43E+00	4.95E+01	4.95E+01
+		AG-108M	433.93		89.90	2.65E-01	7.23E-01	7.23E-01
			614.37		90.40	-1.06E-01		7.33E-01
			722.95		90.50	-7.26E-01		8.98E-01
+		CD-109	88.03	*	3.72	2.95E+03	8.97E+01	8.97E+01
+		AG-110M	657.75		93.14	7.06E+02	2.41E+01	4.55E+01
			677.61		10.53	6.48E+00		1.36E+02
			706.67		16.46	-3.05E+01		8.81E+01
			763.93		21.98	-2.38E+01		7.49E+01
			884.67		71.63	1.67E+01		2.95E+01
			1384.27		23.94	9.77E+00		2.41E+01
+		CD-113M	263.70		0.02	-8.00E+02	2.18E+03	2.18E+03
+		SN-113	255.12		1.93	5.10E+00	5.25E+02	1.31E+04
			391.69		64.90	-1.41E+02		5.25E+02
+		TE123M	159.00		84.10	-4.26E+01	1.75E+02	1.75E+02
+		SB-124	602.71		97.87	-8.84E+03	1.27E+05	1.28E+05
			645.85		7.26	-9.66E+05		1.85E+06
			722.78		11.10	-1.14E+06		1.41E+06
			1691.02		49.00	1.32E+04		1.27E+05
+		I-125	35.49		6.49	-6.22E+05	2.19E+06	2.19E+06
+		SB-125	176.33		6.89	-1.36E+00	4.40E+00	1.03E+01
			427.89		29.33	2.94E-02		4.40E+00
			463.38		10.35	3.33E+00		1.41E+01
			600.56		17.80	4.38E-01		7.44E+00
			635.90		11.32	-6.58E+00		1.20E+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	6.11E+01	1.86E+00	1.86E+00

Analysis Report for 1707091-01

GAS-1402

		Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	@	SB-127	473.00		25.00	1.00E+26	1.00E+26	1.00E+26
	@		685.20		35.70	1.00E+26		1.00E+26
	@		783.80		14.70	1.00E+26		1.00E+26
+		I-129	29.78		57.00	-2.24E+01	1.97E+00	1.97E+00
			33.60		13.20	1.62E+00		6.40E+00
			39.58		7.52	-2.44E+01		8.53E+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	-1.13E-01	1.06E+00	1.47E+00
			302.84		17.80	1.21E+00		3.17E+00
			356.01		60.00	2.95E-01		1.06E+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	-3.32E+00	1.76E+00	1.98E+01
			569.32		15.43	-2.40E+00		1.07E+01
			604.70		97.60	2.34E-01		1.76E+00
			795.84		85.40	-3.38E-01		2.87E+00
			801.93		8.73	2.37E+01		2.86E+01
+		CS-135	268.24		16.00	-2.08E-01	2.73E+00	2.73E+00
+	@	I-135	1131.51		22.50	1.00E+26	1.00E+26	1.00E+26
	@		1260.41		28.60	1.00E+26		1.00E+26
	@		1678.03		9.54	1.00E+26		1.00E+26
+	@	CS-136	153.22		7.46	1.00E+26	1.00E+26	1.00E+26
	@		163.89		4.61	1.00E+26		1.00E+26
	@		176.55		13.56	1.00E+26		1.00E+26
	@		273.65		12.66	1.00E+26		1.00E+26
	@		340.57		48.50	1.00E+26		1.00E+26
	@		818.50		99.70	1.00E+26		1.00E+26
	@		1048.07		79.60	1.00E+26		1.00E+26
	@		1235.34		19.70	1.00E+26		1.00E+26
+		CS-137	661.65	*	85.12	8.09E+01	1.61E+00	1.61E+00
+		LA-138	788.74		34.00	-2.23E+00	4.01E-01	2.63E+00
			1435.80		66.00	-7.41E-02		4.01E-01
+		CE-139	165.85	*	80.35	1.13E+02	1.09E+02	1.09E+02
+	@	BA-140	162.64		6.70	1.00E+26	1.00E+26	1.00E+26
	@		304.84		4.50	1.00E+26		1.00E+26
	@		423.70		3.20	1.00E+26		1.00E+26
	@		437.55		2.00	1.00E+26		1.00E+26
	@		537.32		25.00	1.00E+26		1.00E+26
+	@	LA-140	328.77		20.50	1.00E+26	1.00E+26	1.00E+26
	@		487.03		45.50	1.00E+26		1.00E+26
	@		815.85		23.50	1.00E+26		1.00E+26
	@		1596.49		95.49	1.00E+26		1.00E+26
+		CE-141	145.44		48.40	1.71E+09	4.09E+09	4.09E+09

Analysis Report for 1707091-01

GAS-1402

		Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	@	CE-143	57.36		11.80	1.00E+26	1.00E+26	1.00E+26
	@		293.26		42.00	1.00E+26		1.00E+26
	@		664.55		5.20	1.00E+26		1.00E+26
+		CE-144	133.54		10.80	1.76E+00	3.88E+01	3.88E+01
+		PM-144	476.78		42.00	7.13E+00	4.93E+00	1.25E+01
			618.01		98.60	-2.80E+00		4.93E+00
			696.49		99.49	2.55E+00		5.90E+00
+		PM-145	36.85		21.70	-4.10E+00	1.83E+00	3.42E+00
			37.36		39.70	-2.19E+00		1.83E+00
			42.30		15.10	-8.72E+00		4.68E+00
			72.40		2.31	-3.35E+00		1.98E+01
+		PM-146	453.90		39.94	1.53E+00	2.48E+00	2.48E+00
			735.90		14.01	4.61E+00		8.52E+00
			747.13		13.10	2.99E+00		9.35E+00
+	@	ND-147	91.11		28.90	1.00E+26	1.00E+26	1.00E+26
	@		531.02		13.10	1.00E+26		1.00E+26
+	@	PM-149	285.90		3.10	1.00E+26	1.00E+26	1.00E+26
+		EU-152	121.78		20.50	2.15E+01	2.31E+00	2.31E+00
			244.69		5.40	4.06E+00		9.43E+00
			344.27		19.13	-3.53E-01		3.11E+00
			778.89		9.20	-2.36E+00		1.12E+01
			964.01		10.40	5.91E-01		1.39E+01
			1085.78		7.22	-9.67E+00		1.86E+01
			1112.02		9.60	1.17E+01		1.47E+01
			1407.95		14.94	5.00E-01		2.33E+00
+		GD-153	97.43		31.30	-1.39E+00	1.91E+01	1.91E+01
			103.18		22.20	4.06E+00		2.69E+01
+		EU-154	123.07		40.50	1.22E+01	1.27E+00	1.27E+00
			723.30		19.70	-2.99E+00		5.10E+00
			873.19		11.50	4.53E+00		1.19E+01
			996.32		10.30	1.56E+01		1.42E+01
			1004.76		17.90	-7.08E+00		7.76E+00
			1274.45		35.50	1.35E+00		1.98E+00
+		EU-155	86.50		30.90	1.09E+02	2.08E+00	3.57E+00
			105.30		20.70	-1.03E+00		2.08E+00
+	@	EU-156	811.77		10.40	1.00E+26	1.00E+26	1.00E+26
	@		1153.47		7.20	1.00E+26		1.00E+26
	@		1230.71		8.90	1.00E+26		1.00E+26
+		HO-166M	184.41		72.60	1.42E-02	5.05E-01	5.05E-01
			280.45		29.60	6.13E-01		1.54E+00
			410.94		11.10	7.23E-01		5.38E+00
			711.69		54.10	-1.72E+00		1.43E+00
+		TM-171	66.72	*	0.14	1.27E+03	9.56E+02	9.56E+02
+		HF-172	67.35		5.31	-5.13E+00	8.76E+00	2.28E+01
			125.81		11.30	-7.25E-01		8.76E+00
+	@	LU-172	181.53		20.60	1.00E+26	1.00E+26	1.00E+26
	@		900.72		29.81	1.00E+26		1.00E+26
	@		1093.66		62.50	1.00E+26		1.00E+26
+		LU-173	100.72		5.24	1.24E+01	8.98E+00	2.37E+01

Analysis Report for 1707091-01

GAS-1402

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	LU-173	272.11	21.20	1.16E+00	8.98E+00	8.98E+00
+	HF-175	343.40	84.00	-2.45E+03	2.16E+04	2.16E+04
+	LU-176	88.34	13.30	1.66E+02	4.53E-01	5.47E+00
		201.83	86.00	1.09E-01		4.53E-01
		306.78	94.00	1.48E-01		5.08E-01
+	HF-181	133.02	41.70	6.14E+05	2.41E+07	2.41E+07
		345.85	17.20	3.63E+07		9.78E+07
		482.03	82.80	-1.25E+06		2.56E+07
+	TA-182	67.75	41.20	1.27E+03	6.15E+02	6.15E+02
		1121.30	34.90	3.67E+00		1.88E+03
		1189.05	16.23	5.20E+01		2.91E+03
		1221.41	26.98	-1.87E+02		1.39E+03
		1231.02	11.44	3.12E+02		3.08E+03
+	IR-192	308.46	29.68	2.88E+04	2.98E+04	3.28E+04
		468.07	48.10	2.32E+03		2.98E+04
+	HG-203	279.19	77.30	-5.37E+05	4.00E+06	4.00E+06
+	TL-204	374.74	94.11	-1.89E-01	9.77E-01	9.77E-01
		899.15	99.16	-4.44E-01		1.97E+00
		911.74	91.10	7.59E-01		2.18E+00
+	BI-207	569.67	97.72	-1.52E-01	6.79E-01	6.79E-01
		1063.62	74.90	-8.82E-01		1.63E+00
+	TL-208	583.14	30.22	4.77E-01	8.37E-01	2.15E+00
		860.37	4.48	6.42E+00		2.34E+01
		2614.66	35.85	4.53E-01		8.37E-01
+	BI-210M	262.00	45.00	2.24E-01	9.72E-01	9.72E-01
		300.00	23.00	1.33E+00		2.04E+00
+	PB-210	46.50	4.25	1.03E+01	2.01E+01	2.01E+01
+	PB-211	404.84	2.90	4.36E+00	2.03E+01	2.03E+01
		831.96	2.90	-1.86E+01		3.32E+01
+	BI-212	727.17	11.80	-4.34E+00	6.81E+00	6.81E+00
		1620.62	2.75	1.14E+00		1.16E+01
+	PB-212	238.63	44.60	9.75E-01	1.01E+00	1.01E+00
		300.09	3.41	8.94E+00		1.38E+01
+	BI-214	609.31	46.30	2.84E-01	1.42E+00	1.42E+00
		1120.29	15.10	-2.96E+00		7.19E+00
		1764.49	15.80	6.91E-01		1.90E+00
		2204.22	4.98	-5.75E-01		5.68E+00
+	PB-214	295.21	19.19	1.27E+00	1.39E+00	2.43E+00
		351.92	37.19	-5.78E-01		1.39E+00
+	RN-219	401.80	6.50	2.85E+00	8.96E+00	8.96E+00
+	RA-223	323.87	3.88	2.62E+00	1.26E+01	1.26E+01
+	RA-224	240.98	3.95	7.23E+00	1.14E+01	1.14E+01
+	@ RA-225	40.00	31.00	1.00E+26	1.00E+26	1.00E+26
+	RA-226	186.21	3.28	2.23E-02	1.13E+01	1.13E+01
+	TH-227	50.10	8.40	4.82E+01	3.84E+00	9.90E+00
		236.00	11.50	-2.14E-01		3.84E+00
		256.20	6.30	-1.89E+00		6.90E+00
+	AC-228	338.32	11.40	1.76E+00	4.22E+00	4.48E+00

Analysis Report for 1707091-01

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	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	AC-228	911.07		27.70	1.79E+00	4.22E+00	4.22E+00
		969.11		16.60	2.17E+00		7.23E+00
+	TH-230	48.44		16.90	1.51E+01	4.68E+00	4.68E+00
		62.85		4.60	4.26E+02		2.05E+01
		67.67		0.37	2.33E+02		1.13E+02
+	PA-231	283.67		1.60	6.33E+00	2.02E+01	2.85E+01
		302.67		2.30	7.74E+00		2.02E+01
+	TH-231	25.64		14.70	-1.23E+02	8.12E+00	2.73E+01
		84.21		6.40	-2.22E+02		8.12E+00
+	PA-233	311.98		38.60	-2.23E+10	7.86E+11	7.86E+11
+	PA-234	131.20		20.40	-3.30E-02	1.47E+00	1.47E+00
		733.99		8.80	-5.76E-01		9.39E+00
		946.00		12.00	2.64E+00		1.09E+01
+	PA-234M	1001.03		0.92	4.93E+00	1.24E+02	1.24E+02
+	TH-234	63.29		3.80	5.14E+02	2.48E+01	2.48E+01
+	U-235	143.76		10.50	-1.77E+00	2.96E+00	2.96E+00
		163.35		4.70	-1.20E-02		7.15E+00
		205.31		4.70	-7.32E+00		8.34E+00
+	NP-237	86.50		12.60	1.78E+02	5.85E+00	5.85E+00
+	@ NP-239	106.10		22.70	1.00E+26	1.00E+26	1.00E+26
	@	228.18		10.70	1.00E+26		1.00E+26
	@	277.60		14.10	1.00E+26		1.00E+26
+	AM-241	59.54	*	35.90	2.24E+02	3.46E+00	3.46E+00
+	AM-243	74.67		66.00	-4.88E-03	6.10E-01	6.10E-01
+	CM-243	209.75		3.29	1.44E+00	3.43E+00	1.33E+01
		228.14		10.60	2.24E+00		4.42E+00
		277.60		14.00	-8.45E-01		3.43E+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

Analysis Report for 1707091-01

GAS-1402

	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	6.00E+06	6.00E+06	3.41E+06	2.97E+06
	NA-22	1274.54		99.94	1.21E+00	1.21E+00	8.25E-01	5.84E-01
@	NA-24	1368.53		99.99	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		2754.09		99.86	1.00E+26		1.00E+26	1.00E+20
	AL-26	1808.65		99.76	2.72E-01	2.72E-01	2.38E-02	1.22E-01
	K-40	1460.81		10.67	3.27E+00	3.27E+00	1.75E+00	1.53E+00
@	AR-41	1293.64		99.16	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	TI-44	67.88		94.40	4.56E-01	4.29E-01	9.43E-01	2.27E-01
		78.34		96.00	4.29E-01		2.08E-02	2.13E-01
	SC-46	889.25		99.98	7.06E+03	6.83E+03	-1.46E+03	3.49E+03
		1120.51		99.99	6.83E+03		-2.81E+03	3.36E+03
@	V-48	983.52		99.98	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		1312.10		97.50	1.00E+26		1.00E+26	1.00E+20
	CR-51	320.08		9.83	1.52E+12	1.52E+12	-7.58E+11	7.54E+11
	MN-54	834.83		99.97	1.03E+01	1.03E+01	5.83E+00	5.09E+00
	CO-56	846.75		99.96	1.14E+04	7.61E+03	6.60E+03	5.64E+03
		1037.75		14.03	9.00E+04		-2.58E+04	4.43E+04
		1238.25		67.00	9.53E+03		5.26E+03	4.60E+03
		1771.40		15.51	1.76E+04		-1.06E+04	7.79E+03
		2598.48		16.90	7.61E+03		-1.03E+03	2.41E+03
+	CO-57	122.06	*	85.51	9.11E+00	9.11E+00	6.48E+01	4.53E+00
		136.48	*	10.60	5.63E+01		7.80E+01	2.80E+01
	CO-58	810.76		99.40	2.95E+04	2.95E+04	2.72E+03	1.46E+04
	FE-59	1099.22		56.50	2.87E+07	1.56E+07	5.05E+06	1.41E+07
		1291.56		43.20	1.56E+07		-7.61E+06	7.45E+06
+	CO-60	1173.22	*	100.00	2.35E+00	1.23E+00	1.21E+02	1.16E+00
		1332.49	*	100.00	1.23E+00		1.22E+02	6.02E-01
	ZN-65	1115.52		50.75	4.63E+01	4.63E+01	4.88E+00	2.28E+01
@	GA-67	93.31		35.70	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		208.95		2.24	1.00E+26		1.00E+26	1.00E+20
@		300.22		16.00	1.00E+26		1.00E+26	1.00E+20
	SE-75	121.11		16.70	1.11E+03	2.49E+02	1.02E+04	5.53E+02
		136.00		59.20	2.49E+02		3.61E+02	1.23E+02
		264.65		59.80	3.31E+02		-9.05E+01	1.64E+02
		279.53		25.20	8.21E+02		6.31E+02	4.06E+02
		400.65		11.40	2.33E+03		1.47E+02	1.15E+03
	RB-82	776.52		13.00	2.00E+13	2.00E+13	6.21E+11	9.87E+12
	RB-83	520.41		46.00	6.78E+03	6.78E+03	-7.65E+02	3.34E+03
		529.64		30.30	1.03E+04		1.30E+03	5.09E+03
		552.65		16.40	1.91E+04		1.57E+03	9.42E+03
	KR-85	513.99		0.43	1.77E+02	1.77E+02	-9.08E+00	8.70E+01
	SR-85	513.99		99.27	5.22E+04	5.22E+04	-2.69E+03	2.58E+04
	Y-88	898.02		93.40	1.20E+03	3.63E+02	7.81E+01	5.92E+02
		1836.01		99.38	3.63E+02		2.99E+02	1.67E+02
	MO-93	263.06		56.72	9.26E-01	3.80E-01	2.56E-02	4.58E-01
		684.67		99.68	9.22E-01		3.66E-01	4.54E-01
		1477.11		99.08	3.80E-01		-6.74E-02	1.76E-01
	NB-93M	16.57		9.43	8.38E+01	8.38E+01	-3.84E+03	4.17E+01
	NB-94	702.63		100.00	7.89E-01	7.89E-01	5.16E-01	3.89E-01
		871.10		100.00	1.07E+00		-4.76E-01	5.26E-01
	NB-95	765.79		99.81	1.08E+09	1.08E+09	2.27E+08	5.31E+08

Analysis Report for 1707091-01

GAS-1402

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	@ NB-95M	235.69		25.00	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	ZR-95	724.18		43.70	1.73E+05	1.46E+05	-1.01E+05	8.52E+04
		756.72		55.30	1.46E+05		-1.62E+04	7.18E+04
	@ MO-99	181.06		6.20	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	@	739.58		12.80	1.00E+26		1.00E+26	1.00E+20
	@	778.00		4.50	1.00E+26		1.00E+26	1.00E+20
	RU-103	497.08		89.00	8.82E+07	8.82E+07	2.03E+07	4.35E+07
	RU-106	621.84		9.80	4.95E+01	4.95E+01	-5.43E+00	2.44E+01
	AG-108M	433.93		89.90	7.23E-01	7.23E-01	2.65E-01	3.57E-01
		614.37		90.40	7.33E-01		-1.06E-01	3.61E-01
		722.95		90.50	8.98E-01		-7.26E-01	4.42E-01
+	CD-109	88.03	*	3.72	8.97E+01	8.97E+01	2.95E+03	4.47E+01
	AG-110M	657.75		93.14	4.55E+01	2.41E+01	7.06E+02	2.27E+01
		677.61		10.53	1.36E+02		6.48E+00	6.67E+01
		706.67		16.46	8.81E+01		-3.05E+01	4.34E+01
		763.93		21.98	7.49E+01		-2.38E+01	3.69E+01
		884.67		71.63	2.95E+01		1.67E+01	1.45E+01
		1384.27		23.94	2.41E+01		9.77E+00	1.12E+01
	CD-113M	263.70		0.02	2.18E+03	2.18E+03	-8.00E+02	1.08E+03
	SN-113	255.12		1.93	1.31E+04	5.25E+02	5.10E+00	6.50E+03
		391.69		64.90	5.25E+02		-1.41E+02	2.59E+02
	TE123M	159.00		84.10	1.75E+02	1.75E+02	-4.26E+01	8.67E+01
	SB-124	602.71		97.87	1.28E+05	1.27E+05	-8.84E+03	6.32E+04
		645.85		7.26	1.85E+06		-9.66E+05	9.10E+05
		722.78		11.10	1.41E+06		-1.14E+06	6.92E+05
		1691.02		49.00	1.27E+05		1.32E+04	5.81E+04
	I-125	35.49		6.49	2.19E+06	2.19E+06	-6.22E+05	1.09E+06
	SB-125	176.33		6.89	1.03E+01	4.40E+00	-1.36E+00	5.12E+00
		427.89		29.33	4.40E+00		2.94E-02	2.17E+00
		463.38		10.35	1.41E+01		3.33E+00	6.99E+00
		600.56		17.80	7.44E+00		4.38E-01	3.66E+00
		635.90		11.32	1.20E+01		-6.58E+00	5.92E+00
	@ SB-126	414.70		83.30	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	@	666.33		99.60	1.00E+26		1.00E+26	1.00E+20
	@	695.00		99.60	1.00E+26		1.00E+26	1.00E+20
	@	720.50		53.80	1.00E+26		1.00E+26	1.00E+20
+	SN-126	87.57	*	37.00	1.86E+00	1.86E+00	6.11E+01	9.25E-01
	@ SB-127	473.00		25.00	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	@	685.20		35.70	1.00E+26		1.00E+26	1.00E+20
	@	783.80		14.70	1.00E+26		1.00E+26	1.00E+20
	I-129	29.78		57.00	1.97E+00	1.97E+00	-2.24E+01	9.78E-01
		33.60		13.20	6.40E+00		1.62E+00	3.18E+00
		39.58		7.52	8.53E+00		-2.44E+01	4.24E+00
	@ I-131	284.30		6.05	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	@	364.48		81.20	1.00E+26		1.00E+26	1.00E+20
	@	636.97		7.26	1.00E+26		1.00E+26	1.00E+20
	@	722.89		1.80	1.00E+26		1.00E+26	1.00E+20
	@ TE-132	49.72		13.10	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	@	228.16		88.00	1.00E+26		1.00E+26	1.00E+20
	BA-133	81.00		33.00	1.47E+00	1.06E+00	-1.13E-01	7.28E-01
		302.84		17.80	3.17E+00		1.21E+00	1.57E+00
		356.01		60.00	1.06E+00		2.95E-01	5.24E-01
	@ I-133	529.87		86.30	1.00E+26	1.00E+26	1.00E+26	1.00E+20

Analysis Report for 1707091-01

GAS-1402

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	@ XE-133	81.00		38.00	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	CS-134	563.23		8.38	1.98E+01	1.76E+00	-3.32E+00	9.73E+00
		569.32		15.43	1.07E+01		-2.40E+00	5.28E+00
		604.70		97.60	1.76E+00		2.34E-01	8.65E-01
		795.84		85.40	2.87E+00		-3.38E-01	1.42E+00
		801.93		8.73	2.86E+01		2.37E+01	1.41E+01
	CS-135	268.24		16.00	2.73E+00	2.73E+00	-2.08E-01	1.35E+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
	@ CS-136	153.22		7.46	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	@	163.89		4.61	1.00E+26		1.00E+26	1.00E+20
	@	176.55		13.56	1.00E+26		1.00E+26	1.00E+20
	@	273.65		12.66	1.00E+26		1.00E+26	1.00E+20
	@	340.57		48.50	1.00E+26		1.00E+26	1.00E+20
	@	818.50		99.70	1.00E+26		1.00E+26	1.00E+20
	@	1048.07		79.60	1.00E+26		1.00E+26	1.00E+20
	@	1235.34		19.70	1.00E+26		1.00E+26	1.00E+20.
+	CS-137	661.65	*	85.12	1.61E+00	1.61E+00	8.09E+01	8.00E-01
	LA-138	788.74		34.00	2.63E+00	4.01E-01	-2.23E+00	1.30E+00
		1435.80		66.00	4.01E-01		-7.41E-02	1.83E-01
+	CE-139	165.85	*	80.35	1.09E+02	1.09E+02	1.13E+02	5.41E+01
	@ BA-140	162.64		6.70	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	@	304.84		4.50	1.00E+26		1.00E+26	1.00E+20
	@	423.70		3.20	1.00E+26		1.00E+26	1.00E+20
	@	437.55		2.00	1.00E+26		1.00E+26	1.00E+20
	@	537.32		25.00	1.00E+26		1.00E+26	1.00E+20
	@ LA-140	328.77		20.50	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	@	487.03		45.50	1.00E+26		1.00E+26	1.00E+20
	@	815.85		23.50	1.00E+26		1.00E+26	1.00E+20
	@	1596.49		95.49	1.00E+26		1.00E+26	1.00E+20
	CE-141	145.44		48.40	4.09E+09	4.09E+09	1.71E+09	2.03E+09
	@ CE-143	57.36		11.80	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	@	293.26		42.00	1.00E+26		1.00E+26	1.00E+20
	@	664.55		5.20	1.00E+26		1.00E+26	1.00E+20
	CE-144	133.54		10.80	3.88E+01	3.88E+01	1.76E+00	1.92E+01
	PM-144	476.78		42.00	1.25E+01	4.93E+00	7.13E+00	6.18E+00
		618.01		98.60	4.93E+00		-2.80E+00	2.43E+00
		696.49		99.49	5.90E+00		2.55E+00	2.90E+00
	PM-145	36.85		21.70	3.42E+00	1.83E+00	-4.10E+00	1.70E+00
		37.36		39.70	1.83E+00		-2.19E+00	9.06E-01
		42.30		15.10	4.68E+00		-8.72E+00	2.33E+00
		72.40		2.31	1.98E+01		-3.35E+00	9.84E+00
	PM-146	453.90		39.94	2.48E+00	2.48E+00	1.53E+00	1.23E+00
		735.90		14.01	8.52E+00		4.61E+00	4.19E+00
		747.13		13.10	9.35E+00		2.99E+00	4.61E+00
	@ ND-147	91.11		28.90	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	@	531.02		13.10	1.00E+26		1.00E+26	1.00E+20
	@ PM-149	285.90		3.10	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	EU-152	121.78		20.50	2.31E+00	2.31E+00	2.15E+01	1.15E+00
		244.69		5.40	9.43E+00		4.06E+00	4.67E+00
		344.27		19.13	3.11E+00		-3.53E-01	1.54E+00
		778.89		9.20	1.12E+01		-2.36E+00	5.50E+00

Analysis Report for 1707091-01

GAS-1402

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	EU-152	964.01		10.40	1.39E+01	2.31E+00	5.91E-01	6.87E+00
		1085.78		7.22	1.86E+01		-9.67E+00	9.15E+00
		1112.02		9.60	1.47E+01		1.17E+01	7.24E+00
		1407.95		14.94	2.33E+00		5.00E-01	1.08E+00
	GD-153	97.43		31.30	1.91E+01	1.91E+01	-1.39E+00	9.45E+00
		103.18		22.20	2.69E+01		4.06E+00	1.34E+01
	EU-154	123.07		40.50	1.27E+00	1.27E+00	1.22E+01	6.32E-01
		723.30		19.70	5.10E+00		-2.99E+00	2.51E+00
		873.19		11.50	1.19E+01		4.53E+00	5.87E+00
		996.32		10.30	1.42E+01		1.56E+01	6.98E+00
		1004.76		17.90	7.76E+00		-7.08E+00	3.82E+00
		1274.45		35.50	1.98E+00		1.35E+00	9.54E-01
	EU-155	86.50		30.90	3.57E+00	2.08E+00	1.09E+02	1.78E+00
		105.30		20.70	2.08E+00		-1.03E+00	1.03E+00
@	EU-156	811.77		10.40	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		1153.47		7.20	1.00E+26		1.00E+26	1.00E+20
@		1230.71		8.90	1.00E+26		1.00E+26	1.00E+20
	HO-166M	184.41		72.60	5.05E-01	5.05E-01	1.42E-02	2.50E-01
		280.45		29.60	1.54E+00		6.13E-01	7.60E-01
		410.94		11.10	5.38E+00		7.23E-01	2.66E+00
		711.69		54.10	1.43E+00		-1.72E+00	7.03E-01
+	TM-171	66.72	*	0.14	9.56E+02	9.56E+02	1.27E+03	4.75E+02
	HF-172	67.35		5.31	2.28E+01	8.76E+00	-5.13E+00	1.13E+01
		125.81		11.30	8.76E+00		-7.25E-01	4.35E+00
@	LU-172	181.53		20.60	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		900.72		29.81	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	2.37E+01	8.98E+00	1.24E+01	1.18E+01
		272.11		21.20	8.98E+00		1.16E+00	4.44E+00
	HF-175	343.40		84.00	2.16E+04	2.16E+04	-2.45E+03	1.07E+04
	LU-176	88.34		13.30	5.47E+00	4.53E-01	1.66E+02	2.73E+00
		201.83		86.00	4.53E-01		1.09E-01	2.24E-01
		306.78		94.00	5.08E-01		1.48E-01	2.51E-01
	HF-181	133.02		41.70	2.41E+07	2.41E+07	6.14E+05	1.20E+07
		345.85		17.20	9.78E+07		3.63E+07	4.83E+07
		482.03		82.80	2.56E+07		-1.25E+06	1.27E+07
	TA-182	67.75		41.20	6.15E+02	6.15E+02	1.27E+03	3.06E+02
		1121.30		34.90	1.88E+03		3.67E+00	9.26E+02
		1189.05		16.23	2.91E+03		5.20E+01	1.42E+03
		1221.41		26.98	1.39E+03		-1.87E+02	6.70E+02
		1231.02		11.44	3.08E+03		3.12E+02	1.49E+03
	IR-192	308.46		29.68	3.28E+04	2.98E+04	2.88E+04	1.62E+04
		468.07		48.10	2.98E+04		2.32E+03	1.47E+04
	HG-203	279.19		77.30	4.00E+06	4.00E+06	-5.37E+05	1.98E+06
	TL-204	374.74		94.11	9.77E-01	9.77E-01	-1.89E-01	4.83E-01
		899.15		99.16	1.97E+00		-4.44E-01	9.74E-01
		911.74		91.10	2.18E+00		7.59E-01	1.08E+00
	BI-207	569.67		97.72	6.79E-01	6.79E-01	-1.52E-01	3.34E-01
		1063.62		74.90	1.63E+00		-8.82E-01	8.02E-01
	TL-208	583.14		30.22	2.15E+00	8.37E-01	4.77E-01	1.06E+00
		860.37		4.48	2.34E+01		6.42E+00	1.15E+01
		2614.66		35.85	8.37E-01		4.53E-01	3.58E-01
	BI-210M	262.00		45.00	9.72E-01	9.72E-01	2.24E-01	4.81E-01

Analysis Report for 1707091-01

GAS-1402

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	BI-210M	300.00		23.00	2.04E+00	9.72E-01	1.33E+00	1.01E+00
	PB-210	46.50		4.25	2.01E+01	2.01E+01	1.03E+01	1.00E+01
	PB-211	404.84		2.90	2.03E+01	2.03E+01	4.36E+00	1.00E+01
		831.96		2.90	3.32E+01		-1.86E+01	1.63E+01
	BI-212	727.17		11.80	6.81E+00	6.81E+00	-4.34E+00	3.35E+00
		1620.62		2.75	1.16E+01		1.14E+00	5.34E+00
	PB-212	238.63		44.60	1.01E+00	1.01E+00	9.75E-01	4.98E-01
		300.09		3.41	1.38E+01		8.94E+00	6.82E+00
	BI-214	609.31		46.30	1.42E+00	1.42E+00	2.84E-01	7.00E-01
		1120.29		15.10	7.19E+00		-2.96E+00	3.53E+00
		1764.49		15.80	1.90E+00		6.91E-01	8.64E-01
		2204.22		4.98	5.68E+00		-5.75E-01	2.49E+00
	PB-214	295.21		19.19	2.43E+00	1.39E+00	1.27E+00	1.20E+00
		351.92		37.19	1.39E+00		-5.78E-01	6.88E-01
	RN-219	401.80		6.50	8.96E+00	8.96E+00	2.85E+00	4.43E+00
	RA-223	323.87		3.88	1.26E+01	1.26E+01	2.62E+00	6.24E+00
	RA-224	240.98		3.95	1.14E+01	1.14E+01	7.23E+00	5.62E+00
@	RA-225	40.00		31.00	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	RA-226	186.21		3.28	1.13E+01	1.13E+01	2.23E-02	5.61E+00
	TH-227	50.10		8.40	9.90E+00	3.84E+00	4.82E+01	4.93E+00
		236.00		11.50	3.84E+00		-2.14E-01	1.90E+00
		256.20		6.30	6.90E+00		-1.89E+00	3.41E+00
	AC-228	338.32		11.40	4.48E+00	4.22E+00	1.76E+00	2.21E+00
		911.07		27.70	4.22E+00		1.79E+00	2.08E+00
		969.11		16.60	7.23E+00		2.17E+00	3.57E+00
	TH-230	48.44		16.90	4.68E+00	4.68E+00	1.51E+01	2.33E+00
		62.85		4.60	2.05E+01		4.26E+02	1.02E+01
		67.67		0.37	1.13E+02		2.33E+02	5.61E+01
	PA-231	283.67		1.60	2.85E+01	2.02E+01	6.33E+00	1.41E+01
		302.67		2.30	2.02E+01		7.74E+00	1.00E+01
	TH-231	25.64		14.70	2.73E+01	8.12E+00	-1.23E+02	1.36E+01
		84.21		6.40	8.12E+00		-2.22E+02	4.04E+00
	PA-233	311.98		38.60	7.86E+11	7.86E+11	-2.23E+10	3.89E+11
	PA-234	131.20		20.40	1.47E+00	1.47E+00	-3.30E-02	7.30E-01
		733.99		8.80	9.39E+00		-5.76E-01	4.63E+00
		946.00		12.00	1.09E+01		2.64E+00	5.36E+00
	PA-234M	1001.03		0.92	1.24E+02	1.24E+02	4.93E+00	6.09E+01
	TH-234	63.29		3.80	2.48E+01	2.48E+01	5.14E+02	1.23E+01
	U-235	143.76		10.50	2.96E+00	2.96E+00	-1.77E+00	1.47E+00
		163.35		4.70	7.15E+00		-1.20E-02	3.54E+00
		205.31		4.70	8.34E+00		-7.32E+00	4.13E+00
	NP-237	86.50		12.60	5.85E+00	5.85E+00	1.78E+02	2.91E+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	3.46E+00	3.46E+00	2.24E+02	1.73E+00
	AM-243	74.67		66.00	6.10E-01	6.10E-01	-4.88E-03	3.03E-01
	CM-243	209.75		3.29	1.33E+01	3.43E+00	1.44E+00	6.60E+00
		228.14		10.60	4.42E+00		2.24E+00	2.19E+00
		277.60		14.00	3.43E+00		-8.45E-01	1.70E+00

Analysis Report for 1707091-01

GAS-1402

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

No Action Level results available for reporting purposes.

DATA REVIEW COMMENTS REPORT

Creation Date	Comment	User

No Data Review Comments Entered.

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

Sample Title: GAS-1402

Elapsed Live time: 1800
Elapsed Real Time: 1832

Channel								
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	5	426	1970
17:	1926	1952	5349	22120	36899	21759	10677	11460
25:	6561	1911	828	735	853	1213	1605	1288
33:	869	849	973	1005	966	960	1035	1144
41:	1313	1449	1661	1711	1881	2241	3023	3621
49:	4060	3892	3797	3662	3950	4003	4204	4769
57:	11830	30246	29580	9398	1643	1051	1127	1186
65:	1343	1455	1355	1445	1401	1330	1356	1303
73:	1384	1354	1410	1331	1363	1317	1387	1372
81:	1360	1421	1457	1483	2268	7244	12051	7329
89:	1719	703	753	716	759	702	685	700
97:	688	699	744	689	710	713	701	697
105:	650	719	668	732	703	687	710	730
113:	745	756	725	705	708	675	868	1570
121:	2492	1788	841	686	676	658	651	651
129:	639	670	619	627	642	682	811	893
137:	695	651	654	639	624	629	650	606
145:	608	592	630	658	581	593	608	626
153:	640	591	591	619	589	556	578	576
161:	573	589	566	680	734	645	554	572
169:	555	541	536	627	584	578	586	556
177:	540	568	582	567	558	631	598	628
185:	588	612	629	601	656	643	609	612
193:	611	605	613	594	593	584	622	636
201:	614	537	526	613	566	574	631	608
209:	610	582	630	618	612	614	608	646
217:	630	602	627	648	578	549	590	592
225:	592	639	608	557	555	625	583	570
233:	551	551	548	580	576	641	560	549
241:	593	523	529	574	473	532	479	500
249:	462	473	489	469	475	500	465	467
257:	460	473	488	482	450	459	429	429
265:	444	436	452	441	417	429	435	433
273:	442	410	420	401	400	457	453	456
281:	439	435	381	417	426	416	403	391
289:	411	373	414	405	400	418	396	415
297:	422	380	401	436	408	361	386	335
305:	397	402	416	413	440	389	393	369
313:	405	375	392	373	358	343	385	388
321:	350	367	378	388	374	377	371	369
329:	358	359	383	363	364	370	375	358
337:	374	366	399	365	339	372	346	349
345:	381	386	354	354	334	365	345	374
353:	340	349	346	378	346	349	342	334
361:	356	328	332	352	333	346	340	336

369:	350	363	328	305	344	362	306	342

Sample Title: GAS-1402

Channel								
377:	374	338	329	365	355	338	377	328
385:	320	393	364	328	333	366	383	390
393:	358	346	382	374	381	344	312	341
401:	353	336	328	358	323	335	348	346
409:	330	347	326	330	349	358	321	319
417:	329	367	345	400	351	341	344	366
425:	366	351	331	317	336	330	329	355
433:	360	374	350	348	328	363	385	346
441:	348	374	373	346	363	366	365	330
449:	359	402	363	357	349	383	375	364
457:	362	344	372	346	358	382	391	399
465:	369	379	362	385	347	372	373	345
473:	375	388	353	318	336	303	318	296
481:	300	258	266	297	247	289	248	270
489:	291	246	256	250	256	276	256	255
497:	235	281	246	263	237	262	283	241
505:	244	261	230	241	257	282	264	248
513:	217	232	218	238	234	238	234	242
521:	235	221	225	213	270	208	211	248
529:	201	236	241	236	225	190	236	201
537:	223	194	235	200	223	223	199	200
545:	214	208	217	193	236	233	184	211
553:	203	192	199	213	201	182	198	190
561:	190	192	206	197	194	208	203	191
569:	184	196	187	165	180	213	199	200
577:	185	214	195	183	200	206	184	197
585:	209	189	179	207	188	175	169	179
593:	149	167	176	178	185	176	194	165
601:	197	170	178	186	176	170	198	191
609:	166	180	209	181	188	171	170	174
617:	158	184	193	158	191	183	158	193
625:	185	205	189	188	181	168	189	174
633:	163	171	168	191	161	170	195	181
641:	183	159	192	186	179	187	206	155
649:	189	214	192	175	164	170	186	163
657:	189	294	1380	4643	6190	3042	656	189
665:	155	139	146	138	161	138	164	150
673:	160	169	142	170	182	168	107	151
681:	152	156	150	154	188	144	156	149
689:	159	153	148	163	170	154	142	132
697:	140	174	161	165	150	139	160	140
705:	161	166	158	144	131	136	141	165
713:	148	157	139	170	179	157	148	178
721:	157	139	159	151	130	159	158	171
729:	153	156	165	162	166	152	163	173
737:	142	152	162	147	142	168	171	152
745:	170	159	171	174	153	154	171	163
753:	171	154	150	160	164	159	159	165
761:	157	169	170	143	170	172	184	174
769:	187	158	178	189	173	169	162	159
777:	139	186	156	172	150	181	181	134
785:	186	190	151	158	172	155	163	159
793:	178	181	169	157	196	188	160	177

801:	191	171	170	164	170	148	164	153

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Channel								
809:	176	178	176	175	181	164	171	161
817:	166	157	187	194	200	193	165	191
825:	168	177	174	150	166	181	169	158
833:	183	191	168	185	197	188	188	165
841:	155	165	180	199	201	211	177	201
849:	206	183	192	197	200	171	179	198
857:	177	213	206	183	176	193	169	202
865:	199	186	195	187	192	214	169	221
873:	192	188	190	222	227	187	203	184
881:	201	213	210	240	183	204	217	224
889:	193	199	212	212	216	219	216	188
897:	222	223	223	225	197	237	190	226
905:	213	216	202	215	211	243	206	214
913:	209	223	202	187	211	215	214	239
921:	228	219	227	223	217	228	242	228
929:	231	275	246	231	241	248	233	241
937:	275	224	248	250	242	254	254	263
945:	229	256	226	264	265	240	241	252
953:	262	244	226	252	267	241	204	268
961:	229	254	200	221	202	215	202	209
969:	182	218	193	186	171	175	192	207
977:	188	198	199	158	196	169	189	178
985:	177	209	167	193	166	159	166	170
993:	179	166	202	172	173	199	188	173
1001:	161	144	161	175	160	162	160	153
1009:	168	168	173	195	165	166	162	183
1017:	155	175	173	174	165	158	158	172
1025:	177	190	175	152	197	166	189	168
1033:	151	152	175	166	157	161	166	158
1041:	175	187	166	171	152	143	133	132
1049:	161	159	165	160	156	169	180	157
1057:	176	182	165	170	162	133	144	172
1065:	152	168	148	174	144	154	150	163
1073:	160	156	165	152	170	143	177	152
1081:	140	154	164	160	149	160	145	163
1089:	149	159	168	176	158	167	172	138
1097:	162	154	159	159	162	159	159	135
1105:	162	181	170	167	165	172	156	176
1113:	159	166	137	132	145	136	140	153
1121:	124	91	113	111	128	121	113	109
1129:	108	125	103	86	97	103	105	84
1137:	102	110	97	75	101	94	97	89
1145:	92	96	96	83	92	104	78	110
1153:	83	103	103	78	102	96	82	78
1161:	92	72	73	91	88	87	93	94
1169:	140	445	1824	3939	3875	1646	365	92
1177:	71	80	57	66	79	64	64	53
1185:	63	59	62	52	56	55	71	46
1193:	59	48	53	67	53	45	50	55
1201:	45	31	53	49	40	35	62	46
1209:	46	40	46	41	36	52	41	42
1217:	39	36	31	36	25	37	37	28
1225:	39	22	28	34	44	34	28	18

1233:	24	27	31	17	43	25	33	29

Sample Title: GAS-1402

Channel								
1241:	28	30	34	22	20	20	19	26
1249:	27	27	22	18	15	27	15	28
1257:	22	10	19	17	21	19	24	20
1265:	17	16	23	16	20	29	22	25
1273:	27	30	25	24	32	20	19	19
1281:	25	19	18	25	21	23	25	15
1289:	12	21	27	14	18	20	22	26
1297:	14	28	27	18	28	19	17	20
1305:	14	19	14	17	19	17	23	20
1313:	21	22	22	31	19	13	21	31
1321:	18	17	26	29	29	18	24	49
1329:	210	1083	2950	3667	2125	574	76	14
1337:	9	7	10	8	14	8	7	4
1345:	7	4	4	5	7	12	8	11
1353:	5	6	4	6	12	7	4	8
1361:	9	4	4	8	11	6	11	9
1369:	5	4	2	9	7	4	5	5
1377:	5	5	6	11	8	6	4	3
1385:	7	5	5	7	4	6	2	4
1393:	7	3	4	5	7	4	4	4
1401:	6	2	5	5	8	7	7	5
1409:	3	6	5	6	3	5	8	6
1417:	2	4	8	2	4	1	5	5
1425:	7	5	6	3	5	4	3	4
1433:	3	5	3	5	6	6	3	6
1441:	5	6	2	4	3	3	9	4
1449:	4	5	7	2	4	8	2	3
1457:	5	10	10	7	10	6	10	6
1465:	2	7	7	2	8	5	8	4
1473:	4	6	5	6	3	6	2	12
1481:	8	6	5	11	5	9	5	4
1489:	4	1	4	3	2	1	2	5
1497:	3	6	5	1	5	6	5	5
1505:	5	6	4	5	3	4	4	5
1513:	1	8	4	7	3	3	5	7
1521:	6	8	9	2	6	8	4	8
1529:	7	6	5	7	1	4	2	5
1537:	5	5	1	7	5	5	4	0
1545:	8	5	7	6	4	4	4	7
1553:	7	4	5	4	11	1	3	4
1561:	2	3	2	4	12	2	4	5
1569:	1	6	4	8	2	11	1	2
1577:	5	4	2	2	3	3	6	6
1585:	3	4	5	5	4	4	4	6
1593:	6	9	2	5	9	6	6	6
1601:	5	5	2	5	5	8	0	6
1609:	7	0	3	4	7	4	4	7
1617:	2	9	1	8	1	5	5	7
1625:	3	6	4	4	4	1	4	4
1633:	2	7	1	5	3	4	1	2
1641:	3	4	2	8	5	4	6	4
1649:	0	3	4	5	0	1	2	10
1657:	4	4	1	3	7	7	3	2

1665:	4	4	3	5	0	1	7	3

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Channel								
1673:	2	3	1	2	8	2	2	3
1681:	3	2	5	10	5	2	6	3
1689:	1	1	8	4	7	4	7	2
1697:	3	3	3	5	4	3	2	4
1705:	2	4	6	4	3	4	5	6
1713:	1	1	3	3	2	5	4	2
1721:	1	5	4	3	3	4	5	4
1729:	6	3	4	4	2	3	3	2
1737:	5	7	3	5	3	2	0	4
1745:	6	4	5	1	1	2	3	1
1753:	3	4	2	4	1	3	4	1
1761:	5	5	3	7	3	3	3	3
1769:	1	2	4	2	2	1	3	4
1777:	2	5	3	5	3	4	3	4
1785:	0	0	6	4	1	3	4	4
1793:	0	3	3	4	3	3	5	3
1801:	3	1	1	3	5	5	1	2
1809:	5	1	1	2	5	2	2	4
1817:	6	2	3	4	2	4	2	2
1825:	2	5	1	2	3	1	3	5
1833:	3	6	12	10	3	3	3	3
1841:	1	3	2	4	3	0	3	2
1849:	1	4	6	4	1	2	1	2
1857:	3	3	4	2	5	1	2	3
1865:	1	3	3	3	4	1	5	3
1873:	3	3	2	7	2	3	4	1
1881:	3	4	3	2	5	3	0	0
1889:	3	4	3	3	2	3	1	3
1897:	8	4	2	2	5	5	2	1
1905:	0	1	3	6	6	1	3	2
1913:	4	6	0	4	5	1	5	6
1921:	4	4	5	5	1	4	3	4
1929:	2	3	0	0	5	0	1	3
1937:	2	3	2	2	7	0	2	0
1945:	5	3	4	4	8	4	0	2
1953:	5	3	2	4	4	0	4	4
1961:	1	4	2	1	3	5	1	1
1969:	3	2	3	3	5	4	1	2
1977:	9	1	1	0	0	5	3	1
1985:	1	2	2	1	2	5	4	6
1993:	3	8	5	4	6	1	5	1
2001:	4	1	2	3	1	1	4	5
2009:	2	0	0	3	2	4	1	5
2017:	2	0	3	6	2	2	2	2
2025:	2	4	0	3	6	2	2	2
2033:	3	1	3	3	3	2	3	1
2041:	5	1	4	4	1	2	0	1
2049:	4	3	3	2	3	3	3	1
2057:	3	1	1	3	1	5	3	2
2065:	2	1	3	0	2	0	4	5
2073:	4	2	3	2	3	1	3	1
2081:	4	2	2	1	2	2	1	5
2089:	6	3	3	2	1	2	0	4

2097:	2	0	1	2	3	4	4	3

Sample Title: GAS-1402

Channel								
2105:	2	2	4	2	1	1	1	5
2113:	3	2	3	0	3	2	0	3
2121:	2	1	3	3	1	3	0	0
2129:	1	3	1	4	1	1	0	3
2137:	2	1	0	1	0	2	2	0
2145:	1	1	4	2	1	3	4	3
2153:	5	0	1	4	3	1	0	3
2161:	1	1	1	2	1	3	1	1
2169:	2	1	0	0	1	3	2	2
2177:	3	3	0	8	3	3	1	2
2185:	6	4	1	2	1	2	4	1
2193:	2	2	2	1	3	0	4	3
2201:	2	1	1	2	4	2	1	1
2209:	4	2	0	1	0	2	2	0
2217:	2	1	3	2	3	1	3	3
2225:	2	2	3	4	1	3	3	4
2233:	3	0	1	1	0	2	5	4
2241:	3	2	2	0	1	2	6	0
2249:	1	2	0	5	6	1	2	1
2257:	0	3	0	2	1	2	3	3
2265:	4	2	1	4	3	4	1	3
2273:	1	1	0	0	3	2	4	1
2281:	2	1	0	3	2	4	3	1
2289:	1	3	2	1	0	1	0	0
2297:	2	3	1	1	3	1	0	1
2305:	2	0	1	2	1	2	1	1
2313:	0	0	0	2	2	2	1	2
2321:	2	2	1	1	2	2	3	1
2329:	0	2	0	1	1	1	0	1
2337:	2	0	0	1	1	3	1	1
2345:	1	0	1	0	2	0	1	1
2353:	2	0	0	2	3	3	1	1
2361:	3	1	2	1	0	0	1	1
2369:	1	0	1	1	1	0	1	1
2377:	0	0	1	2	1	2	0	1
2385:	0	1	1	2	0	0	2	0
2393:	0	0	1	0	1	1	2	0
2401:	1	0	0	0	0	0	1	0
2409:	0	0	0	1	0	3	0	0
2417:	0	0	0	1	0	0	0	0
2425:	0	1	0	0	0	1	0	0
2433:	1	0	0	1	0	1	0	0
2441:	1	0	1	1	0	0	0	1
2449:	1	0	0	0	0	0	0	0
2457:	1	0	0	0	0	0	0	0
2465:	0	0	0	1	1	0	0	0
2473:	0	0	1	0	1	1	0	0
2481:	1	0	1	0	0	0	0	0
2489:	0	1	0	0	0	1	0	1
2497:	1	0	1	0	0	0	3	16
2505:	21	13	11	3	0	0	1	0
2513:	0	0	0	1	0	0	0	0
2521:	0	0	1	0	1	0	1	0

2529:	0	0	0	0	0	1	0	1

Sample Title: GAS-1402

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

2961:	0	0	1	0	0	0	0	0

Sample Title: GAS-1402

Channel								
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	0	0	0	0	0	0
3009:	0	0	0	0	0	0	0	0
3017:	0	0	0	0	0	0	0	0
3025:	0	0	0	0	0	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	1	0	0	0	0	0	0
3073:	0	0	0	1	0	0	0	0
3081:	0	0	0	0	0	0	0	0
3089:	0	0	0	0	0	0	0	0
3097:	0	0	0	0	0	0	1	0
3105:	0	0	0	0	1	0	0	0
3113:	0	0	1	0	0	1	0	0
3121:	0	0	0	0	0	0	0	0
3129:	0	0	0	0	0	0	0	0
3137:	1	0	0	1	0	0	0	0
3145:	1	0	1	0	1	0	0	0
3153:	0	0	0	0	0	0	0	0
3161:	0	0	1	0	0	0	0	0
3169:	0	0	0	0	0	0	0	0
3177:	0	0	0	0	0	0	0	0
3185:	0	0	0	0	0	0	0	0
3193:	0	0	0	0	0	0	0	0
3201:	0	0	1	0	0	0	1	0
3209:	1	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:	0	0	0	0	0	0	0	0
3241:	0	0	0	0	0	0	1	0
3249:	0	0	0	0	0	1	0	0
3257:	0	0	0	0	0	0	0	0
3265:	0	0	0	0	0	0	0	0
3273:	0	0	0	0	0	0	0	0
3281:	0	0	0	0	0	0	0	0
3289:	0	0	0	0	0	0	0	0
3297:	0	0	0	0	0	0	0	0
3305:	0	0	0	0	0	1	0	0
3313:	0	0	0	0	0	0	0	0
3321:	0	0	0	0	0	0	0	0
3329:	0	0	0	0	0	0	0	0
3337:	0	0	1	0	0	0	0	0
3345:	0	0	0	0	0	0	2	0
3353:	0	0	0	0	0	0	0	0
3361:	0	0	0	0	0	0	0	0
3369:	0	0	0	0	0	1	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-1402

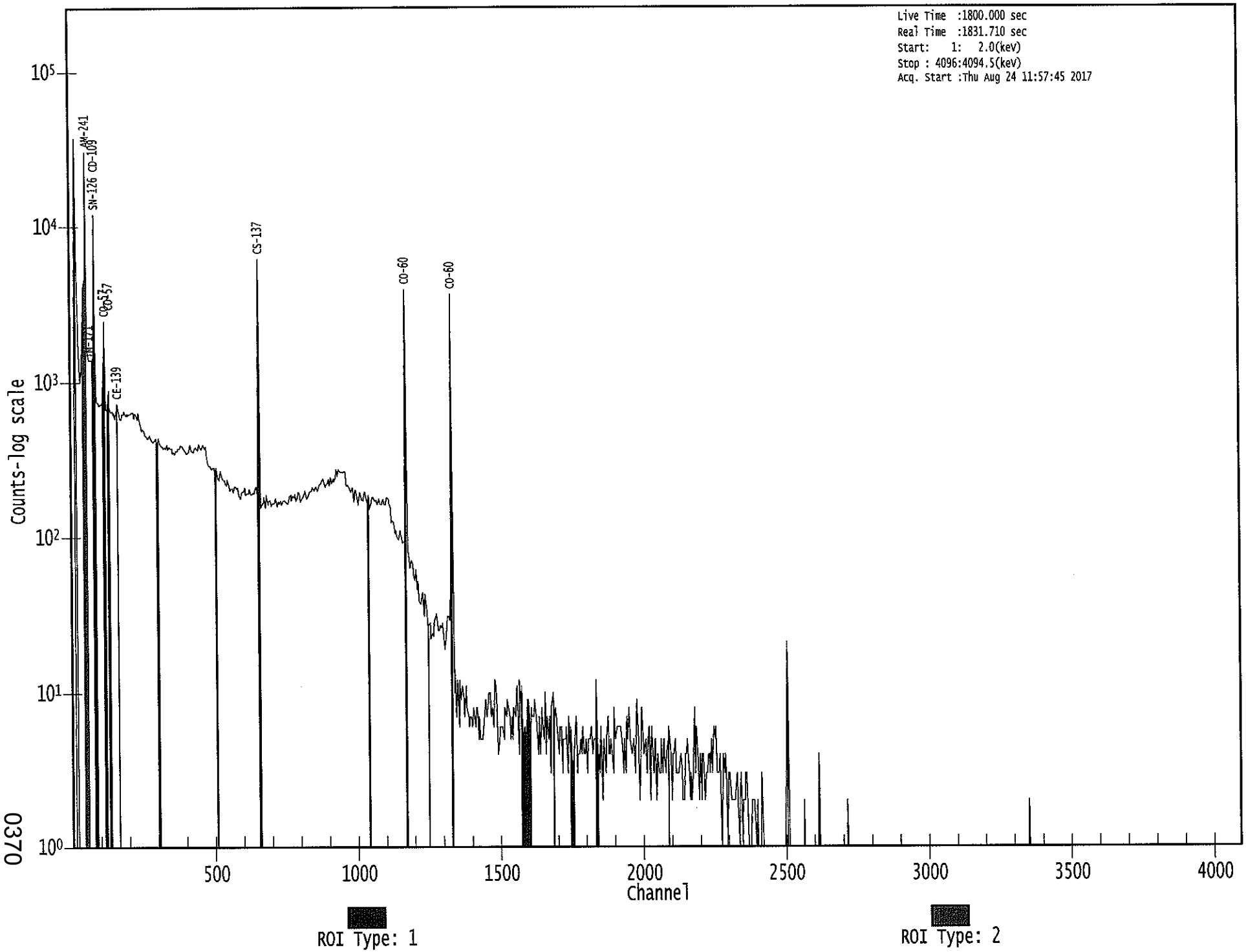
Channel								
3401:	0	0	0	0	0	0	0	0
3409:	0	0	1	0	0	0	0	0
3417:	0	0	0	0	0	0	0	0
3425:	0	0	0	1	0	0	0	0
3433:	0	0	0	0	0	0	0	0
3441:	0	0	0	0	0	0	0	0
3449:	0	0	0	0	0	0	0	0
3457:	0	0	0	0	0	0	0	0
3465:	0	0	0	0	0	0	0	0
3473:	0	0	0	0	0	0	0	0
3481:	0	0	0	0	0	0	0	0
3489:	0	0	0	0	0	0	0	0
3497:	0	0	0	0	0	0	0	0
3505:	0	0	0	0	0	0	0	0
3513:	0	0	0	0	0	0	0	0
3521:	0	0	0	0	0	0	0	1
3529:	0	0	0	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	0	0	0	0
3561:	0	0	0	0	0	0	0	0
3569:	1	0	0	0	0	0	0	0
3577:	1	0	0	0	0	0	0	0
3585:	0	1	0	0	0	0	0	0
3593:	0	0	0	0	0	0	1	0
3601:	0	0	0	0	0	0	0	0
3609:	0	0	0	0	0	0	0	0
3617:	0	0	0	0	0	0	0	0
3625:	0	0	0	0	0	0	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	1
3657:	0	0	0	0	0	0	0	1
3665:	0	0	0	0	0	0	0	0
3673:	0	0	0	0	0	0	0	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	0	0	0	0	0	0
3713:	0	0	0	0	0	0	1	0
3721:	0	0	0	0	0	0	0	0
3729:	0	0	0	0	0	0	0	0
3737:	0	0	0	0	0	0	0	0
3745:	0	0	0	0	0	0	0	0
3753:	0	0	0	0	0	0	0	0
3761:	0	0	0	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	1	0	0	0	0	0	0
3793:	0	1	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	0	0	0

3825:	0	0	0	0	0	0	0	0

Sample Title: GAS-1402

Channel								
3833:	1	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	1
3873:	0	0	0	0	0	0	0	1
3881:	0	0	0	0	0	0	0	0
3889:	0	0	1	0	0	0	0	0
3897:	0	0	0	0	0	0	0	0
3905:	0	0	0	0	0	1	0	0
3913:	0	0	0	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	0
3945:	0	0	0	0	0	1	0	0
3953:	0	0	0	0	0	0	0	0
3961:	0	0	0	0	1	0	0	0
3969:	0	0	0	0	0	0	0	0
3977:	0	0	0	0	0	0	0	1
3985:	0	0	0	0	0	0	1	0
3993:	0	0	0	0	0	0	0	0
4001:	0	0	0	0	0	1	0	0
4009:	0	0	0	0	0	0	0	0
4017:	0	0	0	0	0	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	0	0	0	0
4057:	0	0	0	0	0	0	0	0
4065:	0	0	0	0	0	0	0	0
4073:	0	0	0	0	0	0	0	0
4081:	0	0	0	0	0	0	0	0
4089:	0	0	0	0	0	0	0	0

0000055898.CNF



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Apex-Gamma

Analysis Report for 1707091-02
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GAMMA SPECTRUM ANALYSIS

Sample Identification	: 1707091-02
Sample Description	: BLANK
Sample Type	: SOIL
Sample Size	: 7.834E+02 grams
Facility	: Countroom
Sample Taken On	: 8/24/2017 12:47:40PM
Acquisition Started	: 8/24/2017 12:29:15PM
Procedure	: GAS-1602 pCi
Operator	: Administrator
Detector Name	: GE4
Geometry	: GAS-1602
Live Time	: 3600.0 seconds
Real Time	: 3617.6 seconds
Dead Time	: 0.49 %
Peak Locate Threshold	: 2.50
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 15 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 1/14/2017
Efficiency Calibration Used Done On	: 1/14/2017
Efficiency Calibration Description	:
Sample Number	: 55905

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

Analysis Report for 1707091-02

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PEAK LOCATE REPORT

Peak Locate Performed on : 8/24/2017 1:29:35PM
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	81.74	80.80	0.0000	0.00
2	218.20	217.30	0.0000	0.00
3	227.20	226.30	0.0000	0.00
4	411.81	410.97	0.0000	0.00
5	515.79	515.00	0.0000	0.00
6	558.53	557.75	0.0000	0.00
7	642.94	642.20	0.0000	0.00
8	669.83	669.10	0.0000	0.00
9	676.79	676.06	0.0000	0.00
10	775.80	775.11	0.0000	0.00
11	850.93	850.27	0.0000	0.00
12	890.30	889.66	0.0000	0.00
13	911.31	910.67	0.0000	0.00
14	1204.08	1203.57	0.0000	0.00
15	2614.68	2615.00	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1707091-02

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PEAK ANALYSIS REPORT

Peak Analysis Performed on : 8/24/2017 1:29:35PM

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	81.74	68 -	100	80.80	3.08E+01	27.86	1.15E+02	2.18
M	2	218.20	208 -	229	217.30	2.08E+01	22.80	6.72E+01	2.80
m	3	227.20	208 -	229	226.30	1.53E+01	21.63	7.66E+01	2.81
	4	411.81	408 -	414	410.97	9.20E+00	12.39	2.16E+01	3.59
m	5	515.79	504 -	518	515.00	1.10E+01	13.77	3.33E+01	2.27
	6	558.53	554 -	561	557.75	1.62E+01	14.97	2.35E+01	3.93
	7	642.94	638 -	645	642.20	1.05E+01	13.56	2.31E+01	2.25
	8	669.83	665 -	671	669.10	1.01E+01	11.54	1.58E+01	1.53
	9	676.79	673 -	680	676.06	1.70E+01	8.25	0.00E+00	5.13
	10	775.80	770 -	779	775.11	1.35E+01	12.61	1.49E+01	6.16
	11	850.93	845 -	855	850.27	1.38E+01	13.37	1.65E+01	7.11
	12	890.30	886 -	893	889.66	6.00E+00	8.49	8.00E+00	1.80
	13	911.31	908 -	913	910.67	7.78E+00	6.71	2.44E+00	1.20
	14	1204.08	1201 -	1206	1203.57	7.00E+00	5.29	0.00E+00	3.00
	15	2614.68	2610 -	2617	2615.00	7.00E+00	5.29	0.00E+00	1.92

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

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 8/24/2017 1:29:35PM

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

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level

Analysis Report for 1707091-02

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	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
M	1	81.74	68 -	100	3.08E+01	27.86	1.15E+02	1.76E+01
M	2	218.20	208 -	229	2.08E+01	22.80	6.72E+01	1.35E+01
m	3	227.20	208 -	229	1.53E+01	21.63	7.66E+01	1.44E+01
	4	411.81	408 -	414	9.20E+00	12.39	2.16E+01	8.88E+00
m	5	515.79	504 -	518	1.10E+01	13.77	3.33E+01	9.48E+00
	6	558.53	554 -	561	1.62E+01	14.97	2.35E+01	1.04E+01
	7	642.94	638 -	645	1.05E+01	13.56	2.31E+01	9.80E+00
	8	669.83	665 -	671	1.01E+01	11.54	1.58E+01	7.92E+00
	9	676.79	673 -	680	1.70E+01	8.25	0.00E+00	0.00E+00
	10	775.80	770 -	779	1.35E+01	12.61	1.49E+01	8.42E+00
	11	850.93	845 -	855	1.38E+01	13.37	1.65E+01	9.14E+00
	12	890.30	886 -	893	6.00E+00	8.49	8.00E+00	5.70E+00
	13	911.31	908 -	913	7.78E+00	6.71	2.44E+00	3.06E+00
	14	1204.08	1201 -	1206	7.00E+00	5.29	0.00E+00	0.00E+00
	15	2614.68	2610 -	2617	7.00E+00	5.29	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 : 8/24/2017 1:29:35PM

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	81.74	68 -	100	80.80	3.08E+01	27.86	1.15E+02	XE-133 BA-133
M	2	218.20	208 -	229	217.30	2.08E+01	22.80	6.72E+01	.....
m	3	227.20	208 -	229	226.30	1.53E+01	21.63	7.66E+01	CM-243 TE-132 NP-239
	4	411.81	408 -	414	410.97	9.20E+00	12.39	2.16E+01	HO-166M
m	5	515.79	504 -	518	515.00	1.10E+01	13.77	3.33E+01	.....
	6	558.53	554 -	561	557.75	1.62E+01	14.97	2.35E+01	.....
	7	642.94	638 -	645	642.20	1.05E+01	13.56	2.31E+01	.....

Analysis Report for 1707091-02

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Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
8	669.83	665 -	671	669.10	1.01E+01	11.54	1.58E+01	.....
9	676.79	673 -	680	676.06	1.70E+01	8.25	0.00E+00	AG-110M
10	775.80	770 -	779	775.11	1.35E+01	12.61	1.49E+01	RB-82
11	850.93	845 -	855	850.27	1.38E+01	13.37	1.65E+01	.....
12	890.30	886 -	893	889.66	6.00E+00	8.49	8.00E+00	.....
13	911.31	908 -	913	910.67	7.78E+00	6.71	2.44E+00	AC-228 TL-204
14	1204.08	1201 -	1206	1203.57	7.00E+00	5.29	0.00E+00	.....
15	2614.68	2610 -	2617	2615.00	7.00E+00	5.29	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 : 8/24/2017 1:29:35PM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
M	1	81.74	3.08E+01	27.86	2.36E-02	2.03E-03
M	2	218.20	2.08E+01	22.80	1.48E-02	1.24E-03
m	3	227.20	1.53E+01	21.63	1.42E-02	1.20E-03
	4	411.81	9.20E+00	12.39	7.83E-03	7.02E-04
m	5	515.79	1.10E+01	13.77	6.22E-03	6.59E-04
	6	558.53	1.62E+01	14.97	5.75E-03	6.41E-04
	7	642.94	1.05E+01	13.56	5.00E-03	6.06E-04
	8	669.83	1.01E+01	11.54	4.81E-03	5.88E-04
	9	676.79	1.70E+01	8.25	4.76E-03	5.80E-04
	10	775.80	1.35E+01	12.61	4.19E-03	4.55E-04
	11	850.93	1.38E+01	13.37	3.85E-03	3.61E-04
	12	890.30	6.00E+00	8.49	3.70E-03	3.12E-04
	13	911.31	7.78E+00	6.71	3.62E-03	2.99E-04
	14	1204.08	7.00E+00	5.29	2.83E-03	2.36E-04
	15	2614.68	7.00E+00	5.29	1.28E-03	1.51E-04

Analysis Report for 1707091-02

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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 : 8/24/2017 1:29:35PM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000055576.CNF

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
M	1	81.74	3.08E+01	27.86			3.08E+01	2.79E+01
M	2	218.20	2.08E+01	22.80			2.08E+01	2.28E+01
m	3	227.20	1.53E+01	21.63			1.53E+01	2.16E+01
	4	411.81	9.20E+00	12.39			9.20E+00	1.24E+01
m	5	515.79	1.10E+01	13.77			1.10E+01	1.38E+01
	6	558.53	1.62E+01	14.97	1.58E+00	3.27E+00	1.47E+01	1.53E+01
	7	642.94	1.05E+01	13.56			1.05E+01	1.36E+01
	8	669.83	1.01E+01	11.54			1.01E+01	1.15E+01
	9	676.79	1.70E+01	8.25			1.70E+01	8.25E+00
	10	775.80	1.35E+01	12.61			1.35E+01	1.26E+01
	11	850.93	1.38E+01	13.37			1.38E+01	1.34E+01
	12	890.30	6.00E+00	8.49			6.00E+00	8.49E+00
	13	911.31	7.78E+00	6.71			7.78E+00	6.71E+00
	14	1204.08	7.00E+00	5.29			7.00E+00	5.29E+00
	15	2614.68	7.00E+00	5.29			7.00E+00	5.29E+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 1707091-02

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AREA CORRECTION REPORT
REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 8/24/2017 1:29:35PM

Ref. Peak Energy : 0.00 Reference Date :
Peak Ratio : 0.00 Uncertainty : 0.00
Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000055576.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	81.74	3.08E+01	27.86			3.08E+01	2.79E+01
M	2	218.20	2.08E+01	22.80			2.08E+01	2.28E+01
m	3	227.20	1.53E+01	21.63			1.53E+01	2.16E+01
	4	411.81	9.20E+00	12.39			9.20E+00	1.24E+01
m	5	515.79	1.10E+01	13.77			1.10E+01	1.38E+01
	6	558.53	1.62E+01	14.97	1.58E+00	3.27E+00	1.47E+01	1.53E+01
	7	642.94	1.05E+01	13.56			1.05E+01	1.36E+01
	8	669.83	1.01E+01	11.54			1.01E+01	1.15E+01
	9	676.79	1.70E+01	8.25			1.70E+01	8.25E+00
	10	775.80	1.35E+01	12.61			1.35E+01	1.26E+01
	11	850.93	1.38E+01	13.37			1.38E+01	1.34E+01
	12	890.30	6.00E+00	8.49			6.00E+00	8.49E+00
	13	911.31	7.78E+00	6.71			7.78E+00	6.71E+00
	14	1204.08	7.00E+00	5.29			7.00E+00	5.29E+00
	15	2614.68	7.00E+00	5.29			7.00E+00	5.29E+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
RB-82	0.920	776.52	*	13.00	2.38E-01	2.23E-01
TE-132	0.651	49.72		13.10		
		228.16	*	88.00	1.17E-02	1.66E-02

Analysis Report for 1707091-02

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Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
XE-133	0.915	81.00	*	38.00	3.30E-02	3.00E-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 : 8/24/2017 1:29:35PM
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	218.20	5.78967E-03	54.70		
	4	411.81	2.55556E-03	67.33	Tol.	HO-166M
m	5	515.79	3.05459E-03	62.63		
	6	558.53	4.07043E-03	52.27		
	7	642.94	2.90404E-03	64.87		
	8	669.83	2.80093E-03	57.24		
	9	676.79	4.72222E-03	24.25	Tol.	AG-110M
	11	850.93	3.82576E-03	48.54		
	12	890.30	1.66667E-03	70.71		
	13	911.31	2.16049E-03	43.12	Tol.	TL-204 AC-228
	14	1204.08	1.94444E-03	37.80		
	15	2614.68	1.94444E-03	37.80	Tol.	TL-208

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

Analysis Report for 1707091-02

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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
RB-82	0.92	776.52	*	13.00	2.38E-01	2.23E-01
TE-132	0.65	49.72		13.10		
		228.16	*	88.00	1.17E-02	1.66E-02
XE-133	0.91	81.00	*	38.00	3.30E-02	3.00E-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
RB-82	0.920	2.38E-01	2.23E-01	
TE-132	0.651	1.17E-02	1.66E-02	
XE-133	0.915	3.30E-02	3.00E-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 1707091-02

BLANK

UNIDENTIFIED PEAKS

Peak Locate Performed on : 8/24/2017 1:29:35PM
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	218.20	5.78967E-03	54.70		
	4	411.81	2.55556E-03	67.33	Tol.	HO-166M
m	5	515.79	3.05459E-03	62.63		
	6	558.53	4.07043E-03	52.27		
	7	642.94	2.90404E-03	64.87		
	8	669.83	2.80093E-03	57.24		
	9	676.79	4.72222E-03	24.25	Tol.	AG-110M
	11	850.93	3.82576E-03	48.54		
	12	890.30	1.66667E-03	70.71		
	13	911.31	2.16049E-03	43.12	Tol.	TL-204 AC-228
	14	1204.08	1.94444E-03	37.80		
	15	2614.68	1.94444E-03	37.80	Tol.	TL-208

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

NUCLIDE 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	7.97E-02	3.07E-01	3.07E-01
+	NA-22	1274.54	99.94	1.01E-02	4.28E-02	4.28E-02
+	NA-24	1368.53	99.99	-1.53E-02	5.01E-02	5.01E-02
		2754.09	99.86	4.07E-03		7.55E-02

Analysis Report for 1707091-02

BLANK

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	AL-26	1808.65		99.76	1.11E-02	5.92E-02	5.92E-02
+	K-40	1460.81		10.67	-1.19E-01	4.52E-01	4.52E-01
+	AR-41	1293.64		99.16	1.17E-02	5.49E-02	5.49E-02
+	TI-44	67.88		94.40	-9.85E-03	2.11E-02	2.11E-02
		78.34		96.00	-2.74E-03		2.26E-02
+	SC-46	889.25		99.98	-1.04E-02	3.42E-02	4.51E-02
		1120.51		99.99	-3.07E-02		3.42E-02
+	V-48	983.52		99.98	7.09E-03	4.26E-02	4.26E-02
		1312.10		97.50	1.67E-02		6.24E-02
+	CR-51	320.08		9.83	5.28E-02	2.71E-01	2.71E-01
+	MN-54	834.83		99.97	7.54E-03	5.63E-02	5.63E-02
+	CO-56	846.75		99.96	2.07E-03	5.14E-02	5.14E-02
		1037.75		14.03	1.13E-01		3.36E-01
		1238.25		67.00	2.59E-02		9.39E-02
		1771.40		15.51	2.31E-01		5.17E-01
		2598.48		16.90	-8.79E-02		3.23E-01
+	CO-57	122.06		85.51	2.45E-03	2.00E-02	2.00E-02
		136.48		10.60	9.11E-03		1.85E-01
+	CO-58	810.76		99.40	2.16E-02	5.38E-02	5.38E-02
+	FE-59	1099.22		56.50	-2.77E-03	6.65E-02	6.65E-02
		1291.56		43.20	1.67E-02		1.09E-01
+	CO-60	1173.22		100.00	-3.31E-03	4.34E-02	4.34E-02
		1332.49		100.00	-1.11E-02		5.22E-02
+	ZN-65	1115.52		50.75	3.47E-03	8.80E-02	8.80E-02
+	GA-67	93.31		35.70	5.81E-02	6.63E-02	6.63E-02
		208.95		2.24	2.79E-03		8.87E-01
		300.22		16.00	-9.07E-02		1.69E-01
+	SE-75	121.11		16.70	6.73E-03	3.17E-02	1.07E-01
		136.00		59.20	-1.01E-03		3.17E-02
		264.65		59.80	-5.21E-03		4.09E-02
		279.53		25.20	-1.43E-02		1.15E-01
		400.65		11.40	-3.25E-02		2.56E-01
+	RB-82	776.52	*	13.00	2.38E-01	3.44E-01	3.44E-01
+	RB-83	520.41		46.00	3.04E-03	6.58E-02	6.58E-02
		529.64		30.30	-3.13E-02		8.28E-02
		552.65		16.40	-5.87E-02		2.20E-01
+	KR-85	513.99		0.43	6.08E+00	1.26E+01	1.26E+01
+	SR-85	513.99		99.27	2.66E-02	5.50E-02	5.50E-02
+	Y-88	898.02		93.40	-8.51E-03	3.69E-02	5.27E-02
		1836.01		99.38	-2.01E-02		3.69E-02
+	MO-93	263.06		56.72	-1.61E-02	4.13E-02	4.13E-02
		684.67		99.68	1.43E-02		4.47E-02
		1477.11		99.08	2.05E-03		4.92E-02
+	NB-93M	16.57		9.43	6.44E+00	4.14E+00	4.14E+00
+	NB-94	702.63		100.00	-1.56E-02	4.32E-02	4.32E-02
		871.10		100.00	-1.57E-02		5.27E-02
+	NB-95	765.79		99.81	-3.96E-03	4.26E-02	4.26E-02

Analysis Report for 1707091-02

BLANK

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	NB-95M	235.69	25.00	8.38E-03	1.00E-01	1.00E-01
+	ZR-95	724.18	43.70	4.55E-02	7.33E-02	1.10E-01
		756.72	55.30	-4.65E-02		7.33E-02
+	MO-99	181.06	6.20	-2.71E-01	3.55E-01	3.55E-01
		739.58	12.80	-1.05E-01		3.94E-01
		778.00	4.50	3.40E-02		1.20E+00
+	RU-103	497.08	89.00	-7.95E-03	3.46E-02	3.46E-02
+	RU-106	621.84	9.80	-2.40E-02	3.92E-01	3.92E-01
+	AG-108M	433.93	89.90	-7.87E-03	3.66E-02	3.66E-02
		614.37	90.40	-5.44E-03		4.66E-02
		722.95	90.50	9.60E-03		5.31E-02
+	CD-109	88.03	3.72	-9.28E-01	5.01E-01	5.01E-01
+	AG-110M	657.75	93.14	1.94E-02	5.55E-02	5.55E-02
		677.61	10.53	4.11E-02		4.19E-01
		706.67	16.46	1.99E-03		2.71E-01
		763.93	21.98	6.15E-02		2.13E-01
		884.67	71.63	2.03E-02		6.00E-02
		1384.27	23.94	-3.20E-02		2.40E-01
+	CD-113M	263.70	0.02	-6.06E+01	1.05E+02	1.05E+02
+	SN-113	255.12	1.93	-4.33E-02	4.81E-02	1.32E+00
		391.69	64.90	-8.75E-03		4.81E-02
+	TE123M	159.00	84.10	5.72E-03	2.64E-02	2.64E-02
+	SB-124	602.71	97.87	3.27E-03	4.12E-02	4.12E-02
		645.85	7.26	-1.06E-01		5.65E-01
		722.78	11.10	7.82E-02		4.33E-01
		1691.02	49.00	-4.07E-02		6.91E-02
+	I-125	35.49	6.49	-1.91E-01	6.49E-01	6.49E-01
+	SB-125	176.33	6.89	2.19E-02	1.09E-01	3.34E-01
		427.89	29.33	-5.21E-02		1.09E-01
		463.38	10.35	-2.99E-02		3.34E-01
		600.56	17.80	6.14E-02		2.37E-01
		635.90	11.32	6.74E-02		3.94E-01
+	SB-126	414.70	83.30	5.84E-03	3.77E-02	3.77E-02
		666.33	99.60	-2.49E-03		4.88E-02
		695.00	99.60	1.36E-02		5.38E-02
		720.50	53.80	2.15E-02		9.12E-02
+	SN-126	87.57	37.00	-9.33E-02	5.04E-02	5.04E-02
+	SB-127	473.00	25.00	7.64E-03	1.24E-01	1.24E-01
		685.20	35.70	4.01E-02		1.25E-01
		783.80	14.70	-8.55E-02		2.50E-01
+	I-129	29.78	57.00	-3.26E-02	1.14E-01	1.14E-01
		33.60	13.20	1.15E-02		3.63E-01
		39.58	7.52	-9.27E-02		4.63E-01
+	I-131	284.30	6.05	1.50E-01	3.63E-02	4.83E-01
		364.48	81.20	5.36E-03		3.63E-02
		636.97	7.26	5.83E-02		5.73E-01
		722.89	1.80	4.83E-01		2.67E+00
+	TE-132	49.72	13.10	4.75E-02	6.14E-02	2.13E-01

Analysis Report for 1707091-02

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	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	TE-132	228.16	*	88.00	1.17E-02	6.14E-02	6.14E-02
+	BA-133	81.00		33.00	-2.13E-02	4.87E-02	6.02E-02
		302.84		17.80	5.28E-02		1.78E-01
		356.01		60.00	-6.95E-03		4.87E-02
+	I-133	529.87		86.30	-1.11E-02	2.93E-02	2.93E-02
+	XE-133	81.00	*	38.00	3.30E-02	1.70E-01	1.70E-01
+	CS-134	563.23		8.38	4.26E-02	4.35E-02	4.16E-01
		569.32		15.43	3.92E-02		2.47E-01
		604.70		97.60	-1.94E-02		4.35E-02
		795.84		85.40	1.68E-02		6.73E-02
		801.93		8.73	2.12E-01		6.49E-01
+	CS-135	268.24		16.00	1.11E-02	1.67E-01	1.67E-01
+	I-135	1131.51		22.50	-2.42E-02	1.77E-01	2.31E-01
		1260.41		28.60	3.77E-02		1.77E-01
		1678.03		9.54	-3.58E-01		5.26E-01
+	CS-136	153.22		7.46	-4.32E-02	4.20E-02	2.65E-01
		163.89		4.61	-1.16E-01		4.74E-01
		176.55		13.56	5.57E-02		1.69E-01
		273.65		12.66	-8.39E-03		2.20E-01
		340.57		48.50	1.24E-02		6.02E-02
		818.50		99.70	-2.46E-02		4.20E-02
		1048.07		79.60	-1.37E-02		4.53E-02
		1235.34		19.70	7.50E-02		3.06E-01
+	CS-137	661.65		85.12	6.94E-03	5.67E-02	5.67E-02
+	LA-138	788.74		34.00	3.10E-04	7.86E-02	1.24E-01
		1435.80		66.00	-1.36E-02		7.86E-02
+	CE-139	165.85		80.35	-3.18E-04	2.77E-02	2.77E-02
+	BA-140	162.64		6.70	-4.90E-02	1.48E-01	3.22E-01
		304.84		4.50	1.38E-01		7.04E-01
		423.70		3.20	3.74E-01		1.04E+00
		437.55		2.00	3.48E-01		1.72E+00
		537.32		25.00	4.44E-02		1.48E-01
+	LA-140	328.77		20.50	-3.78E-03	5.99E-02	1.33E-01
		487.03		45.50	-5.13E-03		6.43E-02
		815.85		23.50	-6.28E-03		1.99E-01
		1596.49		95.49	-7.61E-03		5.99E-02
+	CE-141	145.44		48.40	-1.40E-03	4.11E-02	4.11E-02
+	CE-143	57.36		11.80	-1.23E-01	6.48E-02	1.90E-01
		293.26		42.00	2.08E-02		6.48E-02
		664.55		5.20	-3.60E-01		7.91E-01
+	CE-144	133.54		10.80	-9.76E-02	1.60E-01	1.60E-01
+	PM-144	476.78		42.00	-2.03E-03	4.09E-02	7.02E-02
		618.01		98.60	-8.63E-03		4.09E-02
		696.49		99.49	2.81E-02		5.59E-02
+	PM-145	36.85		21.70	3.23E-02	9.90E-02	1.85E-01
		37.36		39.70	1.72E-02		9.90E-02
		42.30		15.10	-1.63E-01		2.14E-01
		72.40		2.31	-2.33E-01		9.13E-01
+	PM-146	453.90		39.94	2.46E-02	8.30E-02	8.30E-02

Analysis Report for 1707091-02

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	PM-146	735.90	14.01	0.00E+00	8.30E-02	3.49E-01
		747.13	13.10	6.39E-02		3.88E-01
+	ND-147	91.11	28.90	6.80E-02	8.07E-02	8.07E-02
		531.02	13.10	1.35E-03		2.02E-01
+	PM-149	285.90	3.10	1.22E-01	9.04E-01	9.04E-01
+	EU-152	121.78	20.50	1.02E-02	8.31E-02	8.31E-02
		244.69	5.40	-2.07E-01		4.15E-01
		344.27	19.13	-5.42E-02		1.38E-01
		778.89	9.20	7.49E-02		5.74E-01
		964.01	10.40	-9.37E-02		5.04E-01
		1085.78	7.22	6.43E-02		7.77E-01
		1112.02	9.60	1.23E-01		5.22E-01
		1407.95	14.94	4.63E-02		3.67E-01
+	GD-153	97.43	31.30	-1.85E-02	6.52E-02	6.52E-02
		103.18	22.20	7.84E-03		7.76E-02
+	EU-154	123.07	40.50	2.80E-03	4.13E-02	4.13E-02
		723.30	19.70	1.01E-01		2.44E-01
		873.19	11.50	5.72E-02		4.97E-01
		996.32	10.30	-1.45E-01		3.65E-01
		1004.76	17.90	-1.61E-02		2.56E-01
		1274.45	35.50	2.84E-02		1.20E-01
+	EU-155	86.50	30.90	-8.23E-02	5.84E-02	5.84E-02
		105.30	20.70	3.10E-02		8.79E-02
+	EU-156	811.77	10.40	3.10E-01	4.18E-01	5.15E-01
		1153.47	7.20	-9.06E-03		5.94E-01
		1230.71	8.90	-3.53E-01		4.18E-01
+	HO-166M	184.41	72.60	2.10E-02	3.41E-02	3.41E-02
		280.45	29.60	3.88E-02		1.01E-01
		410.94	11.10	2.75E-02		2.59E-01
		711.69	54.10	-1.76E-02		8.08E-02
+	TM-171	66.72	0.14	-3.35E+00	1.51E+01	1.51E+01
+	HF-172	67.35	5.31	-8.79E-02	1.47E-01	3.98E-01
		125.81	11.30	-1.48E-02		1.47E-01
+	LU-172	181.53	20.60	-1.31E-02	7.48E-02	1.14E-01
		900.72	29.81	2.85E-02		1.93E-01
		1093.66	62.50	-3.92E-03		7.48E-02
+	LU-173	100.72	5.24	-5.01E-02	1.31E-01	3.32E-01
		272.11	21.20	2.25E-03		1.31E-01
+	HF-175	343.40	84.00	-1.23E-02	3.13E-02	3.13E-02
+	LU-176	88.34	13.30	-2.60E-01	2.67E-02	1.40E-01
		201.83	86.00	6.29E-03		2.67E-02
		306.78	94.00	5.94E-03		3.29E-02
+	HF-181	133.02	41.70	-1.80E-02	4.08E-02	4.16E-02
		345.85	17.20	-3.08E-03		1.57E-01
		482.03	82.80	1.14E-02		4.08E-02
+	TA-182	67.75	41.20	-2.26E-02	4.83E-02	4.83E-02
		1121.30	34.90	-6.89E-02		9.81E-02
		1189.05	16.23	5.20E-02		3.44E-01
		1221.41	26.98	7.63E-02		2.12E-01

Analysis Report for 1707091-02

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	TA-182	1231.02	11.44	-1.07E-01	4.83E-02	3.96E-01
+	IR-192	308.46	29.68	-2.66E-02	7.80E-02	9.95E-02
		468.07	48.10	3.37E-02		7.80E-02
+	HG-203	279.19	77.30	-1.99E-04	3.71E-02	3.71E-02
+	TL-204	374.74	94.11	-2.77E-03	3.66E-02	3.66E-02
		899.15	99.16	1.85E-02		5.62E-02
		911.74	91.10	-8.43E-03		5.07E-02
+	BI-207	569.67	97.72	6.19E-03	3.91E-02	3.91E-02
		1063.62	74.90	-1.39E-02		6.43E-02
+	TL-208	583.14	30.22	1.55E-02	1.12E-01	1.12E-01
		860.37	4.48	-1.33E-01		1.06E+00
		2614.66	35.85	0.00E+00		3.14E-01
+	BI-210M	262.00	45.00	-1.50E-02	5.38E-02	5.38E-02
		300.00	23.00	-6.29E-02		1.18E-01
+	PB-210	46.50	4.25	4.94E-01	7.39E-01	7.39E-01
+	PB-211	404.84	2.90	-2.68E-01	9.07E-01	9.07E-01
		831.96	2.90	-3.63E-01		1.79E+00
+	BI-212	727.17	11.80	6.39E-02	3.99E-01	3.99E-01
		1620.62	2.75	4.06E-01		2.41E+00
+	PB-212	238.63	44.60	-7.69E-03	5.47E-02	5.47E-02
		300.09	3.41	-4.24E-01		7.93E-01
+	BI-214	609.31	46.30	2.90E-02	9.82E-02	9.82E-02
		1120.29	15.10	-2.03E-01		2.27E-01
		1764.49	15.80	-1.15E-01		3.98E-01
		2204.22	4.98	-4.06E-02		8.95E-01
+	PB-214	295.21	19.19	2.21E-02	8.56E-02	1.37E-01
		351.92	37.19	2.94E-02		8.56E-02
+	RN-219	401.80	6.50	1.38E-01	4.76E-01	4.76E-01
+	RA-223	323.87	3.88	1.60E-01	7.04E-01	7.04E-01
+	RA-224	240.98	3.95	2.40E-01	6.36E-01	6.36E-01
+	RA-225	40.00	31.00	-2.21E-02	1.11E-01	1.11E-01
+	RA-226	186.21	3.28	4.43E-01	7.47E-01	7.47E-01
+	TH-227	50.10	8.40	7.34E-02	2.18E-01	3.29E-01
		236.00	11.50	1.82E-02		2.18E-01
		256.20	6.30	4.08E-03		4.15E-01
+	AC-228	338.32	11.40	4.57E-02	1.80E-01	2.61E-01
		911.07	27.70	1.59E-03		1.80E-01
		969.11	16.60	-1.24E-01		2.67E-01
+	TH-230	48.44	16.90	4.12E-02	1.74E-01	1.74E-01
		62.85	4.60	5.11E-01		5.63E-01
		67.67	0.37	-2.52E+00		5.39E+00
+	PA-231	283.67	1.60	5.65E-01	1.38E+00	1.82E+00
		302.67	2.30	4.09E-01		1.38E+00
+	TH-231	25.64	14.70	3.39E-01	3.00E-01	6.97E-01
		84.21	6.40	1.34E-02		3.00E-01
+	PA-233	311.98	38.60	-9.26E-04	7.29E-02	7.29E-02
+	PA-234	131.20	20.40	2.56E-02	8.52E-02	8.52E-02
		733.99	8.80	3.25E-01		5.80E-01

Analysis Report for 1707091-02

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	PA-234	946.00	12.00	0.00E+00	8.52E-02	3.22E-01
+	PA-234M	1001.03	0.92	2.17E+00	5.22E+00	5.22E+00
+	TH-234	63.29	3.80	6.17E-01	6.79E-01	6.79E-01
+	U-235	143.76	10.50	9.45E-03	1.96E-01	1.96E-01
		163.35	4.70	-7.00E-02		4.60E-01
		205.31	4.70	1.70E-01		4.62E-01
+	NP-237	86.50	12.60	-2.02E-01	1.43E-01	1.43E-01
+	NP-239	106.10	22.70	2.81E-02	8.05E-02	8.05E-02
		228.18	10.70	3.65E-02		2.17E-01
		277.60	14.10	-2.40E-02		1.99E-01
+	AM-241	59.54	35.90	3.78E-02	7.18E-02	7.18E-02
+	AM-243	74.67	66.00	1.88E-02	3.48E-02	3.48E-02
+	CM-243	209.75	3.29	-5.99E-02	2.00E-01	6.33E-01
		228.14	10.60	3.67E-02		2.19E-01
		277.60	14.00	-2.41E-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
? = 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	3.07E-01	3.07E-01	7.97E-02	1.35E-01
NA-22	1274.54	99.94	4.28E-02	4.28E-02	1.01E-02	1.66E-02
NA-24	1368.53	99.99	5.01E-02	5.01E-02	-1.53E-02	1.99E-02
	2754.09	99.86	7.55E-02		4.07E-03	2.68E-02
AL-26	1808.65	99.76	5.92E-02	5.92E-02	1.11E-02	2.29E-02
K-40	1460.81	10.67	4.52E-01	4.52E-01	-1.19E-01	1.75E-01
AR-41	1293.64	99.16	5.49E-02	5.49E-02	1.17E-02	2.22E-02

Analysis Report for 1707091-02

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	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	TI-44	67.88		94.40	2.11E-02	2.11E-02	-9.85E-03	9.92E-03
		78.34		96.00	2.26E-02		-2.74E-03	1.07E-02
	SC-46	889.25		99.98	4.51E-02	3.42E-02	-1.04E-02	1.91E-02
		1120.51		99.99	3.42E-02		-3.07E-02	1.28E-02
	V-48	983.52		99.98	4.26E-02	4.26E-02	7.09E-03	1.75E-02
		1312.10		97.50	6.24E-02		1.67E-02	2.61E-02
	CR-51	320.08		9.83	2.71E-01	2.71E-01	5.28E-02	1.22E-01
	MN-54	834.83		99.97	5.63E-02	5.63E-02	7.54E-03	2.48E-02
	CO-56	846.75		99.96	5.14E-02	5.14E-02	2.07E-03	2.23E-02
		1037.75		14.03	3.36E-01		1.13E-01	1.39E-01
		1238.25		67.00	9.39E-02		2.59E-02	4.00E-02
		1771.40		15.51	5.17E-01		2.31E-01	2.17E-01
		2598.48		16.90	3.23E-01		-8.79E-02	1.02E-01
	CO-57	122.06		85.51	2.00E-02	2.00E-02	2.45E-03	9.29E-03
		136.48		10.60	1.85E-01		9.11E-03	8.64E-02
	CO-58	810.76		99.40	5.38E-02	5.38E-02	2.16E-02	2.37E-02
	FE-59	1099.22		56.50	6.65E-02	6.65E-02	-2.77E-03	2.57E-02
		1291.56		43.20	1.09E-01		1.67E-02	4.34E-02
	CO-60	1173.22		100.00	4.34E-02	4.34E-02	-3.31E-03	1.72E-02
		1332.49		100.00	5.22E-02		-1.11E-02	2.11E-02
	ZN-65	1115.52		50.75	8.80E-02	8.80E-02	3.47E-03	3.56E-02
	GA-67	93.31		35.70	6.63E-02	6.63E-02	5.81E-02	3.16E-02
		208.95		2.24	8.87E-01		2.79E-03	4.06E-01
		300.22		16.00	1.69E-01		-9.07E-02	7.72E-02
	SE-75	121.11		16.70	1.07E-01	3.17E-02	6.73E-03	5.00E-02
		136.00		59.20	3.17E-02		-1.01E-03	1.48E-02
		264.65		59.80	4.09E-02		-5.21E-03	1.87E-02
		279.53		25.20	1.15E-01		-1.43E-02	5.31E-02
		400.65		11.40	2.56E-01		-3.25E-02	1.14E-01
+	RB-82	776.52	*	13.00	3.44E-01	3.44E-01	2.38E-01	1.48E-01
	RB-83	520.41		46.00	6.58E-02	6.58E-02	3.04E-03	2.83E-02
		529.64		30.30	8.28E-02		-3.13E-02	3.43E-02
		552.65		16.40	2.20E-01		-5.87E-02	9.65E-02
	KR-85	513.99		0.43	1.26E+01	1.26E+01	6.08E+00	5.82E+00
	SR-85	513.99		99.27	5.50E-02	5.50E-02	2.66E-02	2.54E-02
	Y-88	898.02		93.40	5.27E-02	3.69E-02	-8.51E-03	2.26E-02
		1836.01		99.38	3.69E-02		-2.01E-02	1.17E-02
	MO-93	263.06		56.72	4.13E-02	4.13E-02	-1.61E-02	1.88E-02
		684.67		99.68	4.47E-02		1.43E-02	1.96E-02
		1477.11		99.08	4.92E-02		2.05E-03	1.91E-02
	NB-93M	16.57		9.43	4.14E+00	4.14E+00	6.44E+00	1.98E+00
	NB-94	702.63		100.00	4.32E-02	4.32E-02	-1.56E-02	1.88E-02
		871.10		100.00	5.27E-02		-1.57E-02	2.29E-02
	NB-95	765.79		99.81	4.26E-02	4.26E-02	-3.96E-03	1.82E-02
	NB-95M	235.69		25.00	1.00E-01	1.00E-01	8.38E-03	4.64E-02
	ZR-95	724.18		43.70	1.10E-01	7.33E-02	4.55E-02	4.84E-02
		756.72		55.30	7.33E-02		-4.65E-02	3.12E-02
	MO-99	181.06		6.20	3.55E-01	3.55E-01	-2.71E-01	1.65E-01
		739.58		12.80	3.94E-01		-1.05E-01	1.74E-01
		778.00		4.50	1.20E+00		3.40E-02	5.31E-01
	RU-103	497.08		89.00	3.46E-02	3.46E-02	-7.95E-03	1.50E-02
	RU-106	621.84		9.80	3.92E-01	3.92E-01	-2.40E-02	1.70E-01
	AG-108M	433.93		89.90	3.66E-02	3.66E-02	-7.87E-03	1.64E-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	4.66E-02	3.66E-02	-5.44E-03	2.06E-02
		722.95		90.50	5.31E-02		9.60E-03	2.34E-02
	CD-109	88.03		3.72	5.01E-01	5.01E-01	-9.28E-01	2.36E-01
	AG-110M	657.75		93.14	5.55E-02	5.55E-02	1.94E-02	2.49E-02
		677.61		10.53	4.19E-01		4.11E-02	1.83E-01
		706.67		16.46	2.71E-01		1.99E-03	1.18E-01
		763.93		21.98	2.13E-01		6.15E-02	9.24E-02
		884.67		71.63	6.00E-02		2.03E-02	2.51E-02
		1384.27		23.94	2.40E-01		-3.20E-02	9.85E-02
	CD-113M	263.70		0.02	1.05E+02	1.05E+02	-6.06E+01	4.78E+01
	SN-113	255.12		1.93	1.32E+00	4.81E-02	-4.33E-02	6.08E-01
		391.69		64.90	4.81E-02		-8.75E-03	2.16E-02
	TE123M	159.00		84.10	2.64E-02	2.64E-02	5.72E-03	1.24E-02
	SB-124	602.71		97.87	4.12E-02	4.12E-02	3.27E-03	1.81E-02
		645.85		7.26	5.65E-01		-1.06E-01	2.47E-01
		722.78		11.10	4.33E-01		7.82E-02	1.90E-01
		1691.02		49.00	6.91E-02		-4.07E-02	2.19E-02
	I-125	35.49		6.49	6.49E-01	6.49E-01	-1.91E-01	3.06E-01
	SB-125	176.33		6.89	3.34E-01	1.09E-01	2.19E-02	1.57E-01
		427.89		29.33	1.09E-01		-5.21E-02	4.84E-02
		463.38		10.35	3.34E-01		-2.99E-02	1.49E-01
		600.56		17.80	2.37E-01		6.14E-02	1.05E-01
		635.90		11.32	3.94E-01		6.74E-02	1.74E-01
	SB-126	414.70		83.30	3.77E-02	3.77E-02	5.84E-03	1.69E-02
		666.33		99.60	4.88E-02		-2.49E-03	2.17E-02
		695.00		99.60	5.38E-02		1.36E-02	2.41E-02
		720.50		53.80	9.12E-02		2.15E-02	4.03E-02
	SN-126	87.57		37.00	5.04E-02	5.04E-02	-9.33E-02	2.37E-02
	SB-127	473.00		25.00	1.24E-01	1.24E-01	7.64E-03	5.42E-02
		685.20		35.70	1.25E-01		4.01E-02	5.48E-02
		783.80		14.70	2.50E-01		-8.55E-02	1.04E-01
	I-129	29.78		57.00	1.14E-01	1.14E-01	-3.26E-02	5.39E-02
		33.60		13.20	3.63E-01		1.15E-02	1.72E-01
		39.58		7.52	4.63E-01		-9.27E-02	2.19E-01
	I-131	284.30		6.05	4.83E-01	3.63E-02	1.50E-01	2.23E-01
		364.48		81.20	3.63E-02		5.36E-03	1.64E-02
		636.97		7.26	5.73E-01		5.83E-02	2.51E-01
		722.89		1.80	2.67E+00		4.83E-01	1.17E+00
+	TE-132	49.72		13.10	2.13E-01	6.14E-02	4.75E-02	1.01E-01
		228.16	*	88.00	6.14E-02		1.17E-02	2.97E-02
	BA-133	81.00		33.00	6.02E-02	4.87E-02	-2.13E-02	2.84E-02
		302.84		17.80	1.78E-01		5.28E-02	8.24E-02
		356.01		60.00	4.87E-02		-6.95E-03	2.20E-02
	I-133	529.87		86.30	2.93E-02	2.93E-02	-1.11E-02	1.21E-02
+	XE-133	81.00	*	38.00	1.70E-01	1.70E-01	3.30E-02	8.34E-02
	CS-134	563.23		8.38	4.16E-01	4.35E-02	4.26E-02	1.81E-01
		569.32		15.43	2.47E-01		3.92E-02	1.09E-01
		604.70		97.60	4.35E-02		-1.94E-02	1.92E-02
		795.84		85.40	6.73E-02		1.68E-02	2.99E-02
		801.93		8.73	6.49E-01		2.12E-01	2.88E-01
	CS-135	268.24		16.00	1.67E-01	1.67E-01	1.11E-02	7.70E-02
	I-135	1131.51		22.50	2.31E-01	1.77E-01	-2.42E-02	9.57E-02
		1260.41		28.60	1.77E-01		3.77E-02	7.17E-02

Analysis Report for 1707091-02

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
I-135	1678.03	9.54	5.26E-01	1.77E-01	-3.58E-01	1.97E-01
CS-136	153.22	7.46	2.65E-01	4.20E-02	-4.32E-02	1.23E-01
	163.89	4.61	4.74E-01		-1.16E-01	2.22E-01
	176.55	13.56	1.69E-01		5.57E-02	7.91E-02
	273.65	12.66	2.20E-01		-8.39E-03	1.01E-01
	340.57	48.50	6.02E-02		1.24E-02	2.73E-02
	818.50	99.70	4.20E-02		-2.46E-02	1.77E-02
	1048.07	79.60	4.53E-02		-1.37E-02	1.75E-02
	1235.34	19.70	3.06E-01		7.50E-02	1.29E-01
CS-137	661.65	85.12	5.67E-02	5.67E-02	6.94E-03	2.52E-02
LA-138	788.74	34.00	1.24E-01	7.86E-02	3.10E-04	5.27E-02
	1435.80	66.00	7.86E-02		-1.36E-02	3.12E-02
CE-139	165.85	80.35	2.77E-02	2.77E-02	-3.18E-04	1.30E-02
BA-140	162.64	6.70	3.22E-01	1.48E-01	-4.90E-02	1.51E-01
	304.84	4.50	7.04E-01		1.38E-01	3.25E-01
	423.70	3.20	1.04E+00		3.74E-01	4.67E-01
	437.55	2.00	1.72E+00		3.48E-01	7.73E-01
	537.32	25.00	1.48E-01		4.44E-02	6.51E-02
LA-140	328.77	20.50	1.33E-01	5.99E-02	-3.78E-03	6.03E-02
	487.03	45.50	6.43E-02		-5.13E-03	2.78E-02
	815.85	23.50	1.99E-01		-6.28E-03	8.55E-02
	1596.49	95.49	5.99E-02		-7.61E-03	2.38E-02
CE-141	145.44	48.40	4.11E-02	4.11E-02	-1.40E-03	1.92E-02
CE-143	57.36	11.80	1.90E-01	6.48E-02	-1.23E-01	8.97E-02
	293.26	42.00	6.48E-02		2.08E-02	2.96E-02
	664.55	5.20	7.91E-01		-3.60E-01	3.44E-01
CE-144	133.54	10.80	1.60E-01	1.60E-01	-9.76E-02	7.42E-02
PM-144	476.78	42.00	7.02E-02	4.09E-02	-2.03E-03	3.05E-02
	618.01	98.60	4.09E-02		-8.63E-03	1.79E-02
	696.49	99.49	5.59E-02		2.81E-02	2.51E-02
PM-145	36.85	21.70	1.85E-01	9.90E-02	3.23E-02	8.76E-02
	37.36	39.70	9.90E-02		1.72E-02	4.68E-02
	42.30	15.10	2.14E-01		-1.63E-01	1.01E-01
	72.40	2.31	9.13E-01		-2.33E-01	4.32E-01
PM-146	453.90	39.94	8.30E-02	8.30E-02	2.46E-02	3.69E-02
	735.90	14.01	3.49E-01		0.00E+00	1.53E-01
	747.13	13.10	3.88E-01		6.39E-02	1.71E-01
ND-147	91.11	28.90	8.07E-02	8.07E-02	6.80E-02	3.84E-02
	531.02	13.10	2.02E-01		1.35E-03	8.45E-02
PM-149	285.90	3.10	9.04E-01	9.04E-01	1.22E-01	4.15E-01
EU-152	121.78	20.50	8.31E-02	8.31E-02	1.02E-02	3.87E-02
	244.69	5.40	4.15E-01		-2.07E-01	1.89E-01
	344.27	19.13	1.38E-01		-5.42E-02	6.18E-02
	778.89	9.20	5.74E-01		7.49E-02	2.53E-01
	964.01	10.40	5.04E-01		-9.37E-02	2.16E-01
	1085.78	7.22	7.77E-01		6.43E-02	3.31E-01
	1112.02	9.60	5.22E-01		1.23E-01	2.16E-01
	1407.95	14.94	3.67E-01		4.63E-02	1.48E-01
GD-153	97.43	31.30	6.52E-02	6.52E-02	-1.85E-02	3.09E-02
	103.18	22.20	7.76E-02		7.84E-03	3.63E-02
EU-154	123.07	40.50	4.13E-02	4.13E-02	2.80E-03	1.92E-02
	723.30	19.70	2.44E-01		1.01E-01	1.07E-01
	873.19	11.50	4.97E-01		5.72E-02	2.19E-01

Analysis Report for 1707091-02

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
EU-154	996.32	10.30	3.65E-01	4.13E-02	-1.45E-01	1.45E-01
	1004.76	17.90	2.56E-01		-1.61E-02	1.06E-01
	1274.45	35.50	1.20E-01		2.84E-02	4.66E-02
EU-155	86.50	30.90	5.84E-02	5.84E-02	-8.23E-02	2.74E-02
	105.30	20.70	8.79E-02		3.10E-02	4.12E-02
EU-156	811.77	10.40	5.15E-01	4.18E-01	3.10E-01	2.26E-01
	1153.47	7.20	5.94E-01		-9.06E-03	2.36E-01
	1230.71	8.90	4.18E-01		-3.53E-01	1.56E-01
HO-166M	184.41	72.60	3.41E-02	3.41E-02	2.10E-02	1.60E-02
	280.45	29.60	1.01E-01		3.88E-02	4.68E-02
	410.94	11.10	2.59E-01		2.75E-02	1.14E-01
	711.69	54.10	8.08E-02		-1.76E-02	3.51E-02
TM-171	66.72	0.14	1.51E+01	1.51E+01	-3.35E+00	7.15E+00
HF-172	67.35	5.31	3.98E-01	1.47E-01	-8.79E-02	1.88E-01
	125.81	11.30	1.47E-01		-1.48E-02	6.83E-02
LU-172	181.53	20.60	1.14E-01	7.48E-02	-1.31E-02	5.32E-02
	900.72	29.81	1.93E-01		2.85E-02	8.44E-02
	1093.66	62.50	7.48E-02		-3.92E-03	3.07E-02
LU-173	100.72	5.24	3.32E-01	1.31E-01	-5.01E-02	1.55E-01
	272.11	21.20	1.31E-01		2.25E-03	6.02E-02
HF-175	343.40	84.00	3.13E-02	3.13E-02	-1.23E-02	1.40E-02
LU-176	88.34	13.30	1.40E-01	2.67E-02	-2.60E-01	6.60E-02
	201.83	86.00	2.67E-02		6.29E-03	1.24E-02
	306.78	94.00	3.29E-02		5.94E-03	1.52E-02
HF-181	133.02	41.70	4.16E-02	4.08E-02	-1.80E-02	1.94E-02
	345.85	17.20	1.57E-01		-3.08E-03	7.04E-02
	482.03	82.80	4.08E-02		1.14E-02	1.81E-02
TA-182	67.75	41.20	4.83E-02	4.83E-02	-2.26E-02	2.28E-02
	1121.30	34.90	9.81E-02		-6.89E-02	3.67E-02
	1189.05	16.23	3.44E-01		5.20E-02	1.44E-01
	1221.41	26.98	2.12E-01		7.63E-02	8.87E-02
	1231.02	11.44	3.96E-01		-1.07E-01	1.57E-01
IR-192	308.46	29.68	9.95E-02	7.80E-02	-2.66E-02	4.56E-02
	468.07	48.10	7.80E-02		3.37E-02	3.51E-02
HG-203	279.19	77.30	3.71E-02	3.71E-02	-1.99E-04	1.71E-02
TL-204	374.74	94.11	3.66E-02	3.66E-02	-2.77E-03	1.67E-02
	899.15	99.16	5.62E-02		1.85E-02	2.46E-02
	911.74	91.10	5.07E-02		-8.43E-03	2.14E-02
BI-207	569.67	97.72	3.91E-02	3.91E-02	6.19E-03	1.72E-02
	1063.62	74.90	6.43E-02		-1.39E-02	2.67E-02
TL-208	583.14	30.22	1.12E-01	1.12E-01	1.55E-02	4.83E-02
	860.37	4.48	1.06E+00		-1.33E-01	4.52E-01
	2614.66	35.85	3.14E-01		0.00E+00	1.29E-01
BI-210M	262.00	45.00	5.38E-02	5.38E-02	-1.50E-02	2.46E-02
	300.00	23.00	1.18E-01		-6.29E-02	5.36E-02
PB-210	46.50	4.25	7.39E-01	7.39E-01	4.94E-01	3.51E-01
PB-211	404.84	2.90	9.07E-01	9.07E-01	-2.68E-01	3.98E-01
	831.96	2.90	1.79E+00		-3.63E-01	7.83E-01
BI-212	727.17	11.80	3.99E-01	3.99E-01	6.39E-02	1.75E-01
	1620.62	2.75	2.41E+00		4.06E-01	9.89E-01
PB-212	238.63	44.60	5.47E-02	5.47E-02	-7.69E-03	2.52E-02
	300.09	3.41	7.93E-01		-4.24E-01	3.62E-01
BI-214	609.31	46.30	9.82E-02	9.82E-02	2.90E-02	4.38E-02

Analysis Report for 1707091-02

BLANK

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
BI-214	1120.29	15.10	2.27E-01	9.82E-02	-2.03E-01	8.48E-02
	1764.49	15.80	3.98E-01		-1.15E-01	1.58E-01
	2204.22	4.98	8.95E-01		-4.06E-02	2.83E-01
PB-214	295.21	19.19	1.37E-01	8.56E-02	2.21E-02	6.23E-02
	351.92	37.19	8.56E-02		2.94E-02	3.90E-02
RN-219	401.80	6.50	4.76E-01	4.76E-01	1.38E-01	2.13E-01
RA-223	323.87	3.88	7.04E-01	7.04E-01	1.60E-01	3.19E-01
RA-224	240.98	3.95	6.36E-01	6.36E-01	2.40E-01	2.93E-01
RA-225	40.00	31.00	1.11E-01	1.11E-01	-2.21E-02	5.22E-02
RA-226	186.21	3.28	7.47E-01	7.47E-01	4.43E-01	3.50E-01
TH-227	50.10	8.40	3.29E-01	2.18E-01	7.34E-02	1.56E-01
	236.00	11.50	2.18E-01		1.82E-02	1.01E-01
	256.20	6.30	4.15E-01		4.08E-03	1.91E-01
AC-228	338.32	11.40	2.61E-01	1.80E-01	4.57E-02	1.19E-01
	911.07	27.70	1.80E-01		1.59E-03	7.70E-02
	969.11	16.60	2.67E-01		-1.24E-01	1.11E-01
TH-230	48.44	16.90	1.74E-01	1.74E-01	4.12E-02	8.25E-02
	62.85	4.60	5.63E-01		5.11E-01	2.68E-01
	67.67	0.37	5.39E+00		-2.52E+00	2.54E+00
PA-231	283.67	1.60	1.82E+00	1.38E+00	5.65E-01	8.41E-01
	302.67	2.30	1.38E+00		4.09E-01	6.37E-01
TH-231	25.64	14.70	6.97E-01	3.00E-01	3.39E-01	3.32E-01
	84.21	6.40	3.00E-01		1.34E-02	1.41E-01
PA-233	311.98	38.60	7.29E-02	7.29E-02	-9.26E-04	3.32E-02
PA-234	131.20	20.40	8.52E-02	8.52E-02	2.56E-02	3.96E-02
	733.99	8.80	5.80E-01		3.25E-01	2.57E-01
	946.00	12.00	3.22E-01		0.00E+00	1.30E-01
PA-234M	1001.03	0.92	5.22E+00	5.22E+00	2.17E+00	2.18E+00
TH-234	63.29	3.80	6.79E-01	6.79E-01	6.17E-01	3.23E-01
U-235	143.76	10.50	1.96E-01	1.96E-01	9.45E-03	9.17E-02
	163.35	4.70	4.60E-01		-7.00E-02	2.15E-01
	205.31	4.70	4.62E-01		1.70E-01	2.13E-01
NP-237	86.50	12.60	1.43E-01	1.43E-01	-2.02E-01	6.73E-02
NP-239	106.10	22.70	8.05E-02	8.05E-02	2.81E-02	3.78E-02
	228.18	10.70	2.17E-01		3.65E-02	1.00E-01
	277.60	14.10	1.99E-01		-2.40E-02	9.16E-02
AM-241	59.54	35.90	7.18E-02	7.18E-02	3.78E-02	3.42E-02
AM-243	74.67	66.00	3.48E-02	3.48E-02	1.88E-02	1.65E-02
CM-243	209.75	3.29	6.33E-01	2.00E-01	-5.99E-02	2.91E-01
	228.14	10.60	2.19E-01		3.67E-02	1.01E-01
	277.60	14.00	2.00E-01		-2.41E-02	9.21E-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

Analysis Report for 1707091-02

BLANK

No Action Level results available for reporting purposes.

DATA REVIEW COMMENTS REPORT

Creation Date	Comment	User

No Data Review Comments Entered.

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

Sample Title: BLANK

Elapsed Live time: 3600
Elapsed Real Time: 3618

Channel								
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	8	53
17:	40	29	26	25	17	22	19	23
25:	17	23	15	27	9	18	12	12
33:	18	18	13	12	13	11	16	17
41:	11	15	12	17	20	30	11	19
49:	12	7	16	15	10	13	10	13
57:	12	15	18	17	21	34	24	11
65:	16	14	10	9	15	13	14	14
73:	18	22	21	22	17	13	15	7
81:	23	14	9	15	11	13	14	10
89:	9	15	29	39	23	16	12	13
97:	15	14	11	5	8	9	11	12
105:	15	13	11	8	12	10	13	13
113:	15	13	18	9	14	9	9	5
121:	10	8	14	7	6	5	6	11
129:	10	9	6	7	11	7	9	9
137:	16	9	13	11	16	7	12	15
145:	7	9	13	8	12	4	7	15
153:	7	7	13	9	11	17	8	10
161:	11	13	11	7	12	9	9	14
169:	8	14	9	10	12	14	10	6
177:	9	12	9	9	6	9	9	18
185:	16	12	9	3	9	5	7	6
193:	9	7	5	3	14	7	6	10
201:	9	6	9	10	8	3	4	3
209:	4	8	9	12	9	7	2	9
217:	10	14	5	6	4	3	6	9
225:	5	8	12	2	4	6	6	7
233:	8	11	5	4	4	12	8	7
241:	7	6	5	5	6	3	5	11
249:	4	8	7	4	9	8	3	12
257:	2	9	5	7	6	4	2	5
265:	6	7	8	9	3	7	9	8
273:	4	7	6	6	10	5	5	7
281:	9	7	9	8	2	6	8	3
289:	4	4	4	4	8	8	6	2
297:	3	3	6	10	9	3	8	8
305:	6	9	6	4	5	4	7	10
313:	3	3	4	3	5	3	4	4
321:	6	5	5	2	5	4	4	3
329:	8	5	1	4	6	7	5	3
337:	3	6	7	3	4	3	6	3
345:	4	2	3	5	4	4	8	7
353:	4	4	4	5	2	3	5	3
361:	2	8	4	3	3	2	6	2

369:	4	6	6	7	6	6	4	3

Sample Title: BLANK

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

801:	2	3	1	3	0	1	1	2

Sample Title: BLANK

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

1233:	0	0	2	1	2	1	2	2

Sample Title: BLANK

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

1665:	0	3	0	0	0	0	2	1

Sample Title: BLANK

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

2097:	1	0	1	0	0	0	0	1

Sample Title: BLANK

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

2529:	0	0	1	0	0	0	0	0

Sample Title: BLANK

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

2961:	1	0	0	0	0	0	1	0

Sample Title: BLANK

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

3393:	0	0	0	0	0	0	0	0

Sample Title: BLANK

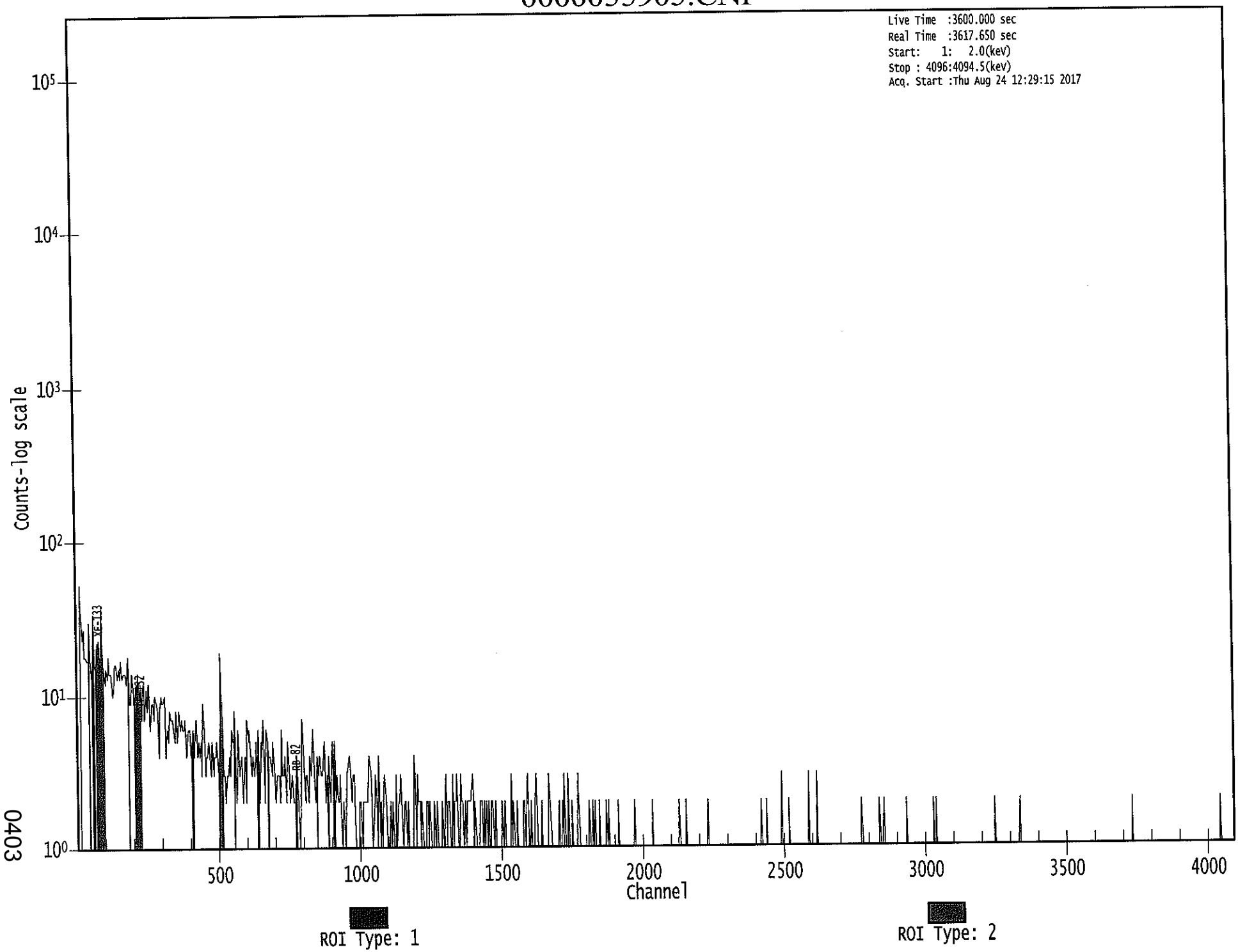
Channel								
3401:	1	0	0	0	0	0	0	0
3409:	0	0	0	0	0	0	0	0
3417:	0	0	0	0	0	0	0	1
3425:	0	1	0	1	0	0	0	0
3433:	0	1	0	0	0	0	0	0
3441:	1	0	1	0	0	0	0	0
3449:	0	0	0	0	0	0	0	0
3457:	0	0	0	0	0	0	0	0
3465:	0	0	0	0	0	0	0	1
3473:	0	0	0	0	0	0	0	0
3481:	0	0	0	0	0	0	0	0
3489:	0	0	0	0	0	0	0	0
3497:	0	0	0	0	0	1	0	0
3505:	0	0	0	0	0	1	1	0
3513:	0	0	0	0	0	0	0	0
3521:	1	0	0	0	0	0	0	0
3529:	0	1	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	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	1	0	0	0	0
3601:	0	0	1	0	0	1	0	0
3609:	0	0	0	0	0	0	0	0
3617:	0	0	0	1	0	0	0	0
3625:	0	0	0	0	0	1	0	0
3633:	0	0	1	0	0	0	0	0
3641:	0	0	0	0	0	0	0	0
3649:	0	0	1	0	1	1	0	0
3657:	0	0	0	0	0	1	1	0
3665:	0	1	0	0	0	0	0	0
3673:	0	0	0	0	0	0	0	0
3681:	0	0	0	0	0	0	0	0
3689:	0	0	0	1	0	0	0	0
3697:	0	0	0	0	0	1	0	0
3705:	0	0	0	0	0	0	0	0
3713:	0	0	0	0	0	0	0	0
3721:	0	0	0	0	0	0	0	0
3729:	0	0	0	2	0	0	0	0
3737:	0	0	0	0	1	0	0	0
3745:	0	0	0	0	0	0	0	0
3753:	0	0	0	0	0	1	0	0
3761:	1	0	0	0	0	0	0	0
3769:	0	0	0	0	0	0	0	0
3777:	0	1	0	0	1	0	0	0
3785:	0	0	0	0	0	0	0	0
3793:	0	0	0	0	1	0	0	0
3801:	0	0	0	0	0	0	0	1
3809:	1	0	0	0	0	0	0	0
3817:	0	0	0	0	0	0	1	0

3825:	0	0	0	0	0	0	0	0

Sample Title: BLANK

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

0000055905.CNF



0403

Apex-Gamma

Analysis Report for 1707091-03
HTC-A08-BKGD01-0006-01

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 1707091-03
Sample Description	: HTC-A08-BKGD01-0006-01
Sample Type	: SOIL
Sample Size	: 5.846E+02 grams
Facility	: Countroom
Sample Taken On	: 5/15/2017 12:48:13PM
Acquisition Started	: 8/24/2017 8:20:13AM
Procedure	: GAS-1602 pCi
Operator	: Administrator
Detector Name	: GE4
Geometry	: GAS-1602
Live Time	: 3600.0 seconds
Real Time	: 3602.5 seconds
Dead Time	: 0.07 %
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	: 1/14/2017
Efficiency Calibration Used Done On	: 1/14/2017
Efficiency Calibration Description	:
Sample Number	: 55877

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

Analysis Report for 1707091-03

HTC-A08-BKGD01-0006-01

PEAK LOCATE REPORT

Peak Locate Performed on : 8/24/2017 9:20:17AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096
Peak Search Sensitivity : 2.50

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
1	32.05	31.09	0.0000	0.00
2	63.39	62.44	0.0000	0.00
3	75.97	75.03	0.0000	0.00
4	86.63	85.69	0.0000	0.00
5	93.08	92.14	0.0000	0.00
6	144.14	143.22	0.0000	0.00
7	186.03	185.12	0.0000	0.00
8	208.98	208.08	0.0000	0.00
9	238.89	238.00	0.0000	0.00
10	295.37	294.49	0.0000	0.00
11	300.20	299.33	0.0000	0.00
12	338.64	337.79	0.0000	0.00
13	351.75	350.89	0.0000	0.00
14	390.96	390.12	0.0000	0.00
15	402.82	401.99	0.0000	0.00
16	456.37	455.56	0.0000	0.00
17	463.70	462.89	0.0000	0.00
18	511.11	510.31	0.0000	0.00
19	583.24	582.47	0.0000	0.00
20	609.41	608.65	0.0000	0.00
21	616.76	616.00	0.0000	0.00
22	661.84	661.10	0.0000	0.00
23	727.24	726.53	0.0000	0.00
24	766.76	766.06	0.0000	0.00
25	796.60	795.91	0.0000	0.00
26	910.46	909.83	0.0000	0.00
27	919.49	918.86	0.0000	0.00
28	969.30	968.69	0.0000	0.00
29	1086.20	1085.64	0.0000	0.00
30	1120.33	1119.79	0.0000	0.00
31	1158.71	1158.18	0.0000	0.00
32	1249.27	1248.79	0.0000	0.00
33	1299.76	1299.30	0.0000	0.00
34	1406.14	1405.73	0.0000	0.00
35	1460.71	1460.34	0.0000	0.00
36	1495.82	1495.46	0.0000	0.00
37	1646.26	1645.98	0.0000	0.00
38	1694.70	1694.44	0.0000	0.00
39	1764.17	1763.96	0.0000	0.00
40	2368.59	2368.74	0.0000	0.00
41	2614.08	2614.40	0.0000	0.00

Analysis Report for 1707091-03

HTC-A08-BKGD01-0006-01

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1707091-03

HTC-A08-BKGD01-0006-01

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 8/24/2017 9:20:17AM

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

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
	1	32.05	29 -	34	31.09	5.77E+01	55.94	5.81E+02	1.67
	2	63.39	57 -	67	62.44	2.40E+02	118.83	1.76E+03	3.01
	3	75.97	69 -	81	75.03	9.22E+02	146.99	2.09E+03	4.43
	4	86.63	82 -	88	85.69	9.99E+01	87.02	1.31E+03	1.63
	5	93.08	88 -	96	92.14	1.73E+02	107.14	1.58E+03	1.86
	6	144.14	140 -	147	143.22	5.96E+01	70.51	7.91E+02	2.58
	7	186.03	181 -	189	185.12	1.07E+02	73.47	7.63E+02	1.88
	8	208.98	204 -	212	208.08	5.95E+01	65.87	6.33E+02	4.34
	9	238.89	232 -	244	238.00	6.61E+02	97.78	8.17E+02	2.25
M	10	295.37	288 -	302	294.49	1.33E+02	42.78	2.73E+02	2.01
m	11	300.20	288 -	302	299.33	3.56E+01	37.82	2.61E+02	2.55
	12	338.64	332 -	344	337.79	1.10E+02	63.85	4.23E+02	2.80
	13	351.75	346 -	357	350.89	2.48E+02	61.94	3.61E+02	2.47
	14	390.96	387 -	396	390.12	3.60E+01	41.88	2.30E+02	4.61
	15	402.82	399 -	408	401.99	3.94E+01	45.41	2.77E+02	1.62
	16	456.37	453 -	458	455.56	1.92E+01	24.66	1.04E+02	2.72
	17	463.70	459 -	469	462.89	7.14E+01	39.62	1.73E+02	2.86
	18	511.11	505 -	515	510.31	9.09E+01	47.98	2.58E+02	2.73
	19	583.24	578 -	587	582.47	1.29E+02	40.95	1.67E+02	2.26
M	20	609.41	604 -	625	608.65	1.80E+02	35.61	1.03E+02	2.79
m	21	616.76	604 -	625	616.00	1.87E+01	23.45	7.60E+01	2.32
	22	661.84	657 -	666	661.10	5.70E+01	34.76	1.40E+02	3.15
	23	727.24	723 -	729	726.53	3.15E+01	22.92	7.11E+01	3.67
	24	766.76	762 -	769	766.06	3.80E+01	22.09	5.60E+01	4.71
	25	796.60	789 -	804	795.91	5.74E+01	37.79	1.19E+02	3.26
	26	910.46	903 -	914	909.83	9.46E+01	34.81	1.11E+02	3.37
	27	919.49	915 -	923	918.86	2.81E+01	24.66	7.58E+01	2.46
	28	969.30	965 -	973	968.69	3.37E+01	26.48	8.05E+01	2.75
	29	1086.20	1083 -	1088	1085.64	1.20E+01	12.96	2.40E+01	2.59
	30	1120.33	1115 -	1125	1119.79	6.86E+01	25.30	4.68E+01	3.37
	31	1158.71	1154 -	1164	1158.18	3.23E+01	21.31	4.15E+01	5.29
	32	1249.27	1246 -	1253	1248.79	1.82E+01	20.98	6.36E+01	3.41
	33	1299.76	1294 -	1304	1299.30	2.19E+01	18.15	3.02E+01	3.84
	34	1406.14	1401 -	1411	1405.73	1.40E+01	16.22	2.80E+01	1.91
	35	1460.71	1453 -	1466	1460.34	3.45E+02	38.81	1.40E+01	2.79
	36	1495.82	1492 -	1499	1495.46	1.30E+01	7.21	0.00E+00	4.48
	37	1646.26	1642 -	1649	1645.98	7.06E+00	7.21	3.89E+00	2.23
	38	1694.70	1690 -	1697	1694.44	9.00E+00	6.00	0.00E+00	2.92
	39	1764.17	1759 -	1769	1763.96	1.56E+01	13.67	1.69E+01	1.52
	40	2368.59	2365 -	2371	2368.74	7.39E+00	6.95	3.22E+00	3.50

Analysis Report for 1707091-03

HTC-A08-BKGD01-0006-01

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
41	2614.08	2610 -	2618	2614.40	4.50E+01	13.42	0.00E+00	2.47

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 : 8/24/2017 9:20:17AM

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

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	1	32.05	29 -	34	5.77E+01	55.94	5.81E+02	4.43E+01
	2	63.39	57 -	67	2.40E+02	118.83	1.76E+03	9.43E+01
	3	75.97	69 -	81	9.22E+02	146.99	2.09E+03	1.10E+02
	4	86.63	82 -	88	9.99E+01	87.02	1.31E+03	6.96E+01
	5	93.08	88 -	96	1.73E+02	107.14	1.58E+03	8.54E+01
	6	144.14	140 -	147	5.96E+01	70.51	7.91E+02	5.66E+01
	7	186.03	181 -	189	1.07E+02	73.47	7.63E+02	5.79E+01
	8	208.98	204 -	212	5.95E+01	65.87	6.33E+02	5.26E+01
	9	238.89	232 -	244	6.61E+02	97.78	8.17E+02	6.84E+01
M	10	295.37	288 -	302	1.33E+02	42.78	2.73E+02	2.71E+01
m	11	300.20	288 -	302	3.56E+01	37.82	2.61E+02	2.66E+01
	12	338.64	332 -	344	1.10E+02	63.85	4.23E+02	4.96E+01
	13	351.75	346 -	357	2.48E+02	61.94	3.61E+02	4.38E+01
	14	390.96	387 -	396	3.60E+01	41.88	2.30E+02	3.30E+01
	15	402.82	399 -	408	3.94E+01	45.41	2.77E+02	3.59E+01
	16	456.37	453 -	458	1.92E+01	24.66	1.04E+02	1.89E+01
	17	463.70	459 -	469	7.14E+01	39.62	1.73E+02	2.95E+01
	18	511.11	505 -	515	9.09E+01	47.98	2.58E+02	3.62E+01
	19	583.24	578 -	587	1.29E+02	40.95	1.67E+02	2.80E+01
M	20	609.41	604 -	625	1.80E+02	35.61	1.03E+02	1.66E+01
m	21	616.76	604 -	625	1.87E+01	23.45	7.60E+01	1.43E+01
	22	661.84	657 -	666	5.70E+01	34.76	1.40E+02	2.57E+01
	23	727.24	723 -	729	3.15E+01	22.92	7.11E+01	1.64E+01
	24	766.76	762 -	769	3.80E+01	22.09	5.60E+01	1.51E+01
	25	796.60	789 -	804	5.74E+01	37.79	1.19E+02	2.85E+01
	26	910.46	903 -	914	9.46E+01	34.81	1.11E+02	4.14E+01

Analysis Report for 1707091-03

HTC-A08-BKGD01-0006-01

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
27	919.49	915 -	923	2.81E+01	24.66	7.58E+01	1.83E+01
28	969.30	965 -	973	3.37E+01	26.48	8.05E+01	1.96E+01
29	1086.20	1083 -	1088	1.20E+01	12.96	2.40E+01	9.00E+00
30	1120.33	1115 -	1125	6.86E+01	25.30	4.68E+01	1.57E+01
31	1158.71	1154 -	1164	3.23E+01	21.31	4.15E+01	1.48E+01
32	1249.27	1246 -	1253	1.82E+01	20.98	6.36E+01	1.58E+01
33	1299.76	1294 -	1304	2.19E+01	18.15	3.02E+01	1.28E+01
34	1406.14	1401 -	1411	1.40E+01	16.22	2.80E+01	1.18E+01
35	1460.71	1453 -	1466	3.45E+02	38.81	1.40E+01	9.23E+00
36	1495.82	1492 -	1499	1.30E+01	7.21	0.00E+00	0.00E+00
37	1646.26	1642 -	1649	7.06E+00	7.21	3.89E+00	4.01E+00
38	1694.70	1690 -	1697	9.00E+00	6.00	0.00E+00	0.00E+00
39	1764.17	1759 -	1769	1.56E+01	13.67	1.69E+01	9.17E+00
40	2368.59	2365 -	2371	7.39E+00	6.95	3.22E+00	3.55E+00
41	2614.08	2610 -	2618	4.50E+01	13.42	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 : 8/24/2017 9:20:17AM

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

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

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
1	32.05	29 -	34	31.09	5.77E+01	55.94	5.81E+02	.....
2	63.39	57 -	67	62.44	2.40E+02	118.83	1.76E+03	TH-234
								TH-230
3	75.97	69 -	81	75.03	9.22E+02	146.99	2.09E+03	.....
4	86.63	82 -	88	85.69	9.99E+01	87.02	1.31E+03	NP-237
								EU-155
								SN-126
5	93.08	88 -	96	92.14	1.73E+02	107.14	1.58E+03	GA-67
6	144.14	140 -	147	143.22	5.96E+01	70.51	7.91E+02	U-235
7	186.03	181 -	189	185.12	1.07E+02	73.47	7.63E+02	RA-226

Analysis Report for 1707091-03

HTC-A08-BKGD01-0006-01

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	8	208.98	204 -	212	208.08	5.95E+01	65.87	6.33E+02	GA-67
									CM-243
	9	238.89	232 -	244	238.00	6.61E+02	97.78	8.17E+02	PB-212
M	10	295.37	288 -	302	294.49	1.33E+02	42.78	2.73E+02	PB-214
m	11	300.20	288 -	302	299.33	3.56E+01	37.82	2.61E+02	GA-67
									PB-212
									BI-210M
	12	338.64	332 -	344	337.79	1.10E+02	63.85	4.23E+02	AC-228
	13	351.75	346 -	357	350.89	2.48E+02	61.94	3.61E+02	PB-214
	14	390.96	387 -	396	390.12	3.60E+01	41.88	2.30E+02	SN-113
	15	402.82	399 -	408	401.99	3.94E+01	45.41	2.77E+02	.....
	16	456.37	453 -	458	455.56	1.92E+01	24.66	1.04E+02	.....
	17	463.70	459 -	469	462.89	7.14E+01	39.62	1.73E+02	SB-125
	18	511.11	505 -	515	510.31	9.09E+01	47.98	2.58E+02	.....
	19	583.24	578 -	587	582.47	1.29E+02	40.95	1.67E+02	TL-208
M	20	609.41	604 -	625	608.65	1.80E+02	35.61	1.03E+02	BI-214
m	21	616.76	604 -	625	616.00	1.87E+01	23.45	7.60E+01	.....
	22	661.84	657 -	666	661.10	5.70E+01	34.76	1.40E+02	CS-137
	23	727.24	723 -	729	726.53	3.15E+01	22.92	7.11E+01	BI-212
	24	766.76	762 -	769	766.06	3.80E+01	22.09	5.60E+01	NB-95
	25	796.60	789 -	804	795.91	5.74E+01	37.79	1.19E+02	CS-134
	26	910.46	903 -	914	909.83	9.46E+01	34.81	1.11E+02	AC-228
	27	919.49	915 -	923	918.86	2.81E+01	24.66	7.58E+01	.....
	28	969.30	965 -	973	968.69	3.37E+01	26.48	8.05E+01	AC-228
	29	1086.20	1083 -	1088	1085.64	1.20E+01	12.96	2.40E+01	EU-152
	30	1120.33	1115 -	1125	1119.79	6.86E+01	25.30	4.68E+01	BI-214
									SC-46
									TA-182
	31	1158.71	1154 -	1164	1158.18	3.23E+01	21.31	4.15E+01	.....
	32	1249.27	1246 -	1253	1248.79	1.82E+01	20.98	6.36E+01	.....
	33	1299.76	1294 -	1304	1299.30	2.19E+01	18.15	3.02E+01	.....
	34	1406.14	1401 -	1411	1405.73	1.40E+01	16.22	2.80E+01	.....
	35	1460.71	1453 -	1466	1460.34	3.45E+02	38.81	1.40E+01	K-40
	36	1495.82	1492 -	1499	1495.46	1.30E+01	7.21	0.00E+00	.....
	37	1646.26	1642 -	1649	1645.98	7.06E+00	7.21	3.89E+00	.....
	38	1694.70	1690 -	1697	1694.44	9.00E+00	6.00	0.00E+00	.....
	39	1764.17	1759 -	1769	1763.96	1.56E+01	13.67	1.69E+01	BI-214
	40	2368.59	2365 -	2371	2368.74	7.39E+00	6.95	3.22E+00	.....
	41	2614.08	2610 -	2618	2614.40	4.50E+01	13.42	0.00E+00	TL-208

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

Analysis Report for 1707091-03

HTC-A08-BKGD01-0006-01

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 8/24/2017 9:20:17AM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	32.05	5.77E+01	55.94	9.11E-03	1.56E-03
	2	63.39	2.40E+02	118.83	2.16E-02	1.64E-03
	3	75.97	9.22E+02	146.99	2.32E-02	1.91E-03
	4	86.63	9.99E+01	87.02	2.37E-02	2.14E-03
	5	93.08	1.73E+02	107.14	2.37E-02	2.09E-03
	6	144.14	5.96E+01	70.51	2.03E-02	1.57E-03
	7	186.03	1.07E+02	73.47	1.69E-02	1.40E-03
	8	208.98	5.95E+01	65.87	1.53E-02	1.29E-03
	9	238.89	6.61E+02	97.78	1.36E-02	1.14E-03
M	10	295.37	1.33E+02	42.78	1.10E-02	9.13E-04
m	11	300.20	3.56E+01	37.82	1.08E-02	9.03E-04
	12	338.64	1.10E+02	63.85	9.59E-03	8.22E-04
	13	351.75	2.48E+02	61.94	9.22E-03	7.94E-04
	14	390.96	3.60E+01	41.88	8.27E-03	7.12E-04
	15	402.82	3.94E+01	45.41	8.02E-03	7.06E-04
	16	456.37	1.92E+01	24.66	7.05E-03	6.84E-04
	17	463.70	7.14E+01	39.62	6.93E-03	6.81E-04
	18	511.11	9.09E+01	47.98	6.28E-03	6.61E-04
	19	583.24	1.29E+02	40.95	5.50E-03	6.31E-04
M	20	609.41	1.80E+02	35.61	5.27E-03	6.20E-04
m	21	616.76	1.87E+01	23.45	5.21E-03	6.17E-04
	22	661.84	5.70E+01	34.76	4.87E-03	5.99E-04
	23	727.24	3.15E+01	22.92	4.45E-03	5.16E-04
	24	766.76	3.80E+01	22.09	4.24E-03	4.67E-04
	25	796.60	5.74E+01	37.79	4.09E-03	4.29E-04
	26	910.46	9.46E+01	34.81	3.62E-03	2.99E-04
	27	919.49	2.81E+01	24.66	3.59E-03	2.97E-04
	28	969.30	3.37E+01	26.48	3.42E-03	2.85E-04
	29	1086.20	1.20E+01	12.96	3.10E-03	2.58E-04
	30	1120.33	6.86E+01	25.30	3.01E-03	2.50E-04
	31	1158.71	3.23E+01	21.31	2.93E-03	2.41E-04
	32	1249.27	1.82E+01	20.98	2.74E-03	2.33E-04
	33	1299.76	2.19E+01	18.15	2.65E-03	2.29E-04
	34	1406.14	1.40E+01	16.22	2.47E-03	2.16E-04
	35	1460.71	3.45E+02	38.81	2.38E-03	2.08E-04
	36	1495.82	1.30E+01	7.21	2.33E-03	2.03E-04
	37	1646.26	7.06E+00	7.21	2.14E-03	1.80E-04
	38	1694.70	9.00E+00	6.00	2.08E-03	1.72E-04
	39	1764.17	1.56E+01	13.67	2.00E-03	1.62E-04
	40	2368.59	7.39E+00	6.95	1.45E-03	1.51E-04
	41	2614.08	4.50E+01	13.42	1.28E-03	1.51E-04

Analysis Report for 1707091-03

HTC-A08-BKGD01-0006-01

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 : 8/24/2017 9:20:17AM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000055576.CNF

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	1	32.05	5.77E+01	55.94			5.77E+01	5.59E+01
	2	63.39	2.40E+02	118.83	5.67E+01	8.57E+00	1.83E+02	1.19E+02
	3	75.97	9.22E+02	146.99	2.66E+01	8.34E+00	8.95E+02	1.47E+02
	4	86.63	9.99E+01	87.02			9.99E+01	8.70E+01
	5	93.08	1.73E+02	107.14	5.99E+01	8.61E+00	1.13E+02	1.07E+02
	6	144.14	5.96E+01	70.51			5.96E+01	7.05E+01
	7	186.03	1.07E+02	73.47	2.43E+01	7.50E+00	8.32E+01	7.39E+01
	8	208.98	5.95E+01	65.87			5.95E+01	6.59E+01
	9	238.89	6.61E+02	97.78	1.06E+01	6.01E+00	6.51E+02	9.80E+01
M	10	295.37	1.33E+02	42.78			1.33E+02	4.28E+01
m	11	300.20	3.56E+01	37.82			3.56E+01	3.78E+01
	12	338.64	1.10E+02	63.85			1.10E+02	6.38E+01
	13	351.75	2.48E+02	61.94			2.48E+02	6.19E+01
	14	390.96	3.60E+01	41.88			3.60E+01	4.19E+01
	15	402.82	3.94E+01	45.41			3.94E+01	4.54E+01
	16	456.37	1.92E+01	24.66			1.92E+01	2.47E+01
	17	463.70	7.14E+01	39.62			7.14E+01	3.96E+01
	18	511.11	9.09E+01	47.98	4.55E+01	4.99E+00	4.53E+01	4.82E+01
	19	583.24	1.29E+02	40.95			1.29E+02	4.10E+01
M	20	609.41	1.80E+02	35.61			1.80E+02	3.56E+01
m	21	616.76	1.87E+01	23.45			1.87E+01	2.35E+01
	22	661.84	5.70E+01	34.76			5.70E+01	3.48E+01
	23	727.24	3.15E+01	22.92			3.15E+01	2.29E+01
	24	766.76	3.80E+01	22.09			3.80E+01	2.21E+01
	25	796.60	5.74E+01	37.79			5.74E+01	3.78E+01
	26	910.46	9.46E+01	34.81			9.46E+01	3.48E+01
	27	919.49	2.81E+01	24.66			2.81E+01	2.47E+01
	28	969.30	3.37E+01	26.48			3.37E+01	2.65E+01
	29	1086.20	1.20E+01	12.96			1.20E+01	1.30E+01
	30	1120.33	6.86E+01	25.30			6.86E+01	2.53E+01
	31	1158.71	3.23E+01	21.31			3.23E+01	2.13E+01
	32	1249.27	1.82E+01	20.98			1.82E+01	2.10E+01
	33	1299.76	2.19E+01	18.15			2.19E+01	1.82E+01
	34	1406.14	1.40E+01	16.22			1.40E+01	1.62E+01
	35	1460.71	3.45E+02	38.81			3.45E+02	3.88E+01

Analysis Report for 1707091-03

HTC-A08-BKGD01-0006-01

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
36	1495.82	1.30E+01	7.21			1.30E+01	7.21E+00
37	1646.26	7.06E+00	7.21			7.06E+00	7.21E+00
38	1694.70	9.00E+00	6.00			9.00E+00	6.00E+00
39	1764.17	1.56E+01	13.67			1.56E+01	1.37E+01
40	2368.59	7.39E+00	6.95			7.39E+00	6.95E+00
41	2614.08	4.50E+01	13.42			4.50E+01	1.34E+01

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

AREA CORRECTION REPORT
REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 8/24/2017 9:20:17AM

Ref. Peak Energy : 0.00 Reference Date :
Peak Ratio : 0.00 Uncertainty : 0.00
Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000055576.CNF

Corrected Area is: Original * Peak Ratio - Background

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	1	32.05	5.77E+01	55.94			5.77E+01	5.59E+01
	2	63.39	2.40E+02	118.83	5.67E+01	8.57E+00	1.83E+02	1.19E+02
	3	75.97	9.22E+02	146.99	2.66E+01	8.34E+00	8.95E+02	1.47E+02
	4	86.63	9.99E+01	87.02			9.99E+01	8.70E+01
	5	93.08	1.73E+02	107.14	5.99E+01	8.61E+00	1.13E+02	1.07E+02
	6	144.14	5.96E+01	70.51			5.96E+01	7.05E+01
	7	186.03	1.07E+02	73.47	2.43E+01	7.50E+00	8.32E+01	7.39E+01
	8	208.98	5.95E+01	65.87			5.95E+01	6.59E+01
	9	238.89	6.61E+02	97.78	1.06E+01	6.01E+00	6.51E+02	9.80E+01
M	10	295.37	1.33E+02	42.78			1.33E+02	4.28E+01
m	11	300.20	3.56E+01	37.82			3.56E+01	3.78E+01
	12	338.64	1.10E+02	63.85			1.10E+02	6.38E+01
	13	351.75	2.48E+02	61.94			2.48E+02	6.19E+01
	14	390.96	3.60E+01	41.88			3.60E+01	4.19E+01
	15	402.82	3.94E+01	45.41			3.94E+01	4.54E+01
	16	456.37	1.92E+01	24.66			1.92E+01	2.47E+01
	17	463.70	7.14E+01	39.62			7.14E+01	3.96E+01
	18	511.11	9.09E+01	47.98	4.55E+01	4.99E+00	4.53E+01	4.82E+01
	19	583.24	1.29E+02	40.95			1.29E+02	4.10E+01
M	20	609.41	1.80E+02	35.61			1.80E+02	3.56E+01
m	21	616.76	1.87E+01	23.45			1.87E+01	2.35E+01
	22	661.84	5.70E+01	34.76			5.70E+01	3.48E+01

Analysis Report for 1707091-03

HTC-A08-BKGD01-0006-01

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
23	727.24	3.15E+01	22.92			3.15E+01	2.29E+01
24	766.76	3.80E+01	22.09			3.80E+01	2.21E+01
25	796.60	5.74E+01	37.79			5.74E+01	3.78E+01
26	910.46	9.46E+01	34.81			9.46E+01	3.48E+01
27	919.49	2.81E+01	24.66			2.81E+01	2.47E+01
28	969.30	3.37E+01	26.48			3.37E+01	2.65E+01
29	1086.20	1.20E+01	12.96			1.20E+01	1.30E+01
30	1120.33	6.86E+01	25.30			6.86E+01	2.53E+01
31	1158.71	3.23E+01	21.31			3.23E+01	2.13E+01
32	1249.27	1.82E+01	20.98			1.82E+01	2.10E+01
33	1299.76	2.19E+01	18.15			2.19E+01	1.82E+01
34	1406.14	1.40E+01	16.22			1.40E+01	1.62E+01
35	1460.71	3.45E+02	38.81			3.45E+02	3.88E+01
36	1495.82	1.30E+01	7.21			1.30E+01	7.21E+00
37	1646.26	7.06E+00	7.21			7.06E+00	7.21E+00
38	1694.70	9.00E+00	6.00			9.00E+00	6.00E+00
39	1764.17	1.56E+01	13.67			1.56E+01	1.37E+01
40	2368.59	7.39E+00	6.95			7.39E+00	6.95E+00
41	2614.08	4.50E+01	13.42			4.50E+01	1.34E+01

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

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	1.74E+01	2.50E+00
NB-95	0.826	765.79	*	99.81	8.47E-01	5.02E-01
SN-113	0.860	255.12		1.93		
		391.69	*	64.90	1.58E-01	1.85E-01
SN-126	0.868	87.57	*	37.00	1.47E-01	1.28E-01
CS-137	0.994	661.65	*	85.12	1.78E-01	1.11E-01
EU-155	0.360	86.50	*	30.90	1.82E-01	1.60E-01
		105.30		20.70		
TL-208	0.856	583.14	*	30.22	9.99E-01	3.36E-01
		860.37		4.48		
		2614.66	*	35.85	1.26E+00	4.04E-01
BI-212	0.775	727.17	*	11.80	7.69E-01	5.68E-01

Analysis Report for 1707091-03

HTC-A08-BKGD01-0006-01

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
BI-212	0.775	1620.62		2.75		
PB-212	0.990	238.63	*	44.60	1.38E+00	2.38E-01
		300.09	*	3.41	1.23E+00	1.32E+00
BI-214	0.934	609.31	*	46.30	9.49E-01	2.18E-01
		1120.29	*	15.10	1.94E+00	7.32E-01
		1764.49	*	15.80	6.33E-01	5.58E-01
		2204.22		4.98		
PB-214	0.995	295.21	*	19.19	8.05E-01	2.68E-01
		351.92	*	37.19	9.27E-01	2.45E-01
RA-226	0.995	186.21	*	3.28	1.92E+00	3.92E+00
AC-228	0.966	338.32	*	11.40	1.30E+00	7.58E-01
		911.07	*	27.70	1.21E+00	4.57E-01
		969.11	*	16.60	7.62E-01	6.01E-01
TH-234	0.998	63.29	*	3.80	2.88E+00	1.88E+00
NP-237	0.998	86.50	*	12.60	4.30E-01	3.77E-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 : 8/24/2017 9:20:17AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	32.05	1.60153E-02	48.51		
	3	75.97	2.48605E-01	8.23		
	5	93.08	3.13600E-02	47.60	Tol.	GA-67
	6	144.14	1.65659E-02	59.12	Tol.	U-235
	8	208.98	1.65278E-02	55.35	Tol.	GA-67
						CM-243
	15	402.82	1.09457E-02	57.62	Sum	
	16	456.37	5.33255E-03	64.22		
	17	463.70	1.98339E-02	27.74	Tol.	SB-125
	18	511.11	1.25926E-02	53.20		
m	21	616.76	5.18957E-03	62.76		
	25	796.60	1.59580E-02	32.89	Tol.	CS-134
	27	919.49	7.81145E-03	43.85		
	29	1086.20	3.33333E-03	54.01	Tol.	EU-152

Analysis Report for 1707091-03

HTC-A08-BKGD01-0006-01

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
31	1158.71	8.95964E-03	33.03	Sum	
32	1249.27	5.05556E-03	57.63	Sum	
33	1299.76	6.07733E-03	41.48		
34	1406.14	3.89385E-03	57.87		
36	1495.82	3.61111E-03	27.74		
37	1646.26	1.95988E-03	51.10	Sum	
38	1694.70	2.50000E-03	33.33		
40	2368.59	2.05247E-03	47.00		

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

NUCLIDE IDENTIFICATION REPORT

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

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.99	1460.81	*	10.67	1.74E+01	2.50E+00
NB-95	0.82	765.79	*	99.81	8.47E-01	5.02E-01
SN-113	0.86	255.12		1.93		
		391.69	*	64.90	1.58E-01	1.85E-01
SN-126	0.86	87.57	*	37.00	1.47E-01	1.28E-01
CS-137	0.99	661.65	*	85.12	1.78E-01	1.11E-01
EU-155	0.36	86.50	*	30.90	1.82E-01	1.60E-01
		105.30		20.70		
TL-208	0.85	583.14	*	30.22	9.99E-01	3.36E-01
		860.37		4.48		
		2614.66	*	35.85	1.26E+00	4.04E-01
BI-212	0.77	727.17	*	11.80	7.69E-01	5.68E-01
		1620.62		2.75		
PB-212	0.99	238.63	*	44.60	1.38E+00	2.38E-01
		300.09	*	3.41	1.23E+00	1.32E+00
BI-214	0.93	609.31	*	46.30	9.49E-01	2.18E-01
		1120.29	*	15.10	1.94E+00	7.32E-01
		1764.49	*	15.80	6.33E-01	5.58E-01
		2204.22		4.98		
PB-214	0.99	295.21	*	19.19	8.05E-01	2.68E-01

Analysis Report for 1707091-03

HTC-A08-BKGD01-0006-01

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
PB-214	0.99	351.92	*	37.19	9.27E-01	2.45E-01
RA-226	0.99	186.21	*	3.28	1.92E+00	3.92E+00
AC-228	0.96	338.32	*	11.40	1.30E+00	7.58E-01
		911.07	*	27.70	1.21E+00	4.57E-01
		969.11	*	16.60	7.62E-01	6.01E-01
TH-234	0.99	63.29	*	3.80	2.88E+00	1.88E+00
NP-237	0.99	86.50	*	12.60	4.30E-01	3.77E-01

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

INTERFERENCE CORRECTED REPORT

	Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
	K-40	0.999	1.74E+01	2.50E+00	
	NB-95	0.826	8.47E-01	5.02E-01	
	SN-113	0.860	1.58E-01	1.85E-01	
?	SN-126	0.868	1.47E-01	1.28E-01	
	CS-137	0.994	1.78E-01	1.11E-01	
?	EU-155	0.360	1.82E-01	1.60E-01	
	TL-208	0.856	1.11E+00	2.58E-01	
	BI-212	0.775	7.69E-01	5.68E-01	
	PB-212	0.990	1.38E+00	2.34E-01	
	BI-214	0.934	9.80E-01	1.96E-01	
	PB-214	0.995	8.72E-01	1.81E-01	
	RA-226	0.995	1.92E+00	3.92E+00	
	AC-228	0.966	1.09E+00	3.28E-01	
	TH-234	0.998	2.88E+00	1.88E+00	
?	NP-237	0.998	4.30E-01	3.77E-01	

Analysis Report for 1707091-03

HTC-A08-BKGD01-0006-01

? = 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 1707091-03

HTC-A08-BKGD01-0006-01

UNIDENTIFIED PEAKS

Peak Locate Performed on : 8/24/2017 9:20:17AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	32.05	1.60153E-02	48.51		
	3	75.97	2.48605E-01	8.23		
	5	93.08	3.13600E-02	47.60	Tol.	GA-67
	6	144.14	1.65659E-02	59.12	Tol.	U-235
	8	208.98	1.65278E-02	55.35	Tol.	GA-67
						CM-243
	15	402.82	1.09457E-02	57.62	Sum	
	16	456.37	5.33255E-03	64.22		
	17	463.70	1.98339E-02	27.74	Tol.	SB-125
	18	511.11	1.25926E-02	53.20		
m	21	616.76	5.18957E-03	62.76		
	25	796.60	1.59580E-02	32.89	Tol.	CS-134
	27	919.49	7.81145E-03	43.85		
	29	1086.20	3.33333E-03	54.01	Tol.	EU-152
	31	1158.71	8.95964E-03	33.03	Sum	
	32	1249.27	5.05556E-03	57.63	Sum	
	33	1299.76	6.07733E-03	41.48		
	34	1406.14	3.89385E-03	57.87		
	36	1495.82	3.61111E-03	27.74		
	37	1646.26	1.95988E-03	51.10	Sum	
	38	1694.70	2.50000E-03	33.33		
	40	2368.59	2.05247E-03	47.00		

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

NUCLIDE MDA REPORT

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

Analysis Report for 1707091-03

HTC-A08-BKGD01-0006-01

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	BE-7	477.59		10.42	3.83E-01	3.04E+00	3.04E+00
+	NA-22	1274.54		99.94	-2.02E-02	1.53E-01	1.53E-01
+	@ NA-24	1368.53		99.99	1.00E+26	1.00E+26	1.00E+26
	@	2754.09		99.86	0.00E+00		1.00E+26
+	AL-26	1808.65		99.76	1.10E-02	1.05E-01	1.05E-01
+	K-40	1460.81	*	10.67	1.74E+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	-1.00E-01	7.59E-02	7.59E-02
		78.34		96.00	3.35E-01		9.70E-02
+	SC-46	889.25		99.98	-8.09E-02	2.45E-01	2.45E-01
		1120.51		99.99	5.85E-01		4.55E-01
+	V-48	983.52		99.98	2.44E+00	9.37E+00	9.37E+00
		1312.10		97.50	6.13E+00		1.22E+01
+	CR-51	320.08		9.83	-1.04E+00	9.47E+00	9.47E+00
+	MN-54	834.83		99.97	-6.36E-02	1.49E-01	1.49E-01
+	CO-56	846.75		99.96	-2.75E-02	2.65E-01	2.65E-01
		1037.75		14.03	4.99E-01		2.52E+00
		1238.25		67.00	1.91E-01		6.68E-01
		1771.40		15.51	5.60E-01		2.09E+00
		2598.48		16.90	2.86E-01		1.33E+00
+	CO-57	122.06		85.51	-2.93E-02	8.27E-02	8.27E-02
		136.48		10.60	-9.59E-02		6.81E-01
+	CO-58	810.76		99.40	1.63E-01	3.29E-01	3.29E-01
+	FE-59	1099.22		56.50	-2.43E-01	1.15E+00	1.15E+00
		1291.56		43.20	3.95E-01		1.53E+00
+	CO-60	1173.22		100.00	-9.60E-02	1.13E-01	1.54E-01
		1332.49		100.00	-8.32E-02		1.13E-01
+	ZN-65	1115.52		50.75	1.17E-02	4.48E-01	4.48E-01
+	GA-67	93.31		35.70	5.98E+08	4.16E+08	4.16E+08
		208.95		2.24	4.79E+09		6.43E+09
		300.22		16.00	-1.85E+09		9.98E+08
+	SE-75	121.11		16.70	-2.51E-01	1.74E-01	5.86E-01
		136.00		59.20	5.50E-02		1.74E-01
		264.65		59.80	-1.01E-01		2.06E-01
		279.53		25.20	6.96E-02		5.00E-01
		400.65		11.40	2.09E-02		1.33E+00
+	RB-82	776.52		13.00	5.39E-01	1.34E+01	1.34E+01
+	RB-83	520.41		46.00	-2.29E-01	3.88E-01	3.88E-01
		529.64		30.30	-1.56E-01		6.98E-01
		552.65		16.40	2.90E-01		1.30E+00
+	KR-85	513.99		0.43	2.16E+01	2.92E+01	2.92E+01
+	SR-85	513.99		99.27	2.73E-01	3.68E-01	3.68E-01
+	Y-88	898.02		93.40	1.28E-02	1.70E-01	2.32E-01
		1836.01		99.38	3.71E-02		1.70E-01
+	MO-93	263.06		56.72	-7.46E-02	8.86E-02	1.19E-01
		684.67		99.68	-5.85E-02		1.11E-01
		1477.11		99.08	-2.14E-02		8.86E-02

Analysis Report for 1707091-03

HTC-A08-BKGD01-0006-01

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	NB-93M	16.57		9.43	1.44E+01	8.16E+00	8.16E+00
+	NB-94	702.63		100.00	6.56E-02	1.04E-01	1.19E-01
		871.10		100.00	1.85E-02		1.04E-01
+	NB-95	765.79	*	99.81	8.47E-01	7.33E-01	7.33E-01
+	NB-95M	235.69		25.00	2.58E+08	1.18E+08	1.18E+08
+	ZR-95	724.18		43.70	9.55E-02	5.47E-01	8.89E-01
		756.72		55.30	3.10E-01		5.47E-01
+	MO-99	181.06		6.20	8.15E+09	9.07E+10	1.08E+11
		739.58		12.80	-3.60E+10		9.07E+10
		778.00		4.50	-5.71E+10		2.66E+11
+	RU-103	497.08		89.00	-3.37E-01	5.42E-01	5.42E-01
+	RU-106	621.84		9.80	2.70E-01	1.18E+00	1.18E+00
+	AG-108M	433.93		89.90	-2.90E-02	8.89E-02	8.89E-02
		614.37		90.40	-3.10E-01		1.11E-01
		722.95		90.50	1.33E-02		1.39E-01
+	CD-109	88.03		3.72	-2.99E-01	2.30E+00	2.30E+00
+	AG-110M	657.75		93.14	7.45E-03	1.84E-01	1.84E-01
		677.61		10.53	1.12E+00		1.53E+00
		706.67		16.46	-2.20E-01		9.01E-01
		763.93		21.98	4.13E-02		7.26E-01
		884.67		71.63	4.15E-02		2.23E-01
		1384.27		23.94	-8.68E-02		6.04E-01
+	CD-113M	263.70		0.02	-2.75E+01	2.98E+02	2.98E+02
+	SN-113	255.12		1.93	1.34E+00	3.02E-01	6.69E+00
		391.69	*	64.90	1.58E-01		3.02E-01
+	TE123M	159.00		84.10	-1.55E-01	1.21E-01	1.21E-01
+	SB-124	602.71		97.87	1.07E-01	3.09E-01	3.09E-01
		645.85		7.26	-1.64E+00		4.69E+00
		722.78		11.10	3.46E-01		3.61E+00
		1691.02		49.00	0.00E+00		6.03E-01
+	I-125	35.49		6.49	-2.43E+00	5.30E+00	5.30E+00
+	SB-125	176.33		6.89	1.82E-01	3.15E-01	9.66E-01
		427.89		29.33	1.26E-01		3.15E-01
		463.38		10.35	1.01E+00		1.02E+00
		600.56		17.80	-2.64E-02		5.81E-01
		635.90		11.32	-1.52E-02		9.09E-01
+	SB-126	414.70		83.30	-3.60E+00	2.63E+01	2.63E+01
		666.33		99.60	5.37E+00		3.54E+01
		695.00		99.60	-1.56E+00		3.24E+01
		720.50		53.80	1.70E+00		6.13E+01
+	SN-126	87.57	*	37.00	1.47E-01	2.08E-01	2.08E-01
+	SB-127	473.00		25.00	-5.00E+06	2.34E+07	2.54E+07
		685.20		35.70	-1.23E+07		2.34E+07
		783.80		14.70	3.22E+07		6.05E+07
+	I-129	29.78		57.00	-2.27E-02	2.79E-01	2.79E-01
		33.60		13.20	-2.17E-02		9.32E-01
		39.58		7.52	3.35E-01		1.27E+00
+	I-131	284.30		6.05	-2.09E+03	5.30E+02	6.53E+03

Analysis Report for 1707091-03

HTC-A08-BKGD01-0006-01

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	I-131	364.48		81.20	-1.33E+02	5.30E+02	5.30E+02
		636.97		7.26	-4.01E+03		7.64E+03
		722.89		1.80	3.98E+03		4.16E+04
+	TE-132	49.72		13.10	-7.57E+08	1.59E+08	1.23E+09
		228.16		88.00	3.28E+07		1.59E+08
+	BA-133	81.00		33.00	-5.67E-01	1.62E-01	2.20E-01
		302.84		17.80	8.46E-02		4.37E-01
		356.01		60.00	-1.63E-01		1.62E-01
+	@ I-133	529.87		86.30	1.00E+26	1.00E+26	1.00E+26
+	XE-133	81.00		38.00	-2.98E+05	1.16E+05	1.16E+05
+	CS-134	563.23		8.38	1.20E+00	1.18E-01	1.35E+00
		569.32		15.43	-2.15E-01		6.32E-01
		604.70		97.60	1.66E-02		1.18E-01
		795.84		85.40	1.21E-01		1.79E-01
		801.93		8.73	-1.41E+00		1.43E+00
+	CS-135	268.24		16.00	2.58E-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	2.37E+01	2.08E+01	1.59E+02
		163.89		4.61	1.73E+02		2.70E+02
		176.55		13.56	7.65E+00		9.25E+01
		273.65		12.66	2.05E+01		1.21E+02
		340.57		48.50	3.86E+01		3.84E+01
		818.50		99.70	-1.70E+00		2.08E+01
		1048.07		79.60	1.20E+01		3.64E+01
		1235.34		19.70	8.86E+01		2.00E+02
+	CS-137	661.65	*	85.12	1.78E-01	1.69E-01	1.69E-01
+	LA-138	788.74		34.00	8.30E-02	1.46E-01	3.52E-01
		1435.80		66.00	-5.09E-02		1.46E-01
+	CE-139	165.85		80.35	7.15E-02	1.27E-01	1.27E-01
+	BA-140	162.64		6.70	1.28E+02	8.46E+01	2.16E+02
		304.84		4.50	1.74E+02		3.73E+02
		423.70		3.20	-1.26E+02		5.75E+02
		437.55		2.00	2.68E+02		9.45E+02
		537.32		25.00	5.12E+00		8.46E+01
+	LA-140	328.77		20.50	5.86E+01	3.32E+01	9.67E+01
		487.03		45.50	2.79E+01		4.51E+01
		815.85		23.50	-4.16E+01		1.11E+02
		1596.49		95.49	4.59E+00		3.32E+01
+	CE-141	145.44		48.40	7.75E-01	1.10E+00	1.10E+00
+	@ 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	-3.07E-01	6.72E-01	6.72E-01
+	PM-144	476.78		42.00	1.21E-01	1.20E-01	2.59E-01
		618.01		98.60	1.08E-03		1.20E-01
		696.49		99.49	4.95E-02		1.44E-01
+	PM-145	36.85		21.70	-1.52E-01	2.51E-01	4.71E-01

Analysis Report for 1707091-03

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	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	PM-145	37.36		39.70	-8.11E-02	2.51E-01	2.51E-01
		42.30		15.10	-5.27E-01		5.99E-01
		72.40		2.31	-6.06E+00		3.56E+00
+	PM-146	453.90		39.94	3.14E-02	2.14E-01	2.14E-01
		735.90		14.01	-6.72E-02		7.75E-01
		747.13		13.10	4.44E-01		9.34E-01
+	ND-147	91.11		28.90	2.59E+02	1.55E+02	1.55E+02
		531.02		13.10	-1.27E+02		4.25E+02
+	PM-149	285.90		3.10	1.48E+13	1.17E+14	1.17E+14
+	EU-152	121.78		20.50	-9.56E-02	2.70E-01	2.70E-01
		244.69		5.40	-1.26E-02		1.46E+00
		344.27		19.13	-4.88E-01		3.67E-01
		778.89		9.20	-1.65E-01		1.22E+00
		964.01		10.40	1.90E-01		1.39E+00
		1085.78		7.22	-7.43E-01		1.64E+00
		1112.02		9.60	3.88E-01		1.61E+00
		1407.95		14.94	5.53E-01		9.18E-01
+	GD-153	97.43		31.30	7.21E-03	2.53E-01	2.53E-01
		103.18		22.20	-1.02E-01		3.29E-01
+	EU-154	123.07		40.50	-2.34E-02	1.41E-01	1.41E-01
		723.30		19.70	7.25E-02		6.75E-01
		873.19		11.50	-6.27E-01		8.43E-01
		996.32		10.30	-7.68E-01		1.17E+00
		1004.76		17.90	3.36E-03		7.57E-01
		1274.45		35.50	-5.41E-02		4.10E-01
+	EU-155	86.50	*	30.90	1.82E-01	2.59E-01	2.59E-01
		105.30		20.70	8.21E-02		2.80E-01
+	EU-156	811.77		10.40	2.19E+01	1.15E+02	1.15E+02
		1153.47		7.20	-1.91E+01		2.09E+02
		1230.71		8.90	9.00E+01		2.05E+02
+	HO-166M	184.41		72.60	1.04E-01	9.99E-02	9.99E-02
		280.45		29.60	3.74E-03		2.34E-01
		410.94		11.10	4.30E-02		7.49E-01
		711.69		54.10	-4.31E-02		2.12E-01
+	TM-171	66.72		0.14	-4.01E+01	5.77E+01	5.77E+01
+	HF-172	67.35		5.31	-1.06E+00	5.75E-01	1.52E+00
		125.81		11.30	8.43E-02		5.75E-01
+	LU-172	181.53		20.60	1.43E+02	7.44E+03	1.05E+04
		900.72		29.81	-1.47E+03		1.37E+04
		1093.66		62.50	6.23E+02		7.44E+03
+	LU-173	100.72		5.24	-4.35E-01	4.15E-01	1.18E+00
		272.11		21.20	0.00E+00		4.15E-01
+	HF-175	343.40		84.00	-2.96E-01	2.23E-01	2.23E-01
+	LU-176	88.34		13.30	-7.19E-02	7.56E-02	5.54E-01
		201.83		86.00	2.34E-02		7.60E-02
		306.78		94.00	1.25E-02		7.56E-02
+	HF-181	133.02		41.70	-1.46E-01	5.07E-01	7.18E-01
		345.85		17.20	-5.59E+00		2.12E+00
		482.03		82.80	-3.27E-01		5.07E-01

Analysis Report for 1707091-03

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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	-4.22E-01	3.20E-01	3.20E-01
		1121.30		34.90	1.01E+00		1.01E+00
		1189.05		16.23	-4.05E-01		1.76E+00
		1221.41		26.98	-1.79E-01		1.12E+00
		1231.02		11.44	-9.11E-01		2.84E+00
+	IR-192	308.46		29.68	-5.12E-01	4.30E-01	6.03E-01
		468.07		48.10	-4.94E-01		4.30E-01
+	HG-203	279.19		77.30	-1.07E-01	4.11E-01	4.11E-01
+	TL-204	374.74		94.11	-4.09E-03	8.85E-02	8.85E-02
		899.15		99.16	1.06E-02		1.24E-01
		911.74		91.10	3.52E-01		2.34E-01
+	BI-207	569.67		97.72	-3.11E-02	9.16E-02	9.16E-02
		1063.62		74.90	6.03E-02		1.85E-01
+	TL-208	583.14	*	30.22	9.99E-01	7.57E-02	4.53E-01
		860.37		4.48	1.86E-01		2.78E+00
		2614.66	*	35.85	1.26E+00		7.57E-02
+	BI-210M	262.00		45.00	-1.23E-01	1.46E-01	1.46E-01
		300.00		23.00	-6.33E-01		3.41E-01
+	PB-210	46.50		4.25	1.49E+00	2.02E+00	2.02E+00
+	PB-211	404.84		2.90	1.63E+00	3.17E+00	3.17E+00
		831.96		2.90	1.25E+00		4.16E+00
+	BI-212	727.17	*	11.80	7.69E-01	8.70E-01	8.70E-01
		1620.62		2.75	4.79E-02		4.05E+00
+	PB-212	238.63	*	44.60	1.38E+00	2.98E-01	2.98E-01
		300.09	*	3.41	1.23E+00		4.36E+00
+	BI-214	609.31	*	46.30	9.49E-01	4.97E-01	4.97E-01
		1120.29	*	15.10	1.94E+00		9.64E-01
		1764.49	*	15.80	6.33E-01		8.56E-01
		2204.22		4.98	6.52E-01		2.72E+00
+	PB-214	295.21	*	19.19	8.05E-01	3.39E-01	7.64E-01
		351.92	*	37.19	9.27E-01		3.39E-01
+	RN-219	401.80		6.50	3.82E-01	1.31E+00	1.31E+00
+	RA-223	323.87		3.88	-4.31E-01	2.05E+00	2.05E+00
+	RA-224	240.98		3.95	1.26E+01	3.25E+00	3.25E+00
+	RA-225	40.00		31.00	8.99E+00	3.42E+01	3.42E+01
+	RA-226	186.21	*	3.28	1.92E+00	2.79E+00	2.79E+00
+	TH-227	50.10		8.40	-5.66E-01	9.22E-01	9.22E-01
		236.00		11.50	2.19E+00		1.00E+00
		256.20		6.30	7.67E-02		1.11E+00
+	AC-228	338.32	*	11.40	1.30E+00	9.45E-01	1.20E+00
		911.07	*	27.70	1.21E+00		1.09E+00
		969.11	*	16.60	7.62E-01		9.45E-01
+	TH-230	48.44		16.90	2.25E-01	4.86E-01	4.86E-01
		62.85		4.60	2.72E+00		1.74E+00
		67.67		0.37	-2.56E+01		1.93E+01
+	PA-231	283.67		1.60	-1.32E+00	3.32E+00	4.13E+00
		302.67		2.30	6.42E-01		3.32E+00
+	TH-231	25.64		14.70	4.58E-02	1.04E+00	1.55E+00

Analysis Report for 1707091-03

HTC-A08-BKGD01-0006-01

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	TH-231	84.21		6.40	-1.24E+00	1.04E+00	1.04E+00
+	PA-233	311.98		38.60	1.25E-01	2.55E+00	2.55E+00
+	PA-234	131.20		20.40	1.41E-01	2.95E-01	2.95E-01
		733.99		8.80	-9.89E-02		1.16E+00
		946.00		12.00	-1.89E-01		1.06E+00
+	PA-234M	1001.03		0.92	5.00E+00	1.39E+01	1.39E+01
+	TH-234	63.29	*	3.80	2.88E+00	3.03E+00	3.03E+00
+	U-235	143.76		10.50	2.80E-01	5.81E-01	5.81E-01
		163.35		4.70	7.75E-01		1.31E+00
		205.31		4.70	-3.17E-02		1.38E+00
+	NP-237	86.50	*	12.60	4.30E-01	6.12E-01	6.12E-01
+	NP-239	106.10		22.70	1.10E+12	1.93E+12	1.93E+12
		228.18		10.70	1.01E+12		4.91E+12
		277.60		14.10	9.79E+11		3.97E+12
+	AM-241	59.54		35.90	-1.24E-02	2.14E-01	2.14E-01
+	AM-243	74.67		66.00	5.56E-01	1.48E-01	1.48E-01
+	CM-243	209.75		3.29	1.64E+00	5.19E-01	2.15E+00
		228.14		10.60	1.33E-01		6.44E-01
		277.60		14.00	1.28E-01		5.19E-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	3.04E+00	3.04E+00	3.83E-01	1.43E+00
	NA-22	1274.54	99.94	1.53E-01	1.53E-01	-2.02E-02	6.97E-02
@	NA-24	1368.53	99.99	1.00E+26	1.00E+26	1.00E+26	1.00E+20

Analysis Report for 1707091-03

HTC-A08-BKGD01-0006-01

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
@	NA-24	2754.09		99.86	1.00E+26	1.00E+26	0.00E+00	1.00E+20
	AL-26	1808.65		99.76	1.05E-01	1.05E-01	1.10E-02	4.34E-02
+	K-40	1460.81	*	10.67	1.07E+00	1.07E+00	1.74E+01	4.66E-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	7.59E-02	7.59E-02	-1.00E-01	3.71E-02
		78.34		96.00	9.70E-02		3.35E-01	4.77E-02
	SC-46	889.25		99.98	2.45E-01	2.45E-01	-8.09E-02	1.12E-01
		1120.51		99.99	4.55E-01		5.85E-01	2.14E-01
	V-48	983.52		99.98	9.37E+00	9.37E+00	2.44E+00	4.28E+00
		1312.10		97.50	1.22E+01		6.13E+00	5.57E+00
	CR-51	320.08		9.83	9.47E+00	9.47E+00	-1.04E+00	4.52E+00
	MN-54	834.83		99.97	1.49E-01	1.49E-01	-6.36E-02	6.88E-02
	CO-56	846.75		99.96	2.65E-01	2.65E-01	-2.75E-02	1.22E-01
		1037.75		14.03	2.52E+00		4.99E-01	1.17E+00
		1238.25		67.00	6.68E-01		1.91E-01	3.11E-01
		1771.40		15.51	2.09E+00		5.60E-01	9.10E-01
		2598.48		16.90	1.33E+00		2.86E-01	4.71E-01
	CO-57	122.06		85.51	8.27E-02	8.27E-02	-2.93E-02	4.02E-02
		136.48		10.60	6.81E-01		-9.59E-02	3.30E-01
	CO-58	810.76		99.40	3.29E-01	3.29E-01	1.63E-01	1.53E-01
	FE-59	1099.22		56.50	1.15E+00	1.15E+00	-2.43E-01	5.29E-01
		1291.56		43.20	1.53E+00		3.95E-01	6.93E-01
	CO-60	1173.22		100.00	1.54E-01	1.13E-01	-9.60E-02	7.10E-02
		1332.49		100.00	1.13E-01		-8.32E-02	4.93E-02
	ZN-65	1115.52		50.75	4.48E-01	4.48E-01	1.17E-02	2.09E-01
	GA-67	93.31		35.70	4.16E+08	4.16E+08	5.98E+08	2.04E+08
		208.95		2.24	6.43E+09		4.79E+09	3.11E+09
		300.22		16.00	9.98E+08		-1.85E+09	4.79E+08
	SE-75	121.11		16.70	5.86E-01	1.74E-01	-2.51E-01	2.85E-01
		136.00		59.20	1.74E-01		5.50E-02	8.44E-02
		264.65		59.80	2.06E-01		-1.01E-01	9.88E-02
		279.53		25.20	5.00E-01		6.96E-02	2.39E-01
		400.65		11.40	1.33E+00		2.09E-02	6.33E-01
	RB-82	776.52		13.00	1.34E+01	1.34E+01	5.39E-01	6.22E+00
	RB-83	520.41		46.00	3.88E-01	3.88E-01	-2.29E-01	1.80E-01
		529.64		30.30	6.98E-01		-1.56E-01	3.27E-01
		552.65		16.40	1.30E+00		2.90E-01	6.07E-01
	KR-85	513.99		0.43	2.92E+01	2.92E+01	2.16E+01	1.39E+01
	SR-85	513.99		99.27	3.68E-01	3.68E-01	2.73E-01	1.76E-01
	Y-88	898.02		93.40	2.32E-01	1.70E-01	1.28E-02	1.06E-01
		1836.01		99.38	1.70E-01		3.71E-02	6.74E-02
	MO-93	263.06		56.72	1.19E-01	8.86E-02	-7.46E-02	5.71E-02
		684.67		99.68	1.11E-01		-5.85E-02	5.18E-02
		1477.11		99.08	8.86E-02		-2.14E-02	3.68E-02
	NB-93M	16.57		9.43	8.16E+00	8.16E+00	1.44E+01	3.96E+00
	NB-94	702.63		100.00	1.19E-01	1.04E-01	6.56E-02	5.55E-02
		871.10		100.00	1.04E-01		1.85E-02	4.76E-02
+	NB-95	765.79	*	99.81	7.33E-01	7.33E-01	8.47E-01	3.36E-01
	NB-95M	235.69		25.00	1.18E+08	1.18E+08	2.58E+08	5.76E+07
	ZR-95	724.18		43.70	8.89E-01	5.47E-01	9.55E-02	4.18E-01
		756.72		55.30	5.47E-01		3.10E-01	2.52E-01
	MO-99	181.06		6.20	1.08E+11	9.07E+10	8.15E+09	5.23E+10
		739.58		12.80	9.07E+10		-3.60E+10	4.20E+10

Analysis Report for 1707091-03

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	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	MO-99	778.00		4.50	2.66E+11	9.07E+10	-5.71E+10	1.23E+11
	RU-103	497.08		89.00	5.42E-01	5.42E-01	-3.37E-01	2.53E-01
	RU-106	621.84		9.80	1.18E+00	1.18E+00	2.70E-01	5.48E-01
	AG-108M	433.93		89.90	8.89E-02	8.89E-02	-2.90E-02	4.18E-02
		614.37		90.40	1.11E-01		-3.10E-01	5.18E-02
		722.95		90.50	1.39E-01		1.33E-02	6.52E-02
	CD-109	88.03		3.72	2.30E+00	2.30E+00	-2.99E-01	1.13E+00
	AG-110M	657.75		93.14	1.84E-01	1.84E-01	7.45E-03	8.71E-02
		677.61		10.53	1.53E+00		1.12E+00	7.19E-01
		706.67		16.46	9.01E-01		-2.20E-01	4.20E-01
		763.93		21.98	7.26E-01		4.13E-02	3.38E-01
		884.67		71.63	2.23E-01		4.15E-02	1.03E-01
		1384.27		23.94	6.04E-01		-8.68E-02	2.64E-01
	CD-113M	263.70		0.02	2.98E+02	2.98E+02	-2.75E+01	1.43E+02
+	SN-113	255.12		1.93	6.69E+00	3.02E-01	1.34E+00	3.21E+00
		391.69	*	64.90	3.02E-01		1.58E-01	1.45E-01
	TE123M	159.00		84.10	1.21E-01	1.21E-01	-1.55E-01	5.87E-02
	SB-124	602.71		97.87	3.09E-01	3.09E-01	1.07E-01	1.44E-01
		645.85		7.26	4.69E+00		-1.64E+00	2.19E+00
		722.78		11.10	3.61E+00		3.46E-01	1.70E+00
		1691.02		49.00	6.03E-01		0.00E+00	2.47E-01
	I-125	35.49		6.49	5.30E+00	5.30E+00	-2.43E+00	2.57E+00
	SB-125	176.33		6.89	9.66E-01	3.15E-01	1.82E-01	4.68E-01
		427.89		29.33	3.15E-01		1.26E-01	1.49E-01
		463.38		10.35	1.02E+00		1.01E+00	4.86E-01
		600.56		17.80	5.81E-01		-2.64E-02	2.71E-01
		635.90		11.32	9.09E-01		-1.52E-02	4.22E-01
	SB-126	414.70		83.30	2.63E+01	2.63E+01	-3.60E+00	1.24E+01
		666.33		99.60	3.54E+01		5.37E+00	1.67E+01
		695.00		99.60	3.24E+01		-1.56E+00	1.52E+01
		720.50		53.80	6.13E+01		1.70E+00	2.86E+01
+	SN-126	87.57	*	37.00	2.08E-01	2.08E-01	1.47E-01	1.02E-01
	SB-127	473.00		25.00	2.54E+07	2.34E+07	-5.00E+06	1.19E+07
		685.20		35.70	2.34E+07		-1.23E+07	1.09E+07
		783.80		14.70	6.05E+07		3.22E+07	2.81E+07
	I-129	29.78		57.00	2.79E-01	2.79E-01	-2.27E-02	1.36E-01
		33.60		13.20	9.32E-01		-2.17E-02	4.53E-01
		39.58		7.52	1.27E+00		3.35E-01	6.19E-01
	I-131	284.30		6.05	6.53E+03	5.30E+02	-2.09E+03	3.12E+03
		364.48		81.20	5.30E+02		-1.33E+02	2.50E+02
		636.97		7.26	7.64E+03		-4.01E+03	3.54E+03
		722.89		1.80	4.16E+04		3.98E+03	1.95E+04
	TE-132	49.72		13.10	1.23E+09	1.59E+08	-7.57E+08	6.01E+08
		228.16		88.00	1.59E+08		3.28E+07	7.68E+07
	BA-133	81.00		33.00	2.20E-01	1.62E-01	-5.67E-01	1.08E-01
		302.84		17.80	4.37E-01		8.46E-02	2.09E-01
		356.01		60.00	1.62E-01		-1.63E-01	7.76E-02
	@ I-133	529.87		86.30	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	XE-133	81.00		38.00	1.16E+05	1.16E+05	-2.98E+05	5.67E+04
	CS-134	563.23		8.38	1.35E+00	1.18E-01	1.20E+00	6.37E-01
		569.32		15.43	6.32E-01		-2.15E-01	2.94E-01
		604.70		97.60	1.18E-01		1.66E-02	5.51E-02
		795.84		85.40	1.79E-01		1.21E-01	8.39E-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)
	CS-134	801.93		8.73	1.43E+00	1.18E-01	-1.41E+00	6.60E-01
	CS-135	268.24		16.00	4.69E-01	4.69E-01	2.58E-01	2.26E-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	1.59E+02	2.08E+01	2.37E+01	7.72E+01
		163.89		4.61	2.70E+02		1.73E+02	1.31E+02
		176.55		13.56	9.25E+01		7.65E+00	4.48E+01
		273.65		12.66	1.21E+02		2.05E+01	5.81E+01
		340.57		48.50	3.84E+01		3.86E+01	1.85E+01
		818.50		99.70	2.08E+01		-1.70E+00	9.50E+00
		1048.07		79.60	3.64E+01		1.20E+01	1.68E+01
		1235.34		19.70	2.00E+02		8.86E+01	9.35E+01
+	CS-137	661.65	*	85.12	1.69E-01	1.69E-01	1.78E-01	8.03E-02
	LA-138	788.74		34.00	3.52E-01	1.46E-01	8.30E-02	1.64E-01
		1435.80		66.00	1.46E-01		-5.09E-02	6.20E-02
	CE-139	165.85		80.35	1.27E-01	1.27E-01	7.15E-02	6.15E-02
	BA-140	162.64		6.70	2.16E+02	8.46E+01	1.28E+02	1.05E+02
		304.84		4.50	3.73E+02		1.74E+02	1.78E+02
		423.70		3.20	5.75E+02		-1.26E+02	2.70E+02
		437.55		2.00	9.45E+02		2.68E+02	4.45E+02
		537.32		25.00	8.46E+01		5.12E+00	3.96E+01
	LA-140	328.77		20.50	9.67E+01	3.32E+01	5.86E+01	4.63E+01
		487.03		45.50	4.51E+01		2.79E+01	2.12E+01
		815.85		23.50	1.11E+02		-4.16E+01	5.09E+01
		1596.49		95.49	3.32E+01		4.59E+00	1.47E+01
	CE-141	145.44		48.40	1.10E+00	1.10E+00	7.75E-01	5.33E-01
@	CE-143	57.36		11.80	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		293.26		42.00	1.00E+26		1.00E+26	1.00E+20
@		664.55		5.20	1.00E+26		1.00E+26	1.00E+20
	CE-144	133.54		10.80	6.72E-01	6.72E-01	-3.07E-01	3.26E-01
	PM-144	476.78		42.00	2.59E-01	1.20E-01	1.21E-01	1.22E-01
		618.01		98.60	1.20E-01		1.08E-03	5.61E-02
		696.49		99.49	1.44E-01		4.95E-02	6.76E-02
	PM-145	36.85		21.70	4.71E-01	2.51E-01	-1.52E-01	2.28E-01
		37.36		39.70	2.51E-01		-8.11E-02	1.22E-01
		42.30		15.10	5.99E-01		-5.27E-01	2.91E-01
		72.40		2.31	3.56E+00		-6.06E+00	1.75E+00
	PM-146	453.90		39.94	2.14E-01	2.14E-01	3.14E-02	1.01E-01
		735.90		14.01	7.75E-01		-6.72E-02	3.58E-01
		747.13		13.10	9.34E-01		4.44E-01	4.35E-01
	ND-147	91.11		28.90	1.55E+02	1.55E+02	2.59E+02	7.62E+01
		531.02		13.10	4.25E+02		-1.27E+02	2.00E+02
	PM-149	285.90		3.10	1.17E+14	1.17E+14	1.48E+13	5.57E+13
	EU-152	121.78		20.50	2.70E-01	2.70E-01	-9.56E-02	1.31E-01
		244.69		5.40	1.46E+00		-1.26E-02	7.04E-01
		344.27		19.13	3.67E-01		-4.88E-01	1.74E-01
		778.89		9.20	1.22E+00		-1.65E-01	5.64E-01
		964.01		10.40	1.39E+00		1.90E-01	6.45E-01
		1085.78		7.22	1.64E+00		-7.43E-01	7.42E-01
		1112.02		9.60	1.61E+00		3.88E-01	7.43E-01
		1407.95		14.94	9.18E-01		5.53E-01	4.11E-01
	GD-153	97.43		31.30	2.53E-01	2.53E-01	7.21E-03	1.24E-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)
	GD-153	103.18		22.20	3.29E-01	2.53E-01	-1.02E-01	1.60E-01
	EU-154	123.07		40.50	1.41E-01	1.41E-01	-2.34E-02	6.83E-02
		723.30		19.70	6.75E-01		7.25E-02	3.18E-01
		873.19		11.50	8.43E-01		-6.27E-01	3.80E-01
		996.32		10.30	1.17E+00		-7.68E-01	5.32E-01
		1004.76		17.90	7.57E-01		3.36E-03	3.49E-01
		1274.45		35.50	4.10E-01		-5.41E-02	1.86E-01
+	EU-155	86.50	*	30.90	2.59E-01	2.59E-01	1.82E-01	1.27E-01
		105.30		20.70	2.80E-01		8.21E-02	1.36E-01
	EU-156	811.77		10.40	1.15E+02	1.15E+02	2.19E+01	5.33E+01
		1153.47		7.20	2.09E+02		-1.91E+01	9.64E+01
		1230.71		8.90	2.05E+02		9.00E+01	9.56E+01
	HO-166M	184.41		72.60	9.99E-02	9.99E-02	1.04E-01	4.85E-02
		280.45		29.60	2.34E-01		3.74E-03	1.12E-01
		410.94		11.10	7.49E-01		4.30E-02	3.55E-01
		711.69		54.10	2.12E-01		-4.31E-02	9.88E-02
	TM-171	66.72		0.14	5.77E+01	5.77E+01	-4.01E+01	2.82E+01
	HF-172	67.35		5.31	1.52E+00	5.75E-01	-1.06E+00	7.43E-01
		125.81		11.30	5.75E-01		8.43E-02	2.80E-01
	LU-172	181.53		20.60	1.05E+04	7.44E+03	1.43E+02	5.10E+03
		900.72		29.81	1.37E+04		-1.47E+03	6.31E+03
		1093.66		62.50	7.44E+03		6.23E+02	3.41E+03
	LU-173	100.72		5.24	1.18E+00	4.15E-01	-4.35E-01	5.75E-01
		272.11		21.20	4.15E-01		0.00E+00	1.99E-01
	HF-175	343.40		84.00	2.23E-01	2.23E-01	-2.96E-01	1.06E-01
	LU-176	88.34		13.30	5.54E-01	7.56E-02	-7.19E-02	2.71E-01
		201.83		86.00	7.60E-02		2.34E-02	3.67E-02
		306.78		94.00	7.56E-02		1.25E-02	3.61E-02
	HF-181	133.02		41.70	7.18E-01	5.07E-01	-1.46E-01	3.49E-01
		345.85		17.20	2.12E+00		-5.59E+00	1.01E+00
		482.03		82.80	5.07E-01		-3.27E-01	2.37E-01
	TA-182	67.75		41.20	3.20E-01	3.20E-01	-4.22E-01	1.56E-01
		1121.30		34.90	1.01E+00		1.01E+00	4.74E-01
		1189.05		16.23	1.76E+00		-4.05E-01	8.12E-01
		1221.41		26.98	1.12E+00		-1.79E-01	5.16E-01
		1231.02		11.44	2.84E+00		-9.11E-01	1.32E+00
	IR-192	308.46		29.68	6.03E-01	4.30E-01	-5.12E-01	2.87E-01
		468.07		48.10	4.30E-01		-4.94E-01	2.01E-01
	HG-203	279.19		77.30	4.11E-01	4.11E-01	-1.07E-01	1.97E-01
	TL-204	374.74		94.11	8.85E-02	8.85E-02	-4.09E-03	4.20E-02
		899.15		99.16	1.24E-01		1.06E-02	5.67E-02
		911.74		91.10	2.34E-01		3.52E-01	1.12E-01
	BI-207	569.67		97.72	9.16E-02	9.16E-02	-3.11E-02	4.26E-02
		1063.62		74.90	1.85E-01		6.03E-02	8.53E-02
+	TL-208	583.14	*	30.22	4.53E-01	7.57E-02	9.99E-01	2.16E-01
		860.37		4.48	2.78E+00		1.86E-01	1.29E+00
		2614.66	*	35.85	7.57E-02		1.26E+00	0.00E+00
	BI-210M	262.00		45.00	1.46E-01	1.46E-01	-1.23E-01	7.01E-02
		300.00		23.00	3.41E-01		-6.33E-01	1.64E-01
	PB-210	46.50		4.25	2.02E+00	2.02E+00	1.49E+00	9.87E-01
	PB-211	404.84		2.90	3.17E+00	3.17E+00	1.63E+00	1.51E+00
		831.96		2.90	4.16E+00		1.25E+00	1.93E+00
+	BI-212	727.17	*	11.80	8.70E-01	8.70E-01	7.69E-01	4.02E-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)
	BI-212	1620.62		2.75	4.05E+00	8.70E-01	4.79E-02	1.74E+00
+	PB-212	238.63	*	44.60	2.98E-01	2.98E-01	1.38E+00	1.46E-01
		300.09	*	3.41	4.36E+00		1.23E+00	2.13E+00
+	BI-214	609.31	*	46.30	4.97E-01	4.97E-01	9.49E-01	2.41E-01
		1120.29	*	15.10	9.64E-01		1.94E+00	4.44E-01
		1764.49	*	15.80	8.56E-01		6.33E-01	3.73E-01
		2204.22		4.98	2.72E+00		6.52E-01	1.14E+00
+	PB-214	295.21	*	19.19	7.64E-01	3.39E-01	8.05E-01	3.74E-01
		351.92	*	37.19	3.39E-01		9.27E-01	1.64E-01
	RN-219	401.80		6.50	1.31E+00	1.31E+00	3.82E-01	6.21E-01
	RA-223	323.87		3.88	2.05E+00	2.05E+00	-4.31E-01	9.79E-01
	RA-224	240.98		3.95	3.25E+00	3.25E+00	1.26E+01	1.59E+00
	RA-225	40.00		31.00	3.42E+01	3.42E+01	8.99E+00	1.66E+01
+	RA-226	186.21	*	3.28	2.79E+00	2.79E+00	1.92E+00	1.36E+00
	TH-227	50.10		8.40	9.22E-01	9.22E-01	-5.66E-01	4.49E-01
		236.00		11.50	1.00E+00		2.19E+00	4.90E-01
		256.20		6.30	1.11E+00		7.67E-02	5.31E-01
+	AC-228	338.32	*	11.40	1.20E+00	9.45E-01	1.30E+00	5.83E-01
		911.07	*	27.70	1.09E+00		1.21E+00	5.30E-01
		969.11	*	16.60	9.45E-01		7.62E-01	4.42E-01
	TH-230	48.44		16.90	4.86E-01	4.86E-01	2.25E-01	2.37E-01
		62.85		4.60	1.74E+00		2.72E+00	8.50E-01
		67.67		0.37	1.93E+01		-2.56E+01	9.46E+00
	PA-231	283.67		1.60	4.13E+00	3.32E+00	-1.32E+00	1.97E+00
		302.67		2.30	3.32E+00		6.42E-01	1.59E+00
	TH-231	25.64		14.70	1.55E+00	1.04E+00	4.58E-02	7.55E-01
		84.21		6.40	1.04E+00		-1.24E+00	5.10E-01
	PA-233	311.98		38.60	2.55E+00	2.55E+00	1.25E-01	1.22E+00
	PA-234	131.20		20.40	2.95E-01	2.95E-01	1.41E-01	1.43E-01
		733.99		8.80	1.16E+00		-9.89E-02	5.33E-01
		946.00		12.00	1.06E+00		-1.89E-01	4.88E-01
	PA-234M	1001.03		0.92	1.39E+01	1.39E+01	5.00E+00	6.40E+00
+	TH-234	63.29	*	3.80	3.03E+00	3.03E+00	2.88E+00	1.50E+00
	U-235	143.76		10.50	5.81E-01	5.81E-01	2.80E-01	2.82E-01
		163.35		4.70	1.31E+00		7.75E-01	6.34E-01
		205.31		4.70	1.38E+00		-3.17E-02	6.67E-01
+	NP-237	86.50	*	12.60	6.12E-01	6.12E-01	4.30E-01	3.00E-01
	NP-239	106.10		22.70	1.93E+12	1.93E+12	1.10E+12	9.37E+11
		228.18		10.70	4.91E+12		1.01E+12	2.37E+12
		277.60		14.10	3.97E+12		9.79E+11	1.90E+12
	AM-241	59.54		35.90	2.14E-01	2.14E-01	-1.24E-02	1.04E-01
	AM-243	74.67		66.00	1.48E-01	1.48E-01	5.56E-01	7.30E-02
	CM-243	209.75		3.29	2.15E+00	5.19E-01	1.64E+00	1.04E+00
		228.14		10.60	6.44E-01		1.33E-01	3.10E-01
		277.60		14.00	5.19E-01		1.28E-01	2.49E-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 1707091-03

HTC-A08-BKGD01-0006-01

No Action Level results available for reporting purposes.

DATA REVIEW COMMENTS REPORT

Creation Date	Comment	User

No Data Review Comments Entered.

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

Sample Title: HTC-A08-BKGD01-0006-01

Elapsed Live time: 3600
Elapsed Real Time: 3602

Channel								
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	15	93
17:	89	84	58	70	62	55	74	64
25:	62	66	55	43	52	58	75	60
33:	55	48	50	53	48	58	62	78
41:	55	70	54	73	99	96	79	61
49:	62	64	64	83	86	73	62	85
57:	73	87	101	86	103	141	136	114
65:	107	90	80	81	96	114	101	115
73:	190	240	243	285	215	128	78	90
81:	74	74	99	99	102	128	153	102
89:	121	113	123	167	121	86	72	56
97:	66	58	62	63	56	58	59	68
105:	65	66	72	65	48	60	71	49
113:	49	63	62	55	56	59	44	49
121:	70	55	54	54	72	54	67	77
129:	62	58	50	70	53	52	49	50
137:	50	59	46	50	46	64	76	67
145:	59	44	49	52	49	50	38	58
153:	47	56	47	49	41	43	41	51
161:	36	61	69	41	48	39	45	36
169:	39	41	40	48	50	41	46	46
177:	47	38	45	44	43	36	47	67
185:	97	69	45	46	39	44	54	42
193:	44	40	30	39	40	43	52	39
201:	34	45	38	28	45	37	40	56
209:	54	32	46	38	36	29	31	36
217:	36	30	22	37	34	43	30	33
225:	34	30	29	35	42	37	26	31
233:	41	40	45	70	189	254	127	79
241:	65	52	39	38	30	33	20	22
249:	25	31	31	28	29	27	25	33
257:	35	25	30	22	28	22	16	29
265:	27	35	27	24	46	27	38	22
273:	35	25	30	32	26	20	28	24
281:	16	26	26	15	21	19	26	21
289:	22	17	18	18	37	73	77	32
297:	24	29	30	37	17	18	25	24
305:	22	20	21	15	18	16	25	37
313:	19	22	23	21	21	28	12	20
321:	21	24	21	22	28	27	27	32
329:	24	16	23	14	23	17	20	35
337:	52	47	31	11	17	15	26	14
345:	15	9	20	10	24	72	116	88
353:	19	17	18	17	18	17	19	14
361:	17	12	12	10	20	16	16	14

369:	19	16	16	24	12	14	21	15

Sample Title: HTC-A08-BKGD01-0006-01

Channel								
377:	16	13	21	14	16	17	12	24
385:	19	13	10	24	21	17	10	19
393:	15	15	11	9	14	10	9	15
401:	29	21	20	14	18	17	18	17
409:	18	15	11	10	18	12	11	10
417:	20	11	13	10	13	11	9	13
425:	16	15	16	15	16	15	15	13
433:	9	14	14	7	9	19	12	11
441:	9	11	17	16	9	8	10	8
449:	13	15	13	8	14	5	16	14
457:	15	7	7	13	23	27	20	11
465:	11	14	10	12	10	7	11	17
473:	16	11	6	16	12	13	17	7
481:	6	7	7	14	17	11	5	14
489:	13	8	9	16	9	12	7	13
497:	7	10	10	12	16	12	10	17
505:	7	12	9	18	30	46	39	24
513:	10	12	13	10	11	14	5	5
521:	11	8	4	9	14	12	9	7
529:	14	11	12	15	15	13	16	7
537:	9	9	8	8	10	3	8	11
545:	6	6	10	12	14	13	7	10
553:	11	7	12	7	9	4	15	16
561:	11	7	13	13	11	9	4	12
569:	7	11	12	6	8	11	10	4
577:	11	2	9	8	23	54	64	26
585:	10	10	7	13	7	3	5	7
593:	2	7	13	14	9	7	13	7
601:	9	12	8	6	7	12	22	63
609:	63	39	9	7	9	14	9	13
617:	6	4	9	8	6	13	10	9
625:	3	7	6	7	11	11	12	8
633:	12	10	5	5	7	10	4	8
641:	13	9	11	7	9	18	6	9
649:	12	14	7	7	4	7	10	9
657:	5	9	11	24	22	23	10	8
665:	10	5	9	7	8	12	7	7
673:	8	8	13	7	13	11	10	7
681:	6	2	7	9	11	9	7	6
689:	10	7	5	13	7	7	13	6
697:	5	7	7	9	8	6	12	8
705:	6	10	8	3	7	4	9	7
713:	7	12	9	10	7	8	8	9
721:	7	7	6	6	13	14	14	12
729:	2	6	3	8	9	6	5	5
737:	4	6	5	4	11	6	7	6
745:	9	9	5	7	13	2	2	4
753:	8	2	6	8	6	3	3	5
761:	5	2	4	11	10	14	10	13
769:	2	5	9	7	6	5	12	4
777:	3	5	6	6	4	6	5	7
785:	8	9	5	6	2	8	9	5
793:	6	13	13	15	8	4	7	3

801:	9	5	8	2	5	7	6	6

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Channel								
809:	6	10	4	6	9	4	5	5
817:	5	2	6	4	7	1	3	2
825:	3	6	3	4	11	6	6	5
833:	3	9	7	5	5	6	5	10
841:	5	8	4	7	1	3	7	7
849:	4	1	4	3	4	5	7	3
857:	5	4	10	10	10	2	6	4
865:	4	7	3	7	2	4	2	1
873:	6	4	3	3	4	4	8	5
881:	7	5	5	7	3	3	5	8
889:	3	4	5	4	1	4	5	6
897:	5	3	5	7	4	4	4	8
905:	4	3	7	13	24	32	28	17
913:	7	3	6	6	8	8	12	12
921:	6	6	2	6	5	3	6	2
929:	5	7	6	6	7	10	4	5
937:	5	3	7	7	5	7	3	5
945:	5	4	7	6	5	8	2	5
953:	1	7	0	2	5	8	6	2
961:	6	2	10	11	4	4	13	16
969:	18	9	4	4	2	3	2	3
977:	5	2	4	3	4	6	4	7
985:	4	2	3	0	6	6	6	2
993:	3	5	3	4	3	2	7	7
1001:	10	3	5	2	6	0	5	8
1009:	8	3	7	9	9	4	4	4
1017:	4	7	7	7	2	0	5	4
1025:	3	4	5	5	7	5	8	5
1033:	3	7	5	6	12	6	6	6
1041:	2	6	2	7	5	6	3	4
1049:	9	6	8	2	7	3	4	5
1057:	1	5	4	5	2	6	4	8
1065:	5	5	6	3	6	5	5	5
1073:	4	6	3	6	2	5	6	3
1081:	2	1	3	1	8	5	6	1
1089:	3	5	5	5	5	10	3	5
1097:	1	6	4	3	7	4	8	3
1105:	3	7	4	8	8	4	8	6
1113:	7	3	3	7	6	8	17	19
1121:	18	7	3	3	1	2	4	6
1129:	0	2	8	2	7	6	3	5
1137:	5	3	1	6	5	2	10	5
1145:	1	8	5	2	5	3	10	5
1153:	2	3	6	9	4	9	5	6
1161:	3	2	5	1	2	6	6	8
1169:	7	4	6	5	1	3	2	8
1177:	8	7	6	10	9	7	7	2
1185:	8	4	5	5	5	5	6	4
1193:	5	6	7	7	5	5	5	6
1201:	4	7	6	3	6	0	9	5
1209:	3	1	3	3	3	6	5	5
1217:	11	5	7	4	4	7	6	5
1225:	1	8	6	6	5	7	6	8

1233:	11	6	3	5	10	16	6	8

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Channel								
1241:	5	4	2	5	4	1	8	8
1249:	10	14	3	3	3	7	6	4
1257:	4	8	4	4	6	0	3	4
1265:	2	5	5	5	1	3	2	6
1273:	6	2	4	3	4	4	5	5
1281:	4	4	3	2	4	6	5	4
1289:	4	6	5	2	2	3	0	4
1297:	3	7	5	6	4	2	2	1
1305:	0	1	3	3	6	5	5	2
1313:	2	6	4	3	0	5	4	3
1321:	2	4	2	6	1	5	6	0
1329:	3	1	2	3	1	1	1	5
1337:	3	4	3	2	6	1	3	2
1345:	3	5	2	6	2	3	7	2
1353:	1	1	1	3	5	1	1	2
1361:	1	0	2	0	3	2	1	2
1369:	3	2	3	3	2	2	4	3
1377:	4	3	3	3	3	2	5	0
1385:	2	0	1	0	3	1	1	1
1393:	1	0	2	3	2	2	2	1
1401:	1	4	0	0	3	8	5	4
1409:	1	1	1	2	1	1	0	1
1417:	0	2	4	1	2	2	2	1
1425:	2	1	1	0	1	2	1	0
1433:	2	0	4	2	1	0	1	2
1441:	4	2	0	3	0	1	0	1
1449:	1	3	1	0	1	1	5	1
1457:	1	13	61	104	109	40	12	3
1465:	1	0	1	4	2	2	2	2
1473:	0	2	1	0	2	0	0	1
1481:	2	0	2	0	2	2	1	0
1489:	0	0	0	0	1	3	3	2
1497:	3	1	0	0	1	2	3	0
1505:	1	1	1	2	2	4	2	1
1513:	3	1	3	0	1	1	0	1
1521:	2	0	1	1	1	1	3	0
1529:	2	2	1	0	1	1	3	0
1537:	1	0	0	1	3	0	1	2
1545:	0	0	2	0	1	2	2	1
1553:	0	2	0	0	1	1	0	0
1561:	0	0	2	1	4	2	1	2
1569:	0	1	0	6	3	0	0	0
1577:	0	1	0	1	1	0	1	2
1585:	1	0	1	4	3	0	1	5
1593:	4	2	1	0	0	1	3	3
1601:	0	5	1	1	3	2	1	2
1609:	0	1	0	0	0	3	0	0
1617:	3	0	0	0	4	2	1	2
1625:	1	2	2	1	4	2	1	0
1633:	0	3	0	1	2	1	0	1
1641:	0	0	1	0	1	3	3	1
1649:	0	1	1	0	0	1	1	0
1657:	1	2	0	2	3	1	0	1

1665:	0	1	2	1	0	0	0	0

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

2097:	3	0	1	0	1	2	1	2

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

2529:	3	0	1	0	1	0	0	0

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Channel								
2537:	0	0	0	0	1	0	0	0
2545:	0	0	0	0	1	1	0	0
2553:	0	0	0	0	0	0	1	0
2561:	1	0	0	0	0	0	0	1
2569:	0	0	0	0	0	0	1	0
2577:	0	0	0	0	0	0	0	0
2585:	0	1	0	0	0	0	0	0
2593:	0	0	0	0	0	0	1	0
2601:	0	1	0	0	0	0	0	0
2609:	0	0	1	2	7	12	16	5
2617:	2	0	0	0	0	2	0	0
2625:	0	0	0	0	1	0	1	0
2633:	0	1	0	0	0	0	1	0
2641:	0	0	1	0	0	1	0	0
2649:	0	0	0	1	0	0	0	0
2657:	0	0	0	0	0	0	0	0
2665:	0	0	0	1	0	0	0	0
2673:	0	1	0	0	1	1	0	0
2681:	0	0	0	0	0	0	2	0
2689:	0	0	0	1	1	2	0	0
2697:	1	0	0	0	1	1	1	0
2705:	0	0	0	1	0	1	0	0
2713:	0	0	0	0	0	0	0	1
2721:	1	1	0	0	0	0	0	0
2729:	0	1	0	0	0	0	0	0
2737:	0	1	0	0	0	1	0	1
2745:	0	1	0	0	0	0	0	0
2753:	0	0	0	0	0	0	0	1
2761:	0	0	0	0	0	0	1	0
2769:	1	0	0	0	0	0	0	0
2777:	0	0	0	0	0	0	0	0
2785:	1	0	0	0	0	0	0	0
2793:	1	0	0	0	0	0	0	0
2801:	0	0	1	0	0	0	1	0
2809:	0	0	0	0	0	1	0	2
2817:	0	0	1	0	0	1	0	0
2825:	0	0	0	1	0	0	0	0
2833:	0	0	0	0	0	0	0	0
2841:	1	0	0	1	0	0	0	0
2849:	0	1	0	1	0	0	0	0
2857:	1	0	0	0	0	0	0	0
2865:	0	0	0	0	0	0	0	0
2873:	0	1	0	1	0	0	0	0
2881:	0	0	0	0	1	0	0	0
2889:	0	0	0	0	0	0	0	0
2897:	0	0	0	0	0	0	0	0
2905:	1	0	0	0	0	0	1	1
2913:	1	0	0	0	1	1	0	0
2921:	1	0	0	0	0	0	0	0
2929:	0	0	0	0	0	0	0	0
2937:	0	0	0	0	0	1	0	0
2945:	0	0	0	0	1	0	0	0
2953:	0	0	0	0	0	0	1	0

2961:	0	0	0	0	0	0	0	0

Sample Title: HTC-A08-BKGD01-0006-01

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

3393:	0	0	0	0	0	0	0	1

Sample Title: HTC-A08-BKGD01-0006-01

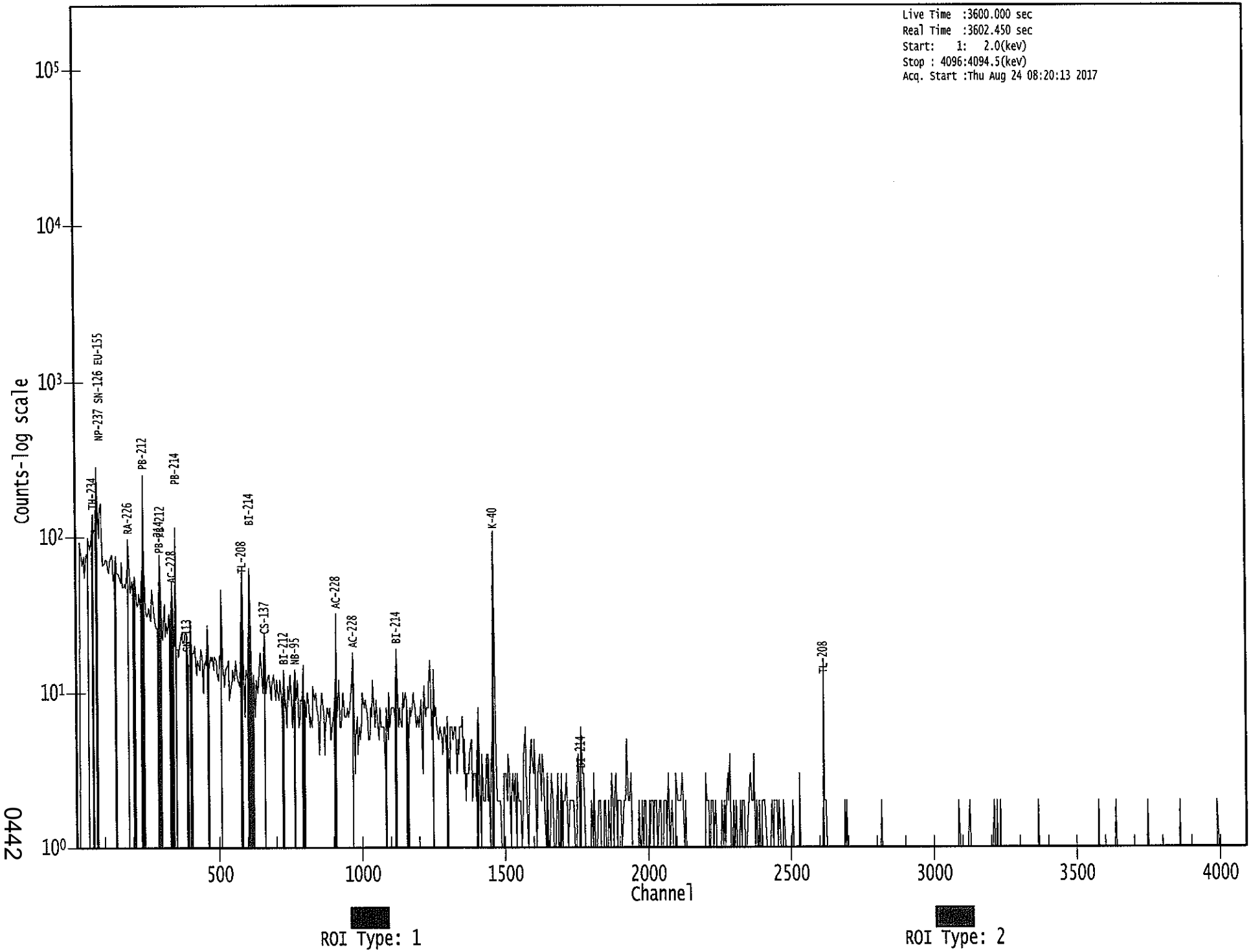
Channel								
3401:	1	0	0	0	0	0	0	0
3409:	0	0	0	0	0	0	0	0
3417:	0	0	0	0	0	0	0	0
3425:	1	0	0	0	0	0	0	0
3433:	0	1	0	0	0	0	0	0
3441:	0	0	0	0	0	0	0	0
3449:	0	1	0	0	0	0	0	0
3457:	0	0	0	0	0	0	0	0
3465:	0	0	0	0	0	0	0	0
3473:	0	0	1	0	0	0	0	0
3481:	0	0	0	0	0	0	0	1
3489:	1	0	0	0	0	1	0	0
3497:	0	0	0	0	0	0	0	0
3505:	0	0	0	0	0	0	0	0
3513:	0	0	0	0	0	1	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	0	1	0	0	0
3569:	0	0	0	0	0	1	0	2
3577:	0	0	0	0	0	0	1	0
3585:	0	0	0	0	0	0	0	0
3593:	0	0	0	0	0	0	0	0
3601:	0	0	0	0	0	1	0	0
3609:	0	0	0	0	0	0	0	1
3617:	0	0	0	0	0	0	0	0
3625:	0	0	0	1	0	0	0	0
3633:	0	0	0	2	0	1	0	1
3641:	0	0	0	0	0	0	0	0
3649:	0	0	0	0	0	0	1	0
3657:	0	0	0	0	0	0	0	0
3665:	0	0	1	0	1	0	0	0
3673:	0	0	0	0	0	0	1	0
3681:	0	0	0	0	0	0	0	0
3689:	0	0	0	0	0	0	0	1
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:	0	1	0	0	1	0	0	0
3737:	0	0	1	0	0	0	0	0
3745:	0	0	2	0	0	0	1	0
3753:	0	0	0	0	0	0	1	1
3761:	0	0	0	0	0	0	0	0
3769:	0	0	0	0	0	1	0	0
3777:	0	0	0	0	0	0	0	0
3785:	0	0	0	0	0	0	0	0
3793:	0	0	0	0	0	0	0	0
3801:	1	0	0	0	0	1	0	0
3809:	0	0	0	0	0	0	0	0
3817:	0	1	1	0	0	0	0	0

3825:	0	0	0	1	0	1	0	0

Sample Title: HTC-A08-BKGD01-0006-01

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

0000055877.CNF



0442

Apex-Gamma

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8/24

Analysis Report for 1707091-04
HTC-A08-BKGD01-0006-01

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 1707091-04
Sample Description	: HTC-A08-BKGD01-0006-01
Sample Type	: SOIL
Sample Size	: 5.846E+02 grams
Facility	: Countroom
Sample Taken On	: 5/15/2017 12:48:43PM
Acquisition Started	: 8/24/2017 9:23:43AM
Procedure	: GAS-1602 pCi
Operator	: Administrator
Detector Name	: GE4
Geometry	: GAS-1602
Live Time	: 3600.0 seconds
Real Time	: 3612.8 seconds
Dead Time	: 0.35 %
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	: 1/14/2017
Efficiency Calibration Used Done On	: 1/14/2017
Efficiency Calibration Description	:
Sample Number	: 55881

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

Analysis Report for 1707091-04

HTC-A08-BKGD01-0006-01

PEAK LOCATE REPORT

Peak Locate Performed on : 8/24/2017 10:23:57AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096
Peak Search Sensitivity : 2.50

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
1	46.41	45.46	0.0000	0.00
2	76.27	75.33	0.0000	0.00
3	84.02	83.08	0.0000	0.00
4	87.14	86.20	0.0000	0.00
5	89.74	88.80	0.0000	0.00
6	93.10	92.16	0.0000	0.00
7	185.87	184.96	0.0000	0.00
8	239.21	238.31	0.0000	0.00
9	270.28	269.40	0.0000	0.00
10	295.11	294.24	0.0000	0.00
11	328.50	327.63	0.0000	0.00
12	338.54	337.68	0.0000	0.00
13	351.89	351.04	0.0000	0.00
14	444.71	443.89	0.0000	0.00
15	466.34	465.52	0.0000	0.00
16	511.50	510.71	0.0000	0.00
17	583.28	582.51	0.0000	0.00
18	610.03	609.27	0.0000	0.00
19	712.77	712.05	0.0000	0.00
20	848.32	847.65	0.0000	0.00
21	911.12	910.49	0.0000	0.00
22	918.21	917.58	0.0000	0.00
23	968.38	967.77	0.0000	0.00
24	1066.96	1066.39	0.0000	0.00
25	1325.89	1325.45	0.0000	0.00
26	1413.83	1413.43	0.0000	0.00
27	1460.83	1460.46	0.0000	0.00
28	1592.74	1592.43	0.0000	0.00
29	1728.59	1728.35	0.0000	0.00
30	1764.39	1764.17	0.0000	0.00
31	2202.78	2202.82	0.0000	0.00
32	2289.90	2290.00	0.0000	0.00
33	2341.38	2341.51	0.0000	0.00
34	2614.28	2614.59	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1707091-04

HTC-A08-BKGD01-0006-01

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 8/24/2017 10:23:57AM

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

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
	1	46.41	43 -	49	45.46	1.06E+02	70.85	8.41E+02	2.48
	2	76.27	69 -	80	75.33	8.63E+02	145.77	2.22E+03	4.01
M	3	84.02	81 -	95	83.08	5.77E+01	62.37	8.21E+02	2.18
m	4	87.14	81 -	95	86.20	1.68E+02	84.00	1.09E+03	2.18
m	5	89.74	81 -	95	88.80	9.51E+01	85.09	1.03E+03	2.19
m	6	93.10	81 -	95	92.16	2.13E+02	82.02	9.73E+02	2.19
	7	185.87	180 -	189	184.96	1.76E+02	78.77	7.87E+02	2.04
	8	239.21	233 -	243	238.31	5.78E+02	84.47	6.41E+02	2.07
	9	270.28	266 -	273	269.40	6.35E+01	47.46	3.35E+02	1.52
	10	295.11	289 -	298	294.24	1.66E+02	58.86	4.01E+02	2.31
M	11	328.50	324 -	341	327.63	4.11E+01	41.90	2.94E+02	2.63
m	12	338.54	324 -	341	337.68	1.30E+02	44.14	2.16E+02	2.64
	13	351.89	346 -	355	351.04	2.49E+02	56.27	3.09E+02	2.41
	14	444.71	441 -	447	443.89	2.40E+01	28.31	1.26E+02	2.78
	15	466.34	458 -	472	465.52	1.01E+02	48.19	2.00E+02	7.48
	16	511.50	506 -	518	510.71	1.20E+02	48.50	2.18E+02	3.08
	17	583.28	579 -	587	582.51	1.39E+02	35.47	1.08E+02	2.46
	18	610.03	602 -	621	609.27	2.07E+02	62.83	2.60E+02	2.77
	19	712.77	706 -	716	712.05	2.79E+01	31.16	1.12E+02	2.98
	20	848.32	843 -	852	847.65	2.30E+01	24.12	7.00E+01	7.00
	21	911.12	905 -	914	910.49	7.15E+01	31.95	1.05E+02	2.86
	22	918.21	915 -	921	917.58	2.02E+01	20.51	5.96E+01	4.84
	23	968.38	962 -	973	967.77	4.41E+01	30.66	9.39E+01	3.17
	24	1066.96	1065 -	1068	1066.39	8.18E+00	11.14	2.36E+01	1.53
	25	1325.89	1322 -	1330	1325.45	1.25E+01	15.02	2.70E+01	1.30
	26	1413.83	1410 -	1416	1413.43	1.10E+01	10.04	1.01E+01	2.12
	27	1460.83	1455 -	1466	1460.46	3.56E+02	41.28	3.19E+01	2.70
	28	1592.74	1590 -	1596	1592.43	9.72E+00	11.54	1.66E+01	1.51
	29	1728.59	1724 -	1732	1728.35	1.70E+01	8.25	0.00E+00	5.50
	30	1764.39	1759 -	1771	1764.17	2.14E+01	17.35	2.32E+01	1.58
	31	2202.78	2198 -	2206	2202.82	1.70E+01	8.25	0.00E+00	2.04
	32	2289.90	2285 -	2294	2290.00	1.00E+01	6.32	0.00E+00	6.99
	33	2341.38	2337 -	2345	2341.51	8.91E+00	8.02	4.18E+00	3.20
	34	2614.28	2609 -	2619	2614.59	4.90E+01	14.00	0.00E+00	1.71

Analysis Report for 1707091-04

HTC-A08-BKGD01-0006-01

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 : 8/24/2017 10:23:57AM

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

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	1	46.41	43 -	49	1.06E+02	70.85	8.41E+02	5.57E+01
	2	76.27	69 -	80	8.63E+02	145.77	2.22E+03	1.10E+02
M	3	84.02	81 -	95	5.77E+01	62.37	8.21E+02	4.71E+01
m	4	87.14	81 -	95	1.68E+02	84.00	1.09E+03	5.43E+01
m	5	89.74	81 -	95	9.51E+01	85.09	1.03E+03	5.28E+01
m	6	93.10	81 -	95	2.13E+02	82.02	9.73E+02	5.13E+01
	7	185.87	180 -	189	1.76E+02	78.77	7.87E+02	6.10E+01
	8	239.21	233 -	243	5.78E+02	84.47	6.41E+02	5.71E+01
	9	270.28	266 -	273	6.35E+01	47.46	3.35E+02	3.67E+01
	10	295.11	289 -	298	1.66E+02	58.86	4.01E+02	4.35E+01
M	11	328.50	324 -	341	4.11E+01	41.90	2.94E+02	2.82E+01
m	12	338.54	324 -	341	1.30E+02	44.14	2.16E+02	2.42E+01
	13	351.89	346 -	355	2.49E+02	56.27	3.09E+02	3.83E+01
	14	444.71	441 -	447	2.40E+01	28.31	1.26E+02	2.18E+01
	15	466.34	458 -	472	1.01E+02	48.19	2.00E+02	3.60E+01
	16	511.50	506 -	518	1.20E+02	48.50	2.18E+02	3.56E+01
	17	583.28	579 -	587	1.39E+02	35.47	1.08E+02	2.18E+01
	18	610.03	602 -	621	2.07E+02	62.83	2.60E+02	1.68E+01
	19	712.77	706 -	716	2.79E+01	31.16	1.12E+02	2.41E+01
	20	848.32	843 -	852	2.30E+01	24.12	7.00E+01	1.82E+01
	21	911.12	905 -	914	7.15E+01	31.95	1.05E+02	2.23E+01
	22	918.21	915 -	921	2.02E+01	20.51	5.96E+01	1.51E+01
	23	968.38	962 -	973	4.41E+01	30.66	9.39E+01	3.87E+01
	24	1066.96	1065 -	1068	8.18E+00	11.14	2.36E+01	7.85E+00
	25	1325.89	1322 -	1330	1.25E+01	15.02	2.70E+01	1.09E+01
	26	1413.83	1410 -	1416	1.10E+01	10.04	1.01E+01	6.20E+00
	27	1460.83	1455 -	1466	3.56E+02	41.28	3.19E+01	1.38E+01
	28	1592.74	1590 -	1596	9.72E+00	11.54	1.66E+01	7.98E+00
	29	1728.59	1724 -	1732	1.70E+01	8.25	0.00E+00	0.00E+00
	30	1764.39	1759 -	1771	2.14E+01	17.35	2.32E+01	1.21E+01
	31	2202.78	2198 -	2206	1.70E+01	8.25	0.00E+00	0.00E+00

Analysis Report for 1707091-04

HTC-A08-BKGD01-0006-01

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
32	2289.90	2285 -	2294	1.00E+01	6.32	0.00E+00	0.00E+00
33	2341.38	2337 -	2345	8.91E+00	8.02	4.18E+00	4.40E+00
34	2614.28	2609 -	2619	4.90E+01	14.00	0.00E+00	0.00E+00

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

PEAK WITH NID REPORT

Peak Analysis Performed on : 8/24/2017 10:23:57AM

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

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

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	1	46.41	43 -	49	45.46	1.06E+02	70.85	8.41E+02	PB-210
	2	76.27	69 -	80	75.33	8.63E+02	145.77	2.22E+03	.....
M	3	84.02	81 -	95	83.08	5.77E+01	62.37	8.21E+02	TH-231
m	4	87.14	81 -	95	86.20	1.68E+02	84.00	1.09E+03	SN-126
									NP-237
									EU-155
									CD-109
m	5	89.74	81 -	95	88.80	9.51E+01	85.09	1.03E+03	.....
m	6	93.10	81 -	95	92.16	2.13E+02	82.02	9.73E+02	GA-67
	7	185.87	180 -	189	184.96	1.76E+02	78.77	7.87E+02	RA-226
	8	239.21	233 -	243	238.31	5.78E+02	84.47	6.41E+02	PB-212
	9	270.28	266 -	273	269.40	6.35E+01	47.46	3.35E+02	.....
	10	295.11	289 -	298	294.24	1.66E+02	58.86	4.01E+02	PB-214
M	11	328.50	324 -	341	327.63	4.11E+01	41.90	2.94E+02	LA-140
m	12	338.54	324 -	341	337.68	1.30E+02	44.14	2.16E+02	AC-228
	13	351.89	346 -	355	351.04	2.49E+02	56.27	3.09E+02	PB-214
	14	444.71	441 -	447	443.89	2.40E+01	28.31	1.26E+02	.....
	15	466.34	458 -	472	465.52	1.01E+02	48.19	2.00E+02	.....
	16	511.50	506 -	518	510.71	1.20E+02	48.50	2.18E+02	.....
	17	583.28	579 -	587	582.51	1.39E+02	35.47	1.08E+02	TL-208
	18	610.03	602 -	621	609.27	2.07E+02	62.83	2.60E+02	BI-214
	19	712.77	706 -	716	712.05	2.79E+01	31.16	1.12E+02	.....
	20	848.32	843 -	852	847.65	2.30E+01	24.12	7.00E+01	.....

Analysis Report for 1707091-04

HTC-A08-BKGD01-0006-01

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
21	911.12	905 -	914	910.49	7.15E+01	31.95	1.05E+02	AC-228 TL-204
22	918.21	915 -	921	917.58	2.02E+01	20.51	5.96E+01	.....
23	968.38	962 -	973	967.77	4.41E+01	30.66	9.39E+01	AC-228
24	1066.96	1065 -	1068	1066.39	8.18E+00	11.14	2.36E+01	.....
25	1325.89	1322 -	1330	1325.45	1.25E+01	15.02	2.70E+01	.....
26	1413.83	1410 -	1416	1413.43	1.10E+01	10.04	1.01E+01	.....
27	1460.83	1455 -	1466	1460.46	3.56E+02	41.28	3.19E+01	K-40
28	1592.74	1590 -	1596	1592.43	9.72E+00	11.54	1.66E+01	.....
29	1728.59	1724 -	1732	1728.35	1.70E+01	8.25	0.00E+00	.....
30	1764.39	1759 -	1771	1764.17	2.14E+01	17.35	2.32E+01	BI-214
31	2202.78	2198 -	2206	2202.82	1.70E+01	8.25	0.00E+00	.....
32	2289.90	2285 -	2294	2290.00	1.00E+01	6.32	0.00E+00	.....
33	2341.38	2337 -	2345	2341.51	8.91E+00	8.02	4.18E+00	.....
34	2614.28	2609 -	2619	2614.59	4.90E+01	14.00	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 : 8/24/2017 10:23:57AM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	46.41	1.06E+02	70.85	1.64E-02	1.56E-03
	2	76.27	8.63E+02	145.77	2.32E-02	1.92E-03
M	3	84.02	5.77E+01	62.37	2.36E-02	2.08E-03
m	4	87.14	1.68E+02	84.00	2.37E-02	2.15E-03
m	5	89.74	9.51E+01	85.09	2.37E-02	2.14E-03
m	6	93.10	2.13E+02	82.02	2.37E-02	2.09E-03
	7	185.87	1.76E+02	78.77	1.69E-02	1.40E-03
	8	239.21	5.78E+02	84.47	1.36E-02	1.14E-03
	9	270.28	6.35E+01	47.46	1.20E-02	9.90E-04
	10	295.11	1.66E+02	58.86	1.10E-02	9.13E-04
M	11	328.50	4.11E+01	41.90	9.89E-03	8.43E-04
m	12	338.54	1.30E+02	44.14	9.59E-03	8.22E-04
	13	351.89	2.49E+02	56.27	9.22E-03	7.94E-04
	14	444.71	2.40E+01	28.31	7.24E-03	6.89E-04
	15	466.34	1.01E+02	48.19	6.89E-03	6.80E-04

Analysis Report for 1707091-04

HTC-A08-BKGD01-0006-01

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
16	511.50	1.20E+02	48.50	6.28E-03	6.61E-04
17	583.28	1.39E+02	35.47	5.50E-03	6.31E-04
18	610.03	2.07E+02	62.83	5.27E-03	6.20E-04
19	712.77	2.79E+01	31.16	4.54E-03	5.35E-04
20	848.32	2.30E+01	24.12	3.86E-03	3.64E-04
21	911.12	7.15E+01	31.95	3.62E-03	2.99E-04
22	918.21	2.02E+01	20.51	3.59E-03	2.97E-04
23	968.38	4.41E+01	30.66	3.43E-03	2.85E-04
24	1066.96	8.18E+00	11.14	3.15E-03	2.62E-04
25	1325.89	1.25E+01	15.02	2.60E-03	2.28E-04
26	1413.83	1.10E+01	10.04	2.46E-03	2.15E-04
27	1460.83	3.56E+02	41.28	2.38E-03	2.08E-04
28	1592.74	9.72E+00	11.54	2.20E-03	1.88E-04
29	1728.59	1.70E+01	8.25	2.04E-03	1.67E-04
30	1764.39	2.14E+01	17.35	2.00E-03	1.62E-04
31	2202.78	1.70E+01	8.25	1.58E-03	1.51E-04
32	2289.90	1.00E+01	6.32	1.51E-03	1.51E-04
33	2341.38	8.91E+00	8.02	1.47E-03	1.51E-04
34	2614.28	4.90E+01	14.00	1.28E-03	1.51E-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 : 8/24/2017 10:23:57AM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000055576.CNF

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	1	46.41	1.06E+02	70.85	2.81E+01	8.29E+00	7.75E+01	7.13E+01
	2	76.27	8.63E+02	145.77			8.63E+02	1.46E+02
M	3	84.02	5.77E+01	62.37			5.77E+01	6.24E+01
m	4	87.14	1.68E+02	84.00			1.68E+02	8.40E+01
m	5	89.74	9.51E+01	85.09			9.51E+01	8.51E+01
m	6	93.10	2.13E+02	82.02	5.99E+01	8.61E+00	1.53E+02	8.25E+01
	7	185.87	1.76E+02	78.77	2.43E+01	7.50E+00	1.52E+02	7.91E+01
	8	239.21	5.78E+02	84.47	1.06E+01	6.01E+00	5.68E+02	8.47E+01
	9	270.28	6.35E+01	47.46			6.35E+01	4.75E+01
	10	295.11	1.66E+02	58.86			1.66E+02	5.89E+01
M	11	328.50	4.11E+01	41.90			4.11E+01	4.19E+01

Analysis Report for 1707091-04

HTC-A08-BKGD01-0006-01

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
m	12	338.54	1.30E+02	44.14			1.30E+02	4.41E+01
	13	351.89	2.49E+02	56.27			2.49E+02	5.63E+01
	14	444.71	2.40E+01	28.31			2.40E+01	2.83E+01
	15	466.34	1.01E+02	48.19			1.01E+02	4.82E+01
	16	511.50	1.20E+02	48.50	4.55E+01	4.99E+00	7.43E+01	4.88E+01
	17	583.28	1.39E+02	35.47			1.39E+02	3.55E+01
	18	610.03	2.07E+02	62.83			2.07E+02	6.28E+01
	19	712.77	2.79E+01	31.16			2.79E+01	3.12E+01
	20	848.32	2.30E+01	24.12			2.30E+01	2.41E+01
	21	911.12	7.15E+01	31.95			7.15E+01	3.20E+01
	22	918.21	2.02E+01	20.51			2.02E+01	2.05E+01
	23	968.38	4.41E+01	30.66			4.41E+01	3.07E+01
	24	1066.96	8.18E+00	11.14			8.18E+00	1.11E+01
	25	1325.89	1.25E+01	15.02			1.25E+01	1.50E+01
	26	1413.83	1.10E+01	10.04			1.10E+01	1.00E+01
	27	1460.83	3.56E+02	41.28			3.56E+02	4.13E+01
	28	1592.74	9.72E+00	11.54			9.72E+00	1.15E+01
	29	1728.59	1.70E+01	8.25			1.70E+01	8.25E+00
	30	1764.39	2.14E+01	17.35			2.14E+01	1.73E+01
	31	2202.78	1.70E+01	8.25			1.70E+01	8.25E+00
	32	2289.90	1.00E+01	6.32			1.00E+01	6.32E+00
	33	2341.38	8.91E+00	8.02			8.91E+00	8.02E+00
	34	2614.28	4.90E+01	14.00			4.90E+01	1.40E+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 : 8/24/2017 10:23:57AM

Ref. Peak Energy : 0.00 Reference Date :
Peak Ratio : 0.00 Uncertainty : 0.00
Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000055576.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	46.41	1.06E+02	70.85	2.81E+01	8.29E+00	7.75E+01	7.13E+01
	2	76.27	8.63E+02	145.77			8.63E+02	1.46E+02
M	3	84.02	5.77E+01	62.37			5.77E+01	6.24E+01
m	4	87.14	1.68E+02	84.00			1.68E+02	8.40E+01
m	5	89.74	9.51E+01	85.09			9.51E+01	8.51E+01

Analysis Report for 1707091-04

HTC-A08-BKGD01-0006-01

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
m	6	93.10	2.13E+02	82.02	5.99E+01	8.61E+00	1.53E+02	8.25E+01
	7	185.87	1.76E+02	78.77	2.43E+01	7.50E+00	1.52E+02	7.91E+01
	8	239.21	5.78E+02	84.47	1.06E+01	6.01E+00	5.68E+02	8.47E+01
	9	270.28	6.35E+01	47.46			6.35E+01	4.75E+01
	10	295.11	1.66E+02	58.86			1.66E+02	5.89E+01
M	11	328.50	4.11E+01	41.90			4.11E+01	4.19E+01
m	12	338.54	1.30E+02	44.14			1.30E+02	4.41E+01
	13	351.89	2.49E+02	56.27			2.49E+02	5.63E+01
	14	444.71	2.40E+01	28.31			2.40E+01	2.83E+01
	15	466.34	1.01E+02	48.19			1.01E+02	4.82E+01
	16	511.50	1.20E+02	48.50	4.55E+01	4.99E+00	7.43E+01	4.88E+01
	17	583.28	1.39E+02	35.47			1.39E+02	3.55E+01
	18	610.03	2.07E+02	62.83			2.07E+02	6.28E+01
	19	712.77	2.79E+01	31.16			2.79E+01	3.12E+01
	20	848.32	2.30E+01	24.12			2.30E+01	2.41E+01
	21	911.12	7.15E+01	31.95			7.15E+01	3.20E+01
	22	918.21	2.02E+01	20.51			2.02E+01	2.05E+01
	23	968.38	4.41E+01	30.66			4.41E+01	3.07E+01
	24	1066.96	8.18E+00	11.14			8.18E+00	1.11E+01
	25	1325.89	1.25E+01	15.02			1.25E+01	1.50E+01
	26	1413.83	1.10E+01	10.04			1.10E+01	1.00E+01
	27	1460.83	3.56E+02	41.28			3.56E+02	4.13E+01
	28	1592.74	9.72E+00	11.54			9.72E+00	1.15E+01
	29	1728.59	1.70E+01	8.25			1.70E+01	8.25E+00
	30	1764.39	2.14E+01	17.35			2.14E+01	1.73E+01
	31	2202.78	1.70E+01	8.25			1.70E+01	8.25E+00
	32	2289.90	1.00E+01	6.32			1.00E+01	6.32E+00
	33	2341.38	8.91E+00	8.02			8.91E+00	8.02E+00
	34	2614.28	4.90E+01	14.00			4.90E+01	1.40E+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	1.000	1460.81	*	10.67	1.80E+01	2.63E+00
CD-109	0.880	88.03	*	3.72	2.85E+00	1.46E+00

Analysis Report for 1707091-04

HTC-A08-BKGD01-0006-01

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
SN-126	0.971	87.57	*	37.00	2.46E-01	1.25E-01
EU-155	0.324	86.50	*	30.90	3.06E-01	1.56E-01
		105.30		20.70		
TL-208	0.870	583.14	*	30.22	1.07E+00	3.00E-01
		860.37		4.48		
		2614.66	*	35.85	1.37E+00	4.24E-01
PB-210	0.999	46.50	*	4.25	1.44E+00	1.33E+00
PB-212	0.850	238.63	*	44.60	1.21E+00	2.06E-01
		300.09		3.41		
BI-214	0.632	609.31	*	46.30	1.09E+00	3.55E-01
		1120.29		15.10		
		1764.49	*	15.80	8.71E-01	7.09E-01
		2204.22		4.98		
PB-214	0.999	295.21	*	19.19	1.01E+00	3.67E-01
		351.92	*	37.19	9.34E-01	2.26E-01
RA-226	0.982	186.21	*	3.28	3.52E+00	6.70E+00
AC-228	0.973	338.32	*	11.40	1.53E+00	5.35E-01
		911.07	*	27.70	9.16E-01	4.16E-01
		969.11	*	16.60	9.94E-01	6.97E-01
NP-237	0.938	86.50	*	12.60	7.23E-01	3.68E-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 : 8/24/2017 10:23:57AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	2	76.27	2.39822E-01	8.44		
M	3	84.02	1.60276E-02	54.05	Tol.	TH-231
m	5	89.74	2.64098E-02	44.75		
m	6	93.10	4.24804E-02	26.96	Sum	
	9	270.28	1.76257E-02	37.39		
M	11	328.50	1.14239E-02	50.95	Tol.	LA-140
	14	444.71	6.65549E-03	59.07		
	15	466.34	2.80797E-02	23.84		
	16	511.50	2.06349E-02	32.82		

Analysis Report for 1707091-04

HTC-A08-BKGD01-0006-01

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
19	712.77	7.75463E-03	55.82		
20	848.32	6.38889E-03	52.44	Sum	
22	918.21	5.61667E-03	50.71		
24	1066.96	2.27083E-03	68.11		
25	1325.89	3.47222E-03	60.07		
26	1413.83	3.04687E-03	45.75		
28	1592.74	2.70062E-03	59.37	D-Esc	
29	1728.59	4.72222E-03	24.25		
31	2202.78	4.72222E-03	24.25		
32	2289.90	2.77778E-03	31.62		
33	2341.38	2.47475E-03	44.99		

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	1.00	1460.81	*	10.67	1.80E+01	2.63E+00
CD-109	0.88	88.03	*	3.72	2.85E+00	1.46E+00
SN-126	0.97	87.57	*	37.00	2.46E-01	1.25E-01
EU-155	0.32	86.50	*	30.90	3.06E-01	1.56E-01
		105.30		20.70		
TL-208	0.87	583.14	*	30.22	1.07E+00	3.00E-01
		860.37		4.48		
		2614.66	*	35.85	1.37E+00	4.24E-01
PB-210	0.99	46.50	*	4.25	1.44E+00	1.33E+00
PB-212	0.85	238.63	*	44.60	1.21E+00	2.06E-01
		300.09		3.41		
BI-214	0.63	609.31	*	46.30	1.09E+00	3.55E-01
		1120.29		15.10		
		1764.49	*	15.80	8.71E-01	7.09E-01
		2204.22		4.98		
PB-214	0.99	295.21	*	19.19	1.01E+00	3.67E-01
		351.92	*	37.19	9.34E-01	2.26E-01

Analysis Report for 1707091-04

HTC-A08-BKGD01-0006-01

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
RA-226	0.98	186.21	*	3.28	3.52E+00	6.70E+00
AC-228	0.97	338.32	*	11.40	1.53E+00	5.35E-01
		911.07	*	27.70	9.16E-01	4.16E-01
		969.11	*	16.60	9.94E-01	6.97E-01
NP-237	0.93	86.50	*	12.60	7.23E-01	3.68E-01

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

INTERFERENCE CORRECTED REPORT

	Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
	K-40	1.000	1.80E+01	2.63E+00	
?	CD-109	0.880	2.85E+00	1.46E+00	
?	SN-126	0.971	2.46E-01	1.25E-01	
?	EU-155	0.324	3.06E-01	1.56E-01	
	TL-208	0.870	1.17E+00	2.45E-01	
	PB-210	0.999	1.44E+00	1.33E+00	
	PB-212	0.850	1.21E+00	2.06E-01	
	BI-214	0.632	1.05E+00	3.17E-01	
	PB-214	0.999	9.54E-01	1.92E-01	
	RA-226	0.982	3.52E+00	6.70E+00	
	AC-228	0.973	1.12E+00	2.97E-01	
?	NP-237	0.938	7.23E-01	3.68E-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 1707091-04

HTC-A08-BKGD01-0006-01

UNIDENTIFIED PEAKS

Peak Locate Performed on : 8/24/2017 10:23:57AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	2	76.27	2.39822E-01	8.44		
M	3	84.02	1.60276E-02	54.05	Tol.	TH-231
m	5	89.74	2.64098E-02	44.75		
m	6	93.10	4.24804E-02	26.96	Sum	
	9	270.28	1.76257E-02	37.39		
M	11	328.50	1.14239E-02	50.95	Tol.	LA-140
	14	444.71	6.65549E-03	59.07		
	15	466.34	2.80797E-02	23.84		
	16	511.50	2.06349E-02	32.82		
	19	712.77	7.75463E-03	55.82		
	20	848.32	6.38889E-03	52.44	Sum	
	22	918.21	5.61667E-03	50.71		
	24	1066.96	2.27083E-03	68.11		
	25	1325.89	3.47222E-03	60.07		
	26	1413.83	3.04687E-03	45.75		
	28	1592.74	2.70062E-03	59.37	D-Esc	
	29	1728.59	4.72222E-03	24.25		
	31	2202.78	4.72222E-03	24.25		
	32	2289.90	2.77778E-03	31.62		
	33	2341.38	2.47475E-03	44.99		

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

NUCLIDE MDA REPORT

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

Analysis Report for 1707091-04

HTC-A08-BKGD01-0006-01

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	BE-7	477.59		10.42	9.10E-01	3.02E+00	3.02E+00
+	NA-22	1274.54		99.94	-3.65E-02	1.57E-01	1.57E-01
+	@ NA-24	1368.53		99.99	1.00E+26	1.00E+26	1.00E+26
	@	2754.09		99.86	1.00E+26		1.00E+26
+	AL-26	1808.65		99.76	1.56E-02	1.10E-01	1.10E-01
+	K-40	1460.81	*	10.67	1.80E+01	1.53E+00	1.53E+00
+	@ AR-41	1293.64		99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88		94.40	-5.61E-02	7.51E-02	7.51E-02
		78.34		96.00	3.62E-01		1.01E-01
+	SC-46	889.25		99.98	-1.88E-01	2.35E-01	2.35E-01
		1120.51		99.99	2.03E-01		3.92E-01
+	V-48	983.52		99.98	-6.76E+00	9.84E+00	9.84E+00
		1312.10		97.50	4.18E+00		1.26E+01
+	CR-51	320.08		9.83	-2.90E+00	8.85E+00	8.85E+00
+	MN-54	834.83		99.97	3.61E-02	1.58E-01	1.58E-01
+	CO-56	846.75		99.96	2.72E-03	2.93E-01	2.93E-01
		1037.75		14.03	-1.58E-01		2.32E+00
		1238.25		67.00	2.89E-01		6.64E-01
		1771.40		15.51	1.68E-01		1.43E+00
		2598.48		16.90	2.39E-02		1.72E+00
+	CO-57	122.06		85.51	-1.28E-02	8.46E-02	8.46E-02
		136.48		10.60	7.08E-02		7.01E-01
+	CO-58	810.76		99.40	5.03E-02	3.04E-01	3.04E-01
+	FE-59	1099.22		56.50	-7.44E-03	1.18E+00	1.18E+00
		1291.56		43.20	-7.42E-02		1.53E+00
+	CO-60	1173.22		100.00	-7.01E-02	1.10E-01	1.43E-01
		1332.49		100.00	8.57E-04		1.10E-01
+	ZN-65	1115.52		50.75	4.31E-02	4.04E-01	4.04E-01
+	GA-67	93.31		35.70	3.47E+08	4.07E+08	4.07E+08
		208.95		2.24	2.94E+09		6.37E+09
		300.22		16.00	3.07E+08		1.00E+09
+	SE-75	121.11		16.70	-4.32E-02	1.75E-01	5.96E-01
		136.00		59.20	6.59E-02		1.75E-01
		264.65		59.80	-1.55E-02		1.95E-01
		279.53		25.20	1.03E-01		5.21E-01
		400.65		11.40	1.69E-01		1.27E+00
+	RB-82	776.52		13.00	-6.61E+00	1.26E+01	1.26E+01
+	RB-83	520.41		46.00	-2.10E-01	3.53E-01	3.53E-01
		529.64		30.30	-8.84E-02		5.86E-01
		552.65		16.40	-2.21E-01		1.20E+00
+	KR-85	513.99		0.43	2.94E+01	2.85E+01	2.85E+01
+	SR-85	513.99		99.27	3.71E-01	3.60E-01	3.60E-01
+	Y-88	898.02		93.40	3.61E-02	1.83E-01	2.52E-01
		1836.01		99.38	3.89E-02		1.83E-01
+	MO-93	263.06		56.72	-4.52E-02	8.86E-02	1.16E-01
		684.67		99.68	-1.76E-02		1.07E-01
		1477.11		99.08	-2.72E-02		8.86E-02

Analysis Report for 1707091-04

HTC-A08-BKGD01-0006-01

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	NB-93M	16.57		9.43	1.63E+01	8.23E+00	8.23E+00
+	NB-94	702.63		100.00	-3.88E-02	1.12E-01	1.12E-01
		871.10		100.00	-2.09E-02		1.17E-01
+	NB-95	765.79		99.81	-2.45E-02	8.77E-01	8.77E-01
+	NB-95M	235.69		25.00	1.68E+08	1.11E+08	1.11E+08
+	ZR-95	724.18		43.70	4.44E-01	5.85E-01	8.11E-01
		756.72		55.30	-7.44E-02		5.85E-01
+	MO-99	181.06		6.20	-1.07E+10	9.87E+10	1.10E+11
		739.58		12.80	1.58E+10		9.87E+10
		778.00		4.50	-8.95E+10		2.69E+11
+	RU-103	497.08		89.00	-3.95E-01	5.42E-01	5.42E-01
+	RU-106	621.84		9.80	1.41E-01	1.11E+00	1.11E+00
+	AG-108M	433.93		89.90	-2.63E-02	9.22E-02	9.22E-02
		614.37		90.40	-3.79E-01		1.09E-01
		722.95		90.50	-1.96E-03		1.22E-01
+	CD-109	88.03	*	3.72	2.85E+00	3.91E+00	3.91E+00
+	AG-110M	657.75		93.14	4.43E-02	1.61E-01	1.61E-01
		677.61		10.53	-4.63E-01		1.23E+00
		706.67		16.46	-6.77E-02		8.81E-01
		763.93		21.98	2.10E-01		7.10E-01
		884.67		71.63	3.46E-02		2.19E-01
		1384.27		23.94	8.36E-02		6.52E-01
+	CD-113M	263.70		0.02	-1.72E+02	2.76E+02	2.76E+02
+	SN-113	255.12		1.93	-3.24E+00	2.33E-01	6.19E+00
		391.69		64.90	1.63E-01		2.33E-01
+	TE123M	159.00		84.10	-3.43E-02	1.26E-01	1.26E-01
+	SB-124	602.71		97.87	-5.82E-03	3.07E-01	3.07E-01
		645.85		7.26	2.91E+00		4.63E+00
		722.78		11.10	-5.11E-02		3.17E+00
		1691.02		49.00	-1.88E-02		7.00E-01
+	I-125	35.49		6.49	-1.77E+00	5.41E+00	5.41E+00
+	SB-125	176.33		6.89	2.75E-01	2.93E-01	9.59E-01
		427.89		29.33	-6.88E-02		2.93E-01
		463.38		10.35	-1.68E-01		9.30E-01
		600.56		17.80	2.55E-01		5.77E-01
		635.90		11.32	-8.36E-02		8.48E-01
+	SB-126	414.70		83.30	-6.53E+00	2.50E+01	2.50E+01
		666.33		99.60	-1.63E+01		3.34E+01
		695.00		99.60	7.81E+00		3.34E+01
		720.50		53.80	-1.15E+01		5.12E+01
+	SN-126	87.57	*	37.00	2.46E-01	3.38E-01	3.38E-01
+	SB-127	473.00		25.00	-9.07E+06	2.27E+07	2.45E+07
		685.20		35.70	-3.72E+06		2.27E+07
		783.80		14.70	2.35E+07		7.03E+07
+	I-129	29.78		57.00	-5.60E-02	2.73E-01	2.73E-01
		33.60		13.20	-5.85E-01		8.97E-01
		39.58		7.52	2.59E-01		1.30E+00
+	I-131	284.30		6.05	-1.05E+03	5.51E+02	6.72E+03

Analysis Report for 1707091-04

HTC-A08-BKGD01-0006-01

		Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
		I-131	364.48	81.20	1.99E+02	5.51E+02	5.51E+02
			636.97	7.26	4.01E+03		7.87E+03
			722.89	1.80	-5.90E+02		3.67E+04
+		TE-132	49.72	13.10	-2.08E+08	1.55E+08	1.23E+09
			228.16	88.00	-9.89E+07		1.55E+08
+		BA-133	81.00	33.00	-6.10E-01	1.60E-01	2.31E-01
			302.84	17.80	1.47E-02		4.01E-01
			356.01	60.00	2.34E-02		1.60E-01
+	@	I-133	529.87	86.30	1.00E+26	1.00E+26	1.00E+26
+		XE-133	81.00	38.00	-3.22E+05	1.22E+05	1.22E+05
+		CS-134	563.23	8.38	-3.95E-02	1.17E-01	1.16E+00
			569.32	15.43	-7.53E-02		5.82E-01
			604.70	97.60	-4.75E-01		1.17E-01
			795.84	85.40	-2.23E-02		1.46E-01
			801.93	8.73	-4.12E-01		1.45E+00
+		CS-135	268.24	16.00	-5.64E-02	4.55E-01	4.55E-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	-3.80E+01	2.13E+01	1.63E+02
			163.89	4.61	-7.41E+01		2.60E+02
			176.55	13.56	1.95E+00		9.12E+01
			273.65	12.66	9.59E+00		1.15E+02
			340.57	48.50	5.02E+00		3.91E+01
			818.50	99.70	-1.45E+01		2.13E+01
			1048.07	79.60	9.46E+00		3.65E+01
			1235.34	19.70	-3.88E+01		1.76E+02
+		CS-137	661.65	85.12	6.01E-02	1.48E-01	1.48E-01
+		LA-138	788.74	34.00	3.20E-02	1.62E-01	3.84E-01
			1435.80	66.00	1.91E-02		1.62E-01
+		CE-139	165.85	80.35	2.08E-02	1.26E-01	1.26E-01
+		BA-140	162.64	6.70	1.02E+01	7.65E+01	2.09E+02
			304.84	4.50	-4.21E+01		3.56E+02
			423.70	3.20	7.50E+01		6.06E+02
			437.55	2.00	3.40E+02		1.00E+03
			537.32	25.00	1.83E+01		7.65E+01
+		LA-140	328.77	20.50	7.06E+01	3.48E+01	9.37E+01
			487.03	45.50	2.69E+00		4.22E+01
			815.85	23.50	-5.67E+01		1.04E+02
			1596.49	95.49	6.83E+00		3.48E+01
+		CE-141	145.44	48.40	8.74E-01	1.11E+00	1.11E+00
+	@	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	-5.90E-01	6.62E-01	6.62E-01
+		PM-144	476.78	42.00	-2.03E-02	1.19E-01	2.38E-01
			618.01	98.60	1.50E-02		1.19E-01
			696.49	99.49	-2.21E-02		1.42E-01
+		PM-145	36.85	21.70	-2.12E-01	2.59E-01	4.86E-01

Analysis Report for 1707091-04

HTC-A08-BKGD01-0006-01

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	PM-145	37.36		39.70	-1.13E-01	2.59E-01	2.59E-01
		42.30		15.10	-2.03E-02		6.06E-01
		72.40		2.31	-9.80E+00		3.57E+00
+	PM-146	453.90		39.94	7.32E-02	2.07E-01	2.07E-01
		735.90		14.01	-1.34E-01		8.61E-01
		747.13		13.10	-1.22E-01		8.85E-01
+	ND-147	91.11		28.90	2.22E+02	1.53E+02	1.53E+02
		531.02		13.10	-1.41E+02		3.37E+02
+	PM-149	285.90		3.10	2.14E+13	1.17E+14	1.17E+14
+	EU-152	121.78		20.50	-4.17E-02	2.76E-01	2.76E-01
		244.69		5.40	-4.40E-01		1.38E+00
		344.27		19.13	7.31E-02		3.80E-01
		778.89		9.20	-7.62E-01		1.20E+00
		964.01		10.40	-1.29E-01		1.30E+00
		1085.78		7.22	-1.11E+00		1.89E+00
		1112.02		9.60	-4.34E-01		1.26E+00
		1407.95		14.94	7.07E-02		7.74E-01
+	GD-153	97.43		31.30	9.13E-02	2.61E-01	2.61E-01
		103.18		22.20	-1.32E-02		3.30E-01
+	EU-154	123.07		40.50	-1.33E-02	1.41E-01	1.41E-01
		723.30		19.70	3.37E-01		6.16E-01
		873.19		11.50	-4.89E-01		9.75E-01
		996.32		10.30	-2.99E-01		1.07E+00
		1004.76		17.90	-2.21E-02		7.42E-01
		1274.45		35.50	-9.76E-02		4.20E-01
+	EU-155	86.50	*	30.90	3.06E-01	2.71E-01	4.21E-01
		105.30		20.70	-1.16E-01		2.71E-01
+	EU-156	811.77		10.40	-3.65E+01	1.01E+02	1.01E+02
		1153.47		7.20	4.64E+01		1.90E+02
		1230.71		8.90	-1.70E+00		1.86E+02
+	HO-166M	184.41		72.60	1.61E-01	1.04E-01	1.04E-01
		280.45		29.60	3.00E-02		2.39E-01
		410.94		11.10	2.24E-01		7.26E-01
		711.69		54.10	1.54E-01		2.26E-01
+	TM-171	66.72		0.14	-4.62E+00	5.83E+01	5.83E+01
+	HF-172	67.35		5.31	-1.22E-01	5.67E-01	1.53E+00
		125.81		11.30	1.89E-01		5.67E-01
+	LU-172	181.53		20.60	-1.01E+03	8.02E+03	1.05E+04
		900.72		29.81	-2.28E+03		1.40E+04
		1093.66		62.50	1.14E+03		8.02E+03
+	LU-173	100.72		5.24	-2.06E-01	4.13E-01	1.22E+00
		272.11		21.20	2.36E-01		4.13E-01
+	HF-175	343.40		84.00	4.44E-02	2.31E-01	2.31E-01
+	LU-176	88.34		13.30	-1.38E-01	6.83E-02	5.54E-01
		201.83		86.00	-8.97E-03		7.54E-02
		306.78		94.00	-5.41E-02		6.83E-02
+	HF-181	133.02		41.70	-1.12E-01	5.37E-01	7.21E-01
		345.85		17.20	4.19E-01		2.13E+00
		482.03		82.80	-1.97E-01		5.37E-01

Analysis Report for 1707091-04

HTC-A08-BKGD01-0006-01

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	TA-182	67.75		41.20	-2.36E-01	3.16E-01	3.16E-01
		1121.30		34.90	4.30E-01		8.92E-01
		1189.05		16.23	3.76E-01		1.91E+00
		1221.41		26.98	9.41E-02		1.10E+00
		1231.02		11.44	-1.15E-01		2.70E+00
+	IR-192	308.46		29.68	-2.15E-01	4.92E-01	5.79E-01
		468.07		48.10	4.70E-02		4.92E-01
+	HG-203	279.19		77.30	1.53E-01	4.16E-01	4.16E-01
+	TL-204	374.74		94.11	3.34E-02	8.78E-02	8.78E-02
		899.15		99.16	-5.31E-04		1.31E-01
		911.74		91.10	1.87E-01		2.19E-01
+	BI-207	569.67		97.72	-1.09E-02	8.43E-02	8.43E-02
		1063.62		74.90	-6.53E-03		1.80E-01
+	TL-208	583.14	*	30.22	1.07E+00	7.57E-02	3.57E-01
		860.37		4.48	-1.77E+00		2.65E+00
		2614.66	*	35.85	1.37E+00		7.57E-02
+	BI-210M	262.00		45.00	4.05E-02	1.50E-01	1.50E-01
		300.00		23.00	1.04E-01		3.39E-01
+	PB-210	46.50	*	4.25	1.44E+00	2.16E+00	2.16E+00
+	PB-211	404.84		2.90	3.34E-01	2.90E+00	2.90E+00
		831.96		2.90	1.50E+00		4.30E+00
+	BI-212	727.17		11.80	5.12E-01	1.08E+00	1.08E+00
		1620.62		2.75	1.19E+00		4.20E+00
+	PB-212	238.63	*	44.60	1.21E+00	2.50E-01	2.50E-01
		300.09		3.41	7.01E-01		2.28E+00
+	BI-214	609.31	*	46.30	1.09E+00	4.98E-01	4.98E-01
		1120.29		15.10	5.82E-01		1.13E+00
		1764.49	*	15.80	8.71E-01		1.09E+00
		2204.22		4.98	-5.44E-02		3.66E+00
+	PB-214	295.21	*	19.19	1.01E+00	2.97E-01	5.44E-01
		351.92	*	37.19	9.34E-01		2.97E-01
+	RN-219	401.80		6.50	5.93E-01	1.28E+00	1.28E+00
+	RA-223	323.87		3.88	1.74E-01	1.93E+00	1.93E+00
+	RA-224	240.98		3.95	1.19E+01	3.12E+00	3.12E+00
+	RA-225	40.00		31.00	6.96E+00	3.50E+01	3.50E+01
+	RA-226	186.21	*	3.28	3.52E+00	2.92E+00	2.92E+00
+	TH-227	50.10		8.40	-1.54E-01	9.14E-01	9.14E-01
		236.00		11.50	1.41E+00		9.40E-01
		256.20		6.30	1.85E-01		1.07E+00
+	AC-228	338.32	*	11.40	1.53E+00	6.06E-01	1.48E+00
		911.07	*	27.70	9.16E-01		6.06E-01
		969.11	*	16.60	9.94E-01		1.81E+00
+	TH-230	48.44		16.90	2.59E-01	4.83E-01	4.83E-01
		62.85		4.60	1.52E+00		1.70E+00
		67.67		0.37	-1.43E+01		1.91E+01
+	PA-231	283.67		1.60	-6.62E-01	3.05E+00	4.24E+00
		302.67		2.30	1.12E-01		3.05E+00
+	TH-231	25.64		14.70	4.23E-01	1.09E+00	1.59E+00

Analysis Report for 1707091-04

HTC-A08-BKGD01-0006-01

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	TH-231	84.21		6.40	-4.73E-01	1.09E+00	1.09E+00
+	PA-233	311.98		38.60	4.41E-01	2.48E+00	2.48E+00
+	PA-234	131.20		20.40	-6.58E-02	2.83E-01	2.83E-01
		733.99		8.80	8.72E-02		1.37E+00
		946.00		12.00	1.95E-01		9.94E-01
+	PA-234M	1001.03		0.92	-6.60E+00	1.27E+01	1.27E+01
+	TH-234	63.29		3.80	1.83E+00	2.06E+00	2.06E+00
+	U-235	143.76		10.50	1.00E-01	5.80E-01	5.80E-01
		163.35		4.70	6.14E-02		1.26E+00
		205.31		4.70	-1.09E+00		1.39E+00
+	NP-237	86.50	*	12.60	7.23E-01	9.94E-01	9.94E-01
+	NP-239	106.10		22.70	1.02E+10	1.90E+12	1.90E+12
		228.18		10.70	-3.06E+12		4.80E+12
		277.60		14.10	2.68E+12		4.08E+12
+	AM-241	59.54		35.90	-3.87E-02	2.14E-01	2.14E-01
+	AM-243	74.67		66.00	6.96E-01	1.54E-01	1.54E-01
+	CM-243	209.75		3.29	-3.67E-02	5.27E-01	2.08E+00
		228.14		10.60	-3.96E-01		6.21E-01
		277.60		14.00	3.46E-01		5.27E-01

+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction
? = CAUTION: MDA value is inconsistent with Currie MDA at 95% confidence level

NUCLIDE MDA REPORT

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

	Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	BE-7	477.59	10.42	3.02E+00	3.02E+00	9.10E-01	1.42E+00
	NA-22	1274.54	99.94	1.57E-01	1.57E-01	-3.65E-02	7.17E-02
@	NA-24	1368.53	99.99	1.00E+26	1.00E+26	1.00E+26	1.00E+20

Analysis Report for 1707091-04

HTC-A08-BKGD01-0006-01

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
@	NA-24	2754.09		99.86	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	AL-26	1808.65		99.76	1.10E-01	1.10E-01	1.56E-02	4.61E-02
+	K-40	1460.81	*	10.67	1.53E+00	1.53E+00	1.80E+01	6.94E-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	7.51E-02	7.51E-02	-5.61E-02	3.67E-02
		78.34		96.00	1.01E-01		3.62E-01	4.96E-02
	SC-46	889.25		99.98	2.35E-01	2.35E-01	-1.88E-01	1.07E-01
		1120.51		99.99	3.92E-01		2.03E-01	1.83E-01
	V-48	983.52		99.98	9.84E+00	9.84E+00	-6.76E+00	4.51E+00
		1312.10		97.50	1.26E+01		4.18E+00	5.74E+00
	CR-51	320.08		9.83	8.85E+00	8.85E+00	-2.90E+00	4.21E+00
	MN-54	834.83		99.97	1.58E-01	1.58E-01	3.61E-02	7.33E-02
	CO-56	846.75		99.96	2.93E-01	2.93E-01	2.72E-03	1.35E-01
		1037.75		14.03	2.32E+00		-1.58E-01	1.06E+00
		1238.25		67.00	6.64E-01		2.89E-01	3.09E-01
		1771.40		15.51	1.43E+00		1.68E-01	5.76E-01
		2598.48		16.90	1.72E+00		2.39E-02	6.66E-01
	CO-57	122.06		85.51	8.46E-02	8.46E-02	-1.28E-02	4.11E-02
		136.48		10.60	7.01E-01		7.08E-02	3.40E-01
	CO-58	810.76		99.40	3.04E-01	3.04E-01	5.03E-02	1.40E-01
	FE-59	1099.22		56.50	1.18E+00	1.18E+00	-7.44E-03	5.42E-01
		1291.56		43.20	1.53E+00		-7.42E-02	6.93E-01
	CO-60	1173.22		100.00	1.43E-01	1.10E-01	-7.01E-02	6.51E-02
		1332.49		100.00	1.10E-01		8.57E-04	4.79E-02
	ZN-65	1115.52		50.75	4.04E-01	4.04E-01	4.31E-02	1.87E-01
	GA-67	93.31		35.70	4.07E+08	4.07E+08	3.47E+08	1.99E+08
		208.95		2.24	6.37E+09		2.94E+09	3.08E+09
		300.22		16.00	1.00E+09		3.07E+08	4.79E+08
	SE-75	121.11		16.70	5.96E-01	1.75E-01	-4.32E-02	2.89E-01
		136.00		59.20	1.75E-01		6.59E-02	8.52E-02
		264.65		59.80	1.95E-01		-1.55E-02	9.33E-02
		279.53		25.20	5.21E-01		1.03E-01	2.50E-01
		400.65		11.40	1.27E+00		1.69E-01	6.00E-01
	RB-82	776.52		13.00	1.26E+01	1.26E+01	-6.61E+00	5.81E+00
	RB-83	520.41		46.00	3.53E-01	3.53E-01	-2.10E-01	1.62E-01
		529.64		30.30	5.86E-01		-8.84E-02	2.72E-01
		552.65		16.40	1.20E+00		-2.21E-01	5.60E-01
	KR-85	513.99		0.43	2.85E+01	2.85E+01	2.94E+01	1.36E+01
	SR-85	513.99		99.27	3.60E-01	3.60E-01	3.71E-01	1.72E-01
	Y-88	898.02		93.40	2.52E-01	1.83E-01	3.61E-02	1.16E-01
		1836.01		99.38	1.83E-01		3.89E-02	7.38E-02
	MO-93	263.06		56.72	1.16E-01	8.86E-02	-4.52E-02	5.56E-02
		684.67		99.68	1.07E-01		-1.76E-02	4.97E-02
		1477.11		99.08	8.86E-02		-2.72E-02	3.68E-02
	NB-93M	16.57		9.43	8.23E+00	8.23E+00	1.63E+01	3.99E+00
	NB-94	702.63		100.00	1.12E-01	1.12E-01	-3.88E-02	5.24E-02
		871.10		100.00	1.17E-01		-2.09E-02	5.38E-02
	NB-95	765.79		99.81	8.77E-01	8.77E-01	-2.45E-02	4.08E-01
	NB-95M	235.69		25.00	1.11E+08	1.11E+08	1.68E+08	5.44E+07
	ZR-95	724.18		43.70	8.11E-01	5.85E-01	4.44E-01	3.79E-01
		756.72		55.30	5.85E-01		-7.44E-02	2.71E-01
	MO-99	181.06		6.20	1.10E+11	9.87E+10	-1.07E+10	5.33E+10
		739.58		12.80	9.87E+10		1.58E+10	4.59E+10

Analysis Report for 1707091-04

HTC-A08-BKGD01-0006-01

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	MO-99	778.00		4.50	2.69E+11	9.87E+10	-8.95E+10	1.24E+11
	RU-103	497.08		89.00	5.42E-01	5.42E-01	-3.95E-01	2.53E-01
	RU-106	621.84		9.80	1.11E+00	1.11E+00	1.41E-01	5.14E-01
	AG-108M	433.93		89.90	9.22E-02	9.22E-02	-2.63E-02	4.35E-02
		614.37		90.40	1.09E-01		-3.79E-01	5.06E-02
		722.95		90.50	1.22E-01		-1.96E-03	5.67E-02
+	CD-109	88.03	*	3.72	3.91E+00	3.91E+00	2.85E+00	1.93E+00
	AG-110M	657.75		93.14	1.61E-01	1.61E-01	4.43E-02	7.56E-02
		677.61		10.53	1.23E+00		-4.63E-01	5.69E-01
		706.67		16.46	8.81E-01		-6.77E-02	4.10E-01
		763.93		21.98	7.10E-01		2.10E-01	3.30E-01
		884.67		71.63	2.19E-01		3.46E-02	1.01E-01
		1384.27		23.94	6.52E-01		8.36E-02	2.88E-01
	CD-113M	263.70		0.02	2.76E+02	2.76E+02	-1.72E+02	1.32E+02
	SN-113	255.12		1.93	6.19E+00	2.33E-01	-3.24E+00	2.97E+00
		391.69		64.90	2.33E-01		1.63E-01	1.10E-01
	TE123M	159.00		84.10	1.26E-01	1.26E-01	-3.43E-02	6.09E-02
	SB-124	602.71		97.87	3.07E-01	3.07E-01	-5.82E-03	1.43E-01
		645.85		7.26	4.63E+00		2.91E+00	2.16E+00
		722.78		11.10	3.17E+00		-5.11E-02	1.48E+00
		1691.02		49.00	7.00E-01		-1.88E-02	2.96E-01
	I-125	35.49		6.49	5.41E+00	5.41E+00	-1.77E+00	2.63E+00
	SB-125	176.33		6.89	9.59E-01	2.93E-01	2.75E-01	4.64E-01
		427.89		29.33	2.93E-01		-6.88E-02	1.38E-01
		463.38		10.35	9.30E-01		-1.68E-01	4.39E-01
		600.56		17.80	5.77E-01		2.55E-01	2.69E-01
		635.90		11.32	8.48E-01		-8.36E-02	3.91E-01
	SB-126	414.70		83.30	2.50E+01	2.50E+01	-6.53E+00	1.17E+01
		666.33		99.60	3.34E+01		-1.63E+01	1.57E+01
		695.00		99.60	3.34E+01		7.81E+00	1.56E+01
		720.50		53.80	5.12E+01		-1.15E+01	2.36E+01
+	SN-126	87.57	*	37.00	3.38E-01	3.38E-01	2.46E-01	1.67E-01
	SB-127	473.00		25.00	2.45E+07	2.27E+07	-9.07E+06	1.14E+07
		685.20		35.70	2.27E+07		-3.72E+06	1.05E+07
		783.80		14.70	7.03E+07		2.35E+07	3.30E+07
	I-129	29.78		57.00	2.73E-01	2.73E-01	-5.60E-02	1.33E-01
		33.60		13.20	8.97E-01		-5.85E-01	4.35E-01
		39.58		7.52	1.30E+00		2.59E-01	6.33E-01
	I-131	284.30		6.05	6.72E+03	5.51E+02	-1.05E+03	3.21E+03
		364.48		81.20	5.51E+02		1.99E+02	2.61E+02
		636.97		7.26	7.87E+03		4.01E+03	3.65E+03
		722.89		1.80	3.67E+04		-5.90E+02	1.70E+04
	TE-132	49.72		13.10	1.23E+09	1.55E+08	-2.08E+08	6.01E+08
		228.16		88.00	1.55E+08		-9.89E+07	7.47E+07
	BA-133	81.00		33.00	2.31E-01	1.60E-01	-6.10E-01	1.13E-01
		302.84		17.80	4.01E-01		1.47E-02	1.91E-01
		356.01		60.00	1.60E-01		2.34E-02	7.67E-02
	@ I-133	529.87		86.30	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	XE-133	81.00		38.00	1.22E+05	1.22E+05	-3.22E+05	5.98E+04
	CS-134	563.23		8.38	1.16E+00	1.17E-01	-3.95E-02	5.41E-01
		569.32		15.43	5.82E-01		-7.53E-02	2.69E-01
		604.70		97.60	1.17E-01		-4.75E-01	5.48E-02
		795.84		85.40	1.46E-01		-2.23E-02	6.76E-02

Analysis Report for 1707091-04

HTC-A08-BKGD01-0006-01

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
CS-134	801.93	8.73	1.45E+00	1.17E-01	-4.12E-01	6.73E-01
CS-135	268.24	16.00	4.55E-01	4.55E-01	-5.64E-02	2.19E-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	1.63E+02	2.13E+01	-3.80E+01	7.90E+01
	163.89	4.61	2.60E+02		-7.41E+01	1.26E+02
	176.55	13.56	9.12E+01		1.95E+00	4.41E+01
	273.65	12.66	1.15E+02		9.59E+00	5.53E+01
	340.57	48.50	3.91E+01		5.02E+00	1.88E+01
	818.50	99.70	2.13E+01		-1.45E+01	9.77E+00
	1048.07	79.60	3.65E+01		9.46E+00	1.69E+01
	1235.34	19.70	1.76E+02		-3.88E+01	8.18E+01
CS-137	661.65	85.12	1.48E-01	1.48E-01	6.01E-02	6.96E-02
LA-138	788.74	34.00	3.84E-01	1.62E-01	3.20E-02	1.79E-01
	1435.80	66.00	1.62E-01		1.91E-02	6.99E-02
CE-139	165.85	80.35	1.26E-01	1.26E-01	2.08E-02	6.10E-02
BA-140	162.64	6.70	2.09E+02	7.65E+01	1.02E+01	1.01E+02
	304.84	4.50	3.56E+02		-4.21E+01	1.69E+02
	423.70	3.20	6.06E+02		7.50E+01	2.86E+02
	437.55	2.00	1.00E+03		3.40E+02	4.74E+02
	537.32	25.00	7.65E+01		1.83E+01	3.55E+01
LA-140	328.77	20.50	9.37E+01	3.48E+01	7.06E+01	4.48E+01
	487.03	45.50	4.22E+01		2.69E+00	1.97E+01
	815.85	23.50	1.04E+02		-5.67E+01	4.76E+01
	1596.49	95.49	3.48E+01		6.83E+00	1.54E+01
CE-141	145.44	48.40	1.11E+00	1.11E+00	8.74E-01	5.38E-01
@ CE-143	57.36	11.80	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	293.26	42.00	1.00E+26		1.00E+26	1.00E+20
@	664.55	5.20	1.00E+26		1.00E+26	1.00E+20
CE-144	133.54	10.80	6.62E-01	6.62E-01	-5.90E-01	3.21E-01
PM-144	476.78	42.00	2.38E-01	1.19E-01	-2.03E-02	1.12E-01
	618.01	98.60	1.19E-01		1.50E-02	5.52E-02
	696.49	99.49	1.42E-01		-2.21E-02	6.66E-02
PM-145	36.85	21.70	4.86E-01	2.59E-01	-2.12E-01	2.36E-01
	37.36	39.70	2.59E-01		-1.13E-01	1.26E-01
	42.30	15.10	6.06E-01		-2.03E-02	2.95E-01
	72.40	2.31	3.57E+00		-9.80E+00	1.75E+00
PM-146	453.90	39.94	2.07E-01	2.07E-01	7.32E-02	9.71E-02
	735.90	14.01	8.61E-01		-1.34E-01	4.01E-01
	747.13	13.10	8.85E-01		-1.22E-01	4.11E-01
ND-147	91.11	28.90	1.53E+02	1.53E+02	2.22E+02	7.50E+01
	531.02	13.10	3.37E+02		-1.41E+02	1.56E+02
PM-149	285.90	3.10	1.17E+14	1.17E+14	2.14E+13	5.57E+13
EU-152	121.78	20.50	2.76E-01	2.76E-01	-4.17E-02	1.34E-01
	244.69	5.40	1.38E+00		-4.40E-01	6.63E-01
	344.27	19.13	3.80E-01		7.31E-02	1.80E-01
	778.89	9.20	1.20E+00		-7.62E-01	5.52E-01
	964.01	10.40	1.30E+00		-1.29E-01	5.99E-01
	1085.78	7.22	1.89E+00		-1.11E+00	8.67E-01
	1112.02	9.60	1.26E+00		-4.34E-01	5.70E-01
	1407.95	14.94	7.74E-01		7.07E-02	3.39E-01
GD-153	97.43	31.30	2.61E-01	2.61E-01	9.13E-02	1.27E-01

Analysis Report for 1707091-04

HTC-A08-BKGD01-0006-01

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	GD-153	103.18		22.20	3.30E-01	2.61E-01	-1.32E-02	1.60E-01
	EU-154	123.07		40.50	1.41E-01	1.41E-01	-1.33E-02	6.83E-02
		723.30		19.70	6.16E-01		3.37E-01	2.88E-01
		873.19		11.50	9.75E-01		-4.89E-01	4.47E-01
		996.32		10.30	1.07E+00		-2.99E-01	4.86E-01
		1004.76		17.90	7.42E-01		-2.21E-02	3.41E-01
		1274.45		35.50	4.20E-01		-9.76E-02	1.92E-01
+	EU-155	86.50	*	30.90	4.21E-01	2.71E-01	3.06E-01	2.08E-01
		105.30		20.70	2.71E-01		-1.16E-01	1.32E-01
	EU-156	811.77		10.40	1.01E+02	1.01E+02	-3.65E+01	4.62E+01
		1153.47		7.20	1.90E+02		4.64E+01	8.69E+01
		1230.71		8.90	1.86E+02		-1.70E+00	8.62E+01
	HO-166M	184.41		72.60	1.04E-01	1.04E-01	1.61E-01	5.07E-02
		280.45		29.60	2.39E-01		3.00E-02	1.15E-01
		410.94		11.10	7.26E-01		2.24E-01	3.43E-01
		711.69		54.10	2.26E-01		1.54E-01	1.06E-01
	TM-171	66.72		0.14	5.83E+01	5.83E+01	-4.62E+00	2.85E+01
	HF-172	67.35		5.31	1.53E+00	5.67E-01	-1.22E-01	7.51E-01
		125.81		11.30	5.67E-01		1.89E-01	2.76E-01
	LU-172	181.53		20.60	1.05E+04	8.02E+03	-1.01E+03	5.08E+03
		900.72		29.81	1.40E+04		-2.28E+03	6.47E+03
		1093.66		62.50	8.02E+03		1.14E+03	3.70E+03
	LU-173	100.72		5.24	1.22E+00	4.13E-01	-2.06E-01	5.92E-01
		272.11		21.20	4.13E-01		2.36E-01	1.99E-01
	HF-175	343.40		84.00	2.31E-01	2.31E-01	4.44E-02	1.10E-01
	LU-176	88.34		13.30	5.54E-01	6.83E-02	-1.38E-01	2.71E-01
		201.83		86.00	7.54E-02		-8.97E-03	3.64E-02
		306.78		94.00	6.83E-02		-5.41E-02	3.24E-02
	HF-181	133.02		41.70	7.21E-01	5.37E-01	-1.12E-01	3.50E-01
		345.85		17.20	2.13E+00		4.19E-01	1.01E+00
		482.03		82.80	5.37E-01		-1.97E-01	2.52E-01
	TA-182	67.75		41.20	3.16E-01	3.16E-01	-2.36E-01	1.55E-01
		1121.30		34.90	8.92E-01		4.30E-01	4.16E-01
		1189.05		16.23	1.91E+00		3.76E-01	8.87E-01
		1221.41		26.98	1.10E+00		9.41E-02	5.06E-01
		1231.02		11.44	2.70E+00		-1.15E-01	1.25E+00
	IR-192	308.46		29.68	5.79E-01	4.92E-01	-2.15E-01	2.75E-01
		468.07		48.10	4.92E-01		4.70E-02	2.33E-01
	HG-203	279.19		77.30	4.16E-01	4.16E-01	1.53E-01	1.99E-01
	TL-204	374.74		94.11	8.78E-02	8.78E-02	3.34E-02	4.16E-02
		899.15		99.16	1.31E-01		-5.31E-04	6.06E-02
		911.74		91.10	2.19E-01		1.87E-01	1.04E-01
	BI-207	569.67		97.72	8.43E-02	8.43E-02	-1.09E-02	3.90E-02
		1063.62		74.90	1.80E-01		-6.53E-03	8.24E-02
+	TL-208	583.14	*	30.22	3.57E-01	7.57E-02	1.07E+00	1.68E-01
		860.37		4.48	2.65E+00		-1.77E+00	1.22E+00
		2614.66	*	35.85	7.57E-02		1.37E+00	0.00E+00
	BI-210M	262.00		45.00	1.50E-01	1.50E-01	4.05E-02	7.21E-02
		300.00		23.00	3.39E-01		1.04E-01	1.62E-01
+	PB-210	46.50	*	4.25	2.16E+00	2.16E+00	1.44E+00	1.06E+00
	PB-211	404.84		2.90	2.90E+00	2.90E+00	3.34E-01	1.37E+00
		831.96		2.90	4.30E+00		1.50E+00	2.00E+00
	BI-212	727.17		11.80	1.08E+00	1.08E+00	5.12E-01	5.06E-01

Analysis Report for 1707091-04

HTC-A08-BKGD01-0006-01

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	BI-212	1620.62		2.75	4.20E+00	1.08E+00	1.19E+00	1.81E+00
+	PB-212	238.63	*	44.60	2.50E-01	2.50E-01	1.21E+00	1.22E-01
		300.09		3.41	2.28E+00		7.01E-01	1.10E+00
+	BI-214	609.31	*	46.30	4.98E-01	4.98E-01	1.09E+00	2.42E-01
		1120.29		15.10	1.13E+00		5.82E-01	5.25E-01
		1764.49	*	15.80	1.09E+00		8.71E-01	4.91E-01
		2204.22		4.98	3.66E+00		-5.44E-02	1.61E+00
+	PB-214	295.21	*	19.19	5.44E-01	2.97E-01	1.01E+00	2.64E-01
		351.92	*	37.19	2.97E-01		9.34E-01	1.44E-01
	RN-219	401.80		6.50	1.28E+00	1.28E+00	5.93E-01	6.08E-01
	RA-223	323.87		3.88	1.93E+00	1.93E+00	1.74E-01	9.20E-01
	RA-224	240.98		3.95	3.12E+00	3.12E+00	1.19E+01	1.53E+00
	RA-225	40.00		31.00	3.50E+01	3.50E+01	6.96E+00	1.70E+01
+	RA-226	186.21	*	3.28	2.92E+00	2.92E+00	3.52E+00	1.43E+00
	TH-227	50.10		8.40	9.14E-01	9.14E-01	-1.54E-01	4.45E-01
		236.00		11.50	9.40E-01		1.41E+00	4.59E-01
		256.20		6.30	1.07E+00		1.85E-01	5.12E-01
+	AC-228	338.32	*	11.40	1.48E+00	6.06E-01	1.53E+00	7.24E-01
		911.07	*	27.70	6.06E-01		9.16E-01	2.86E-01
		969.11	*	16.60	1.81E+00		9.94E-01	8.73E-01
	TH-230	48.44		16.90	4.83E-01	4.83E-01	2.59E-01	2.35E-01
		62.85		4.60	1.70E+00		1.52E+00	8.35E-01
		67.67		0.37	1.91E+01		-1.43E+01	9.36E+00
	PA-231	283.67		1.60	4.24E+00	3.05E+00	-6.62E-01	2.02E+00
		302.67		2.30	3.05E+00		1.12E-01	1.45E+00
	TH-231	25.64		14.70	1.59E+00	1.09E+00	4.23E-01	7.74E-01
		84.21		6.40	1.09E+00		-4.73E-01	5.33E-01
	PA-233	311.98		38.60	2.48E+00	2.48E+00	4.41E-01	1.18E+00
	PA-234	131.20		20.40	2.83E-01	2.83E-01	-6.58E-02	1.38E-01
		733.99		8.80	1.37E+00		8.72E-02	6.39E-01
		946.00		12.00	9.94E-01		1.95E-01	4.56E-01
	PA-234M	1001.03		0.92	1.27E+01	1.27E+01	-6.60E+00	5.77E+00
	TH-234	63.29		3.80	2.06E+00	2.06E+00	1.83E+00	1.01E+00
	U-235	143.76		10.50	5.80E-01	5.80E-01	1.00E-01	2.82E-01
		163.35		4.70	1.26E+00		6.14E-02	6.12E-01
		205.31		4.70	1.39E+00		-1.09E+00	6.73E-01
+	NP-237	86.50	*	12.60	9.94E-01	9.94E-01	7.23E-01	4.91E-01
	NP-239	106.10		22.70	1.90E+12	1.90E+12	1.02E+10	9.23E+11
		228.18		10.70	4.80E+12		-3.06E+12	2.31E+12
		277.60		14.10	4.08E+12		2.68E+12	1.96E+12
	AM-241	59.54		35.90	2.14E-01	2.14E-01	-3.87E-02	1.05E-01
	AM-243	74.67		66.00	1.54E-01	1.54E-01	6.96E-01	7.60E-02
	CM-243	209.75		3.29	2.08E+00	5.27E-01	-3.67E-02	1.01E+00
		228.14		10.60	6.21E-01		-3.96E-01	2.99E-01
		277.60		14.00	5.27E-01		3.46E-01	2.53E-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 1707091-04

HTC-A08-BKGD01-0006-01

No Action Level results available for reporting purposes.

DATA REVIEW COMMENTS REPORT

Creation Date	Comment	User

No Data Review Comments Entered.

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

Sample Title: HTC-A08-BKGD01-0006-01

Elapsed Live time: 3600
Elapsed Real Time: 3613

Channel								
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	20	83
17:	87	80	75	57	68	70	71	67
25:	64	60	65	44	60	54	63	46
33:	51	57	42	56	64	72	57	65
41:	75	55	57	81	92	103	60	64
49:	69	57	64	83	86	71	86	70
57:	81	96	94	81	105	151	144	97
65:	88	92	97	109	91	93	110	112
73:	187	238	272	320	265	129	75	81
81:	90	84	110	98	117	149	134	109
89:	119	92	122	157	135	73	56	76
97:	70	77	64	61	60	63	52	66
105:	67	60	48	72	63	60	50	58
113:	64	67	52	59	55	67	65	56
121:	45	57	55	58	62	61	51	77
129:	74	45	47	67	43	55	66	47
137:	63	49	58	50	50	62	69	73
145:	49	52	54	60	60	36	52	42
153:	61	64	45	64	41	43	57	40
161:	41	39	46	47	54	51	46	50
169:	55	44	47	42	50	38	43	50
177:	44	44	34	41	43	44	55	54
185:	97	103	45	43	45	37	51	44
193:	43	35	38	37	46	43	43	35
201:	27	47	37	43	49	31	38	59
209:	50	37	34	35	35	39	44	36
217:	40	33	36	36	34	37	41	29
225:	35	30	38	35	22	34	39	37
233:	25	40	42	55	150	239	124	75
241:	74	52	23	32	27	19	19	31
249:	23	28	24	19	25	25	25	31
257:	28	35	33	16	20	31	24	23
265:	18	21	27	25	52	36	28	30
273:	12	32	13	38	28	29	24	27
281:	21	21	24	29	16	17	26	17
289:	17	17	29	24	37	81	75	42
297:	26	18	28	24	20	26	20	16
305:	11	13	26	19	12	25	20	29
313:	18	20	22	15	17	17	18	24
321:	23	13	23	18	23	20	36	36
329:	13	21	16	13	16	13	16	35
337:	51	60	29	19	8	15	23	17
345:	13	20	10	12	28	74	118	79
353:	31	19	13	16	14	18	11	11
361:	15	13	13	17	18	19	16	17

369:	13	20	19	13	14	22	9	19

Sample Title: HTC-A08-BKGD01-0006-01

Channel								
377:	20	15	8	14	18	15	16	17
385:	23	12	10	15	19	22	15	13
393:	14	18	13	10	11	16	13	17
401:	14	15	20	18	15	14	17	14
409:	17	11	13	18	10	10	11	9
417:	11	15	11	11	18	9	24	13
425:	9	13	15	11	17	13	11	15
433:	11	14	15	15	15	18	9	11
441:	10	11	20	14	15	10	7	9
449:	12	14	9	9	10	14	17	6
457:	7	9	11	11	14	26	12	13
465:	9	12	18	19	14	15	14	4
473:	7	5	12	18	14	9	11	12
481:	15	11	11	11	13	11	8	9
489:	7	7	8	10	16	8	8	12
497:	8	9	7	18	16	12	15	6
505:	11	7	11	18	30	42	36	21
513:	18	15	5	10	10	6	10	5
521:	6	5	5	10	13	10	9	7
529:	9	12	4	4	5	9	7	7
537:	6	8	10	9	8	9	11	6
545:	10	7	12	12	7	10	8	10
553:	11	8	9	7	10	11	10	5
561:	11	8	15	7	6	7	9	8
569:	4	7	11	5	12	6	10	11
577:	11	8	4	11	25	52	55	23
585:	11	7	5	7	4	5	6	8
593:	12	11	7	7	13	13	9	8
601:	8	5	8	10	13	8	23	69
609:	65	45	8	8	12	8	11	4
617:	13	7	10	8	2	11	7	7
625:	6	9	8	9	8	6	7	5
633:	5	3	8	12	7	9	12	5
641:	4	8	12	5	13	10	10	9
649:	4	10	7	5	7	4	5	8
657:	7	6	8	15	16	12	5	13
665:	10	7	12	7	7	8	6	11
673:	11	3	7	4	6	5	8	4
681:	4	4	9	7	7	12	7	5
689:	7	9	9	3	5	19	3	12
697:	9	5	9	7	9	8	6	7
705:	8	6	10	4	8	4	8	14
713:	8	16	4	2	5	4	4	3
721:	5	8	8	7	5	15	14	7
729:	5	10	11	6	9	9	7	1
737:	11	4	6	9	7	9	8	3
745:	4	2	7	10	7	7	5	7
753:	6	10	5	3	3	5	5	8
761:	7	6	2	2	10	11	10	10
769:	4	7	8	5	7	6	1	4
777:	2	8	7	7	9	5	10	10
785:	12	5	11	10	7	4	9	3
793:	9	6	5	6	3	5	6	10

801:	4	2	8	9	6	10	7	4

Sample Title: HTC-A08-BKGD01-0006-01

Channel								
809:	3	3	5	8	5	4	3	3
817:	6	3	3	7	10	2	7	8
825:	8	3	6	4	6	8	9	4
833:	7	6	8	4	5	8	7	5
841:	8	4	3	10	6	3	3	7
849:	7	9	5	5	2	12	7	1
857:	2	3	8	10	7	8	5	5
865:	6	7	4	9	4	3	4	6
873:	3	6	2	10	2	4	8	5
881:	6	7	7	5	2	5	6	3
889:	4	3	2	3	5	7	6	4
897:	5	6	4	7	4	8	5	5
905:	5	6	6	5	15	30	29	20
913:	3	5	6	11	9	9	3	8
921:	4	3	2	5	4	4	7	5
929:	6	4	8	4	8	8	6	4
937:	5	2	5	1	8	5	2	4
945:	1	6	4	6	5	1	8	3
953:	4	6	2	5	3	6	2	4
961:	3	7	1	7	4	9	13	14
969:	18	9	4	3	2	4	3	6
977:	1	7	8	7	5	2	0	5
985:	6	3	5	7	11	0	6	1
993:	2	7	1	3	2	3	7	4
1001:	7	4	1	4	8	6	4	6
1009:	8	2	6	4	4	4	4	8
1017:	3	4	4	3	3	4	7	6
1025:	3	5	6	4	9	1	5	2
1033:	7	1	3	10	2	8	4	2
1041:	7	8	5	4	8	3	7	6
1049:	5	6	6	2	2	0	2	1
1057:	1	1	7	4	4	2	3	3
1065:	1	10	8	1	6	4	5	4
1073:	5	4	3	3	5	3	5	5
1081:	6	10	3	6	5	4	3	3
1089:	1	6	9	6	5	7	6	2
1097:	7	8	5	3	4	8	0	5
1105:	3	1	1	3	4	6	2	5
1113:	1	5	3	6	3	8	19	11
1121:	7	3	2	5	5	7	6	2
1129:	8	6	4	8	4	3	7	4
1137:	5	1	4	4	5	7	5	6
1145:	7	3	8	3	4	5	6	1
1153:	5	3	5	5	4	2	2	3
1161:	4	3	3	8	5	2	8	5
1169:	6	4	6	4	3	4	3	2
1177:	5	9	6	4	5	4	7	9
1185:	5	9	4	4	5	11	6	5
1193:	7	5	3	5	4	4	5	6
1201:	4	6	8	5	9	3	5	4
1209:	7	5	3	5	7	8	2	5
1217:	5	8	5	6	6	3	7	3
1225:	5	3	8	4	6	7	4	5

1233:	7	7	4	5	10	8	4	8

Sample Title: HTC-A08-BKGD01-0006-01

Channel								
1241:	5	11	4	6	4	7	3	5
1249:	1	11	3	5	6	6	0	4
1257:	1	4	2	2	1	4	6	4
1265:	1	1	4	9	5	5	2	2
1273:	5	3	5	6	2	6	5	3
1281:	3	4	6	5	5	4	0	4
1289:	3	5	4	7	4	2	2	3
1297:	2	3	2	3	2	1	1	2
1305:	7	1	3	9	2	3	5	1
1313:	8	3	6	1	2	4	2	5
1321:	2	1	4	3	3	8	3	2
1329:	2	0	3	0	5	0	4	0
1337:	3	3	1	4	0	3	4	2
1345:	2	2	4	2	2	3	0	5
1353:	2	3	3	3	1	3	1	2
1361:	1	5	2	4	1	4	1	1
1369:	1	1	2	1	2	2	4	0
1377:	0	4	5	4	2	2	1	3
1385:	2	1	2	2	1	2	0	2
1393:	1	2	2	1	1	0	1	1
1401:	0	3	2	1	1	3	4	2
1409:	1	1	3	1	3	5	3	0
1417:	1	3	2	2	2	1	3	3
1425:	0	2	0	2	2	1	0	2
1433:	4	0	2	3	1	0	2	1
1441:	1	1	3	3	2	4	4	2
1449:	2	1	2	1	5	3	3	3
1457:	4	19	56	118	106	50	8	2
1465:	3	0	0	1	2	2	3	0
1473:	2	2	0	1	2	0	0	0
1481:	1	0	3	1	1	1	0	3
1489:	1	1	0	2	3	0	3	2
1497:	1	3	1	1	2	2	2	2
1505:	1	3	1	6	0	1	2	1
1513:	1	1	0	1	2	1	0	4
1521:	2	1	2	1	1	1	0	0
1529:	3	0	3	4	0	0	3	1
1537:	0	3	0	3	2	1	1	1
1545:	3	0	3	0	0	0	0	2
1553:	1	3	1	2	1	3	0	0
1561:	1	0	0	0	0	0	2	0
1569:	2	0	2	1	2	0	1	1
1577:	0	2	2	2	1	2	1	0
1585:	0	1	1	2	3	0	4	4
1593:	7	2	1	0	2	1	3	1
1601:	0	1	0	1	2	0	0	0
1609:	2	2	0	2	0	0	2	1
1617:	1	0	1	2	4	2	0	2
1625:	1	1	1	1	0	2	2	1
1633:	0	3	2	1	1	1	2	0
1641:	0	3	0	0	3	2	1	0
1649:	0	1	0	1	0	1	1	1
1657:	0	1	3	1	3	1	2	1

1665:	1	0	0	0	0	0	1	0

Sample Title: HTC-A08-BKGD01-0006-01

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

2097:	3	1	0	0	1	0	0	3

Sample Title: HTC-A08-BKGD01-0006-01

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

2529:	0	0	0	1	1	0	1	0

Sample Title: HTC-A08-BKGD01-0006-01

Channel								
2537:	1	1	0	0	1	0	0	0
2545:	0	0	0	0	0	0	0	0
2553:	1	0	0	0	0	0	1	0
2561:	1	0	0	0	0	0	0	0
2569:	1	0	0	0	0	1	1	0
2577:	0	0	0	0	0	0	1	0
2585:	0	1	0	0	1	0	0	0
2593:	1	1	0	1	1	1	1	0
2601:	0	0	0	1	0	0	0	0
2609:	0	1	0	1	7	11	21	4
2617:	3	1	0	0	1	1	1	0
2625:	0	0	0	0	0	2	0	0
2633:	1	0	0	0	0	0	2	0
2641:	0	1	0	0	0	0	0	0
2649:	1	0	0	0	0	0	1	0
2657:	0	0	0	0	0	0	0	0
2665:	0	0	1	0	0	0	0	0
2673:	0	1	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	1	1	1	0	0
2705:	0	0	0	0	0	1	0	0
2713:	0	0	0	0	0	0	0	0
2721:	0	0	0	0	0	0	0	0
2729:	0	0	0	0	0	0	0	0
2737:	0	1	0	1	0	1	1	0
2745:	0	0	0	1	0	0	0	0
2753:	0	0	0	1	0	1	0	1
2761:	1	0	0	0	0	0	0	1
2769:	0	0	0	0	1	0	0	0
2777:	0	0	0	0	0	0	0	0
2785:	0	1	0	0	0	1	0	0
2793:	0	0	0	0	0	0	0	0
2801:	0	0	0	0	1	0	1	0
2809:	0	0	0	0	0	0	1	0
2817:	0	0	0	0	1	0	1	0
2825:	0	0	0	0	0	1	1	0
2833:	1	0	0	0	0	0	0	0
2841:	0	0	0	0	2	0	0	0
2849:	0	0	0	0	1	0	1	0
2857:	0	0	0	0	1	0	0	0
2865:	1	0	0	0	0	1	0	0
2873:	0	0	0	1	0	0	0	0
2881:	0	0	0	0	0	0	0	0
2889:	0	0	0	0	0	0	2	1
2897:	0	0	0	0	0	0	0	1
2905:	0	0	0	0	0	0	0	0
2913:	0	0	0	0	0	0	0	0
2921:	0	0	0	0	0	0	0	0
2929:	0	0	0	0	0	0	0	0
2937:	0	0	0	0	0	0	0	0
2945:	0	0	0	0	0	0	0	0
2953:	0	0	0	0	0	2	0	0

2961:	0	0	0	0	0	0	1	0

Sample Title: HTC-A08-BKGD01-0006-01

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

3393:	0	0	0	0	0	1	0	0

Sample Title: HTC-A08-BKGD01-0006-01

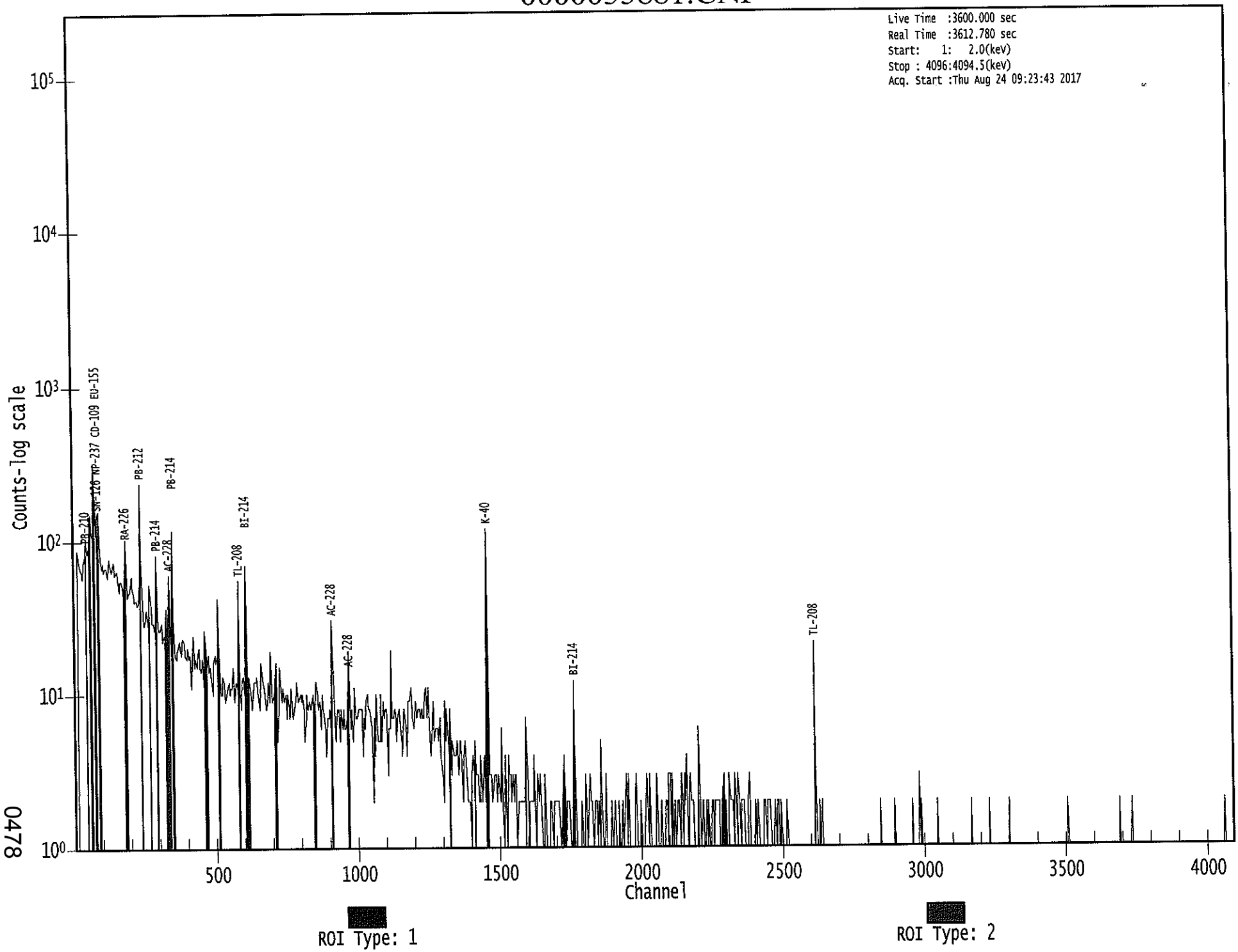
Channel								
3401:	0	0	0	0	0	0	0	0
3409:	0	0	0	1	0	0	0	0
3417:	0	0	0	0	0	0	0	0
3425:	0	0	1	0	1	0	0	0
3433:	0	0	0	0	0	0	0	0
3441:	0	0	0	0	0	0	0	0
3449:	0	0	0	0	0	0	0	0
3457:	0	0	0	0	0	0	0	0
3465:	0	0	1	0	0	0	0	0
3473:	0	0	0	0	0	0	0	0
3481:	0	0	1	0	0	0	1	0
3489:	0	0	0	0	0	0	0	0
3497:	0	0	1	0	0	0	0	0
3505:	1	2	0	1	0	0	0	1
3513:	0	0	1	0	0	0	0	0
3521:	0	1	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	1	0	0	0	0	1
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	1	0
3577:	0	0	0	0	0	0	0	0
3585:	0	0	0	0	0	0	0	0
3593:	0	0	1	0	0	0	0	1
3601:	1	0	0	0	1	0	1	0
3609:	0	0	0	0	0	1	0	1
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	0
3641:	1	0	0	0	0	0	0	0
3649:	0	0	0	1	0	0	0	0
3657:	0	0	0	0	0	0	0	0
3665:	0	0	0	0	0	0	0	0
3673:	0	0	1	0	0	0	0	0
3681:	1	0	1	1	0	0	0	0
3689:	1	2	0	0	0	0	0	0
3697:	0	0	1	0	0	0	0	0
3705:	0	0	0	0	0	0	0	0
3713:	0	0	0	0	0	0	0	0
3721:	0	0	0	0	0	0	0	0
3729:	0	1	0	0	0	2	1	0
3737:	0	0	0	0	0	0	0	0
3745:	0	0	0	0	0	0	0	1
3753:	0	0	0	0	0	0	0	0
3761:	0	0	0	0	0	0	0	1
3769:	0	0	0	0	0	0	0	0
3777:	0	0	0	0	0	0	0	0
3785:	0	0	0	0	0	0	0	0
3793:	0	0	0	0	0	0	0	0
3801:	0	0	0	0	0	0	0	0
3809:	0	0	0	0	0	0	0	0
3817:	0	0	0	0	0	0	1	0

3825:	0	0	0	0	1	1	0	0

Sample Title: HTC-A08-BKGD01-0006-01

Channel								
3833:	1	0	0	0	0	0	1	0
3841:	0	1	0	1	0	0	1	0
3849:	0	0	0	0	0	0	0	0
3857:	1	0	0	0	0	0	0	0
3865:	0	0	0	0	0	0	0	0
3873:	0	0	1	0	0	0	0	0
3881:	0	0	0	0	0	0	0	0
3889:	0	0	0	0	0	0	0	0
3897:	0	0	0	0	0	0	0	0
3905:	0	0	0	1	0	1	0	0
3913:	0	0	0	0	0	0	0	0
3921:	0	0	0	0	0	0	1	0
3929:	0	0	0	0	0	0	0	0
3937:	0	0	0	0	0	0	0	0
3945:	0	0	0	0	0	0	0	0
3953:	0	0	0	0	0	0	0	0
3961:	0	0	0	0	1	0	0	1
3969:	0	0	0	0	0	1	0	0
3977:	0	0	0	0	0	0	0	0
3985:	0	0	0	0	0	0	0	0
3993:	1	0	0	0	0	0	0	1
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	1	0	0
4033:	0	0	0	0	0	1	0	0
4041:	0	0	0	0	0	0	0	0
4049:	0	0	0	0	0	0	0	0
4057:	0	1	0	0	0	2	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

0000055881.CNF



0478

Apex-Gamma

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Analysis Report for 1707091-07

HTC-A08-BKGD01-1218-01

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 1707091-07
Sample Description	: HTC-A08-BKGD01-1218-01
Sample Type	: SOIL
Sample Size	: 6.600E+02 grams
Facility	: Countroom
Sample Taken On	: 5/15/2017 12:49:12PM
Acquisition Started	: 8/24/2017 8:38:25AM
Procedure	: GAS-1602 pCi
Operator	: Administrator
Detector Name	: GE3
Geometry	: GAS-1602
Live Time	: 3600.0 seconds
Real Time	: 3608.0 seconds
Dead Time	: 0.22 %
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	: 1/14/2017
Efficiency Calibration Used Done On	: 1/14/2017
Efficiency Calibration Description	:
Sample Number	: 55878

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

Analysis Report for 1707091-07

HTC-A08-BKGD01-1218-01

PEAK LOCATE REPORT

Peak Locate Performed on : 8/24/2017 9:38:34AM
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	76.40	76.71	0.0000	0.00
2	87.01	87.31	0.0000	0.00
3	93.25	93.54	0.0000	0.00
4	129.22	129.50	0.0000	0.00
5	208.85	209.11	0.0000	0.00
6	238.97	239.21	0.0000	0.00
7	242.19	242.44	0.0000	0.00
8	270.55	270.78	0.0000	0.00
9	278.62	278.86	0.0000	0.00
10	295.32	295.55	0.0000	0.00
11	300.79	301.01	0.0000	0.00
12	328.37	328.58	0.0000	0.00
13	338.47	338.69	0.0000	0.00
14	352.10	352.31	0.0000	0.00
15	463.05	463.22	0.0000	0.00
16	476.25	476.42	0.0000	0.00
17	493.22	493.38	0.0000	0.00
18	510.81	510.97	0.0000	0.00
19	583.72	583.85	0.0000	0.00
20	609.79	609.91	0.0000	0.00
21	665.96	666.06	0.0000	0.00
22	727.92	728.01	0.0000	0.00
23	770.23	770.30	0.0000	0.00
24	836.85	836.90	0.0000	0.00
25	911.50	911.52	0.0000	0.00
26	969.78	969.78	0.0000	0.00
27	1005.14	1005.13	0.0000	0.00
28	1091.04	1091.00	0.0000	0.00
29	1095.01	1094.97	0.0000	0.00
30	1109.75	1109.70	0.0000	0.00
31	1120.92	1120.87	0.0000	0.00
32	1377.22	1377.08	0.0000	0.00
33	1461.15	1460.98	0.0000	0.00
34	1629.52	1629.30	0.0000	0.00
35	1662.19	1661.96	0.0000	0.00
36	1729.16	1728.90	0.0000	0.00
37	1764.59	1764.33	0.0000	0.00
38	2074.79	2074.41	0.0000	0.00
39	2104.27	2103.89	0.0000	0.00
40	2205.75	2205.33	0.0000	0.00
41	2296.92	2296.48	0.0000	0.00
42	2372.71	2372.23	0.0000	0.00

Analysis Report for 1707091-07

HTC-A08-BKGD01-1218-01

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
43	2614.94	2614.38	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1707091-07

HTC-A08-BKGD01-1218-01

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 8/24/2017 9:38:34AM

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

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
	1	76.40	71 -	82	76.71	1.11E+03	171.70	3.11E+03	3.89
	2	87.01	83 -	91	87.31	1.88E+02	126.24	2.35E+03	2.08
	3	93.25	91 -	97	93.54	1.78E+02	97.37	1.51E+03	2.07
	4	129.22	125 -	133	129.50	8.87E+01	99.43	1.46E+03	3.20
	5	208.85	204 -	213	209.11	1.36E+02	83.60	9.09E+02	4.09
M	6	238.97	235 -	247	239.21	7.85E+02	81.50	5.48E+02	2.26
m	7	242.19	235 -	247	242.44	1.57E+02	78.63	4.77E+02	2.27
	8	270.55	266 -	275	270.78	8.64E+01	67.93	6.09E+02	2.03
	9	278.62	277 -	281	278.86	3.09E+01	37.23	2.78E+02	2.54
	10	295.32	292 -	298	295.55	1.78E+02	53.74	3.97E+02	2.23
	11	300.79	299 -	304	301.01	4.71E+01	43.34	3.32E+02	1.52
	12	328.37	326 -	332	328.58	6.47E+01	44.75	3.21E+02	2.91
	13	338.47	334 -	342	338.69	1.43E+02	59.03	4.45E+02	2.33
	14	352.10	346 -	358	352.31	3.83E+02	77.15	5.19E+02	2.29
	15	463.05	458 -	467	463.22	5.75E+01	44.84	2.53E+02	2.06
	16	476.25	474 -	479	476.42	3.42E+01	26.89	1.18E+02	3.74
	17	493.22	490 -	497	493.38	4.94E+01	32.62	1.45E+02	4.86
	18	510.81	506 -	515	510.97	1.41E+02	46.23	2.24E+02	2.50
	19	583.72	579 -	588	583.85	2.34E+02	47.91	1.93E+02	2.12
	20	609.79	604 -	615	609.91	2.55E+02	55.53	2.58E+02	2.15
	21	665.96	662 -	670	666.06	3.43E+01	31.29	1.27E+02	1.57
	22	727.92	724 -	730	728.01	5.14E+01	31.79	1.45E+02	2.22
	23	770.23	765 -	776	770.30	3.07E+01	36.99	1.55E+02	6.48
	24	836.85	834 -	839	836.90	1.72E+01	22.38	8.57E+01	2.01
	25	911.50	907 -	917	911.52	1.26E+02	38.15	1.29E+02	2.35
	26	969.78	966 -	973	969.78	5.76E+01	34.35	1.55E+02	2.78
	27	1005.14	1001 -	1011	1005.13	3.19E+01	29.27	9.22E+01	6.70
M	28	1091.04	1086 -	1098	1091.00	1.72E+01	21.65	6.46E+01	2.19
m	29	1095.01	1086 -	1098	1094.97	1.53E+01	21.56	7.24E+01	2.92
	30	1109.75	1107 -	1113	1109.70	2.02E+01	20.60	6.17E+01	1.93
	31	1120.92	1113 -	1129	1120.87	8.71E+01	44.19	1.52E+02	3.47
	32	1377.22	1372 -	1381	1377.08	2.76E+01	18.84	3.49E+01	1.64
	33	1461.15	1454 -	1467	1460.98	6.11E+02	51.92	2.76E+01	2.84
	34	1629.52	1627 -	1631	1629.30	1.09E+01	7.37	2.17E+00	1.06
	35	1662.19	1657 -	1665	1661.96	1.05E+01	10.02	9.00E+00	2.80
	36	1729.16	1725 -	1731	1728.90	9.50E+00	8.75	7.00E+00	2.52
	37	1764.59	1759 -	1768	1764.33	3.29E+01	16.49	2.03E+01	2.09
	38	2074.79	2070 -	2077	2074.41	4.93E+00	6.63	4.14E+00	2.72
	39	2104.27	2100 -	2110	2103.89	1.19E+01	13.22	1.83E+01	2.06
	40	2205.75	2200 -	2210	2205.33	1.23E+01	11.34	9.41E+00	5.34

Analysis Report for 1707091-07

HTC-A08-BKGD01-1218-01

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
41	2296.92	2293 -	2299	2296.48	5.29E+00	6.34	3.43E+00	2.69
42	2372.71	2369 -	2375	2372.23	6.50E+00	6.65	3.00E+00	2.16
43	2614.94	2609 -	2618	2614.38	7.10E+01	16.85	0.00E+00	3.15

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

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 8/24/2017 9:38:34AM

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	76.40	71 -	82	1.11E+03	171.70	3.11E+03	1.30E+02
	2	87.01	83 -	91	1.88E+02	126.24	2.35E+03	1.01E+02
	3	93.25	91 -	97	1.78E+02	97.37	1.51E+03	7.70E+01
	4	129.22	125 -	133	8.87E+01	99.43	1.46E+03	8.02E+01
	5	208.85	204 -	213	1.36E+02	83.60	9.09E+02	6.60E+01
M	6	238.97	235 -	247	7.85E+02	81.50	5.48E+02	3.85E+01
m	7	242.19	235 -	247	1.57E+02	78.63	4.77E+02	3.59E+01
	8	270.55	266 -	275	8.64E+01	67.93	6.09E+02	5.37E+01
	9	278.62	277 -	281	3.09E+01	37.23	2.78E+02	2.92E+01
	10	295.32	292 -	298	1.78E+02	53.74	3.97E+02	3.84E+01
	11	300.79	299 -	304	4.71E+01	43.34	3.32E+02	3.38E+01
	12	328.37	326 -	332	6.47E+01	44.75	3.21E+02	3.43E+01
	13	338.47	334 -	342	1.43E+02	59.03	4.45E+02	4.44E+01
	14	352.10	346 -	358	3.83E+02	77.15	5.19E+02	5.46E+01
	15	463.05	458 -	467	5.75E+01	44.84	2.53E+02	3.47E+01
	16	476.25	474 -	479	3.42E+01	26.89	1.18E+02	1.99E+01
	17	493.22	490 -	497	4.94E+01	32.62	1.45E+02	2.42E+01
	18	510.81	506 -	515	1.41E+02	46.23	2.24E+02	3.26E+01
	19	583.72	579 -	588	2.34E+02	47.91	1.93E+02	3.03E+01
	20	609.79	604 -	615	2.55E+02	55.53	2.58E+02	3.74E+01
	21	665.96	662 -	670	3.43E+01	31.29	1.27E+02	2.39E+01
	22	727.92	724 -	730	5.14E+01	31.79	1.45E+02	2.33E+01
	23	770.23	765 -	776	3.07E+01	36.99	1.55E+02	2.90E+01
	24	836.85	834 -	839	1.72E+01	22.38	8.57E+01	1.71E+01

Analysis Report for 1707091-07

HTC-A08-BKGD01-1218-01

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	25	911.50	907 -	917	1.26E+02	38.15	1.29E+02	2.54E+01
	26	969.78	966 -	973	5.76E+01	34.35	1.55E+02	2.53E+01
	27	1005.14	1001 -	1011	3.19E+01	29.27	9.22E+01	2.22E+01
M	28	1091.04	1086 -	1098	1.72E+01	21.65	6.46E+01	1.32E+01
m	29	1095.01	1086 -	1098	1.53E+01	21.56	7.24E+01	1.40E+01
	30	1109.75	1107 -	1113	2.02E+01	20.60	6.17E+01	1.52E+01
	31	1120.92	1113 -	1129	8.71E+01	44.19	1.52E+02	3.29E+01
	32	1377.22	1372 -	1381	2.76E+01	18.84	3.49E+01	1.29E+01
	33	1461.15	1454 -	1467	6.11E+02	51.92	2.76E+01	1.30E+01
	34	1629.52	1627 -	1631	1.09E+01	7.37	2.17E+00	2.67E+00
	35	1662.19	1657 -	1665	1.05E+01	10.02	9.00E+00	6.29E+00
	36	1729.16	1725 -	1731	9.50E+00	8.75	7.00E+00	5.10E+00
	37	1764.59	1759 -	1768	3.29E+01	16.49	2.03E+01	9.75E+00
	38	2074.79	2070 -	2077	4.93E+00	6.63	4.14E+00	4.05E+00
	39	2104.27	2100 -	2110	1.19E+01	13.22	1.83E+01	9.28E+00
	40	2205.75	2200 -	2210	1.23E+01	11.34	9.41E+00	7.32E+00
	41	2296.92	2293 -	2299	5.29E+00	6.34	3.43E+00	3.59E+00
	42	2372.71	2369 -	2375	6.50E+00	6.65	3.00E+00	3.51E+00
	43	2614.94	2609 -	2618	7.10E+01	16.85	0.00E+00	0.00E+00

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

PEAK WITH NID REPORT

Peak Analysis Performed on : 8/24/2017 9:38:34AM

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

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

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
1	76.40	71 -	82	76.71	1.11E+03	171.70	3.11E+03	.....
2	87.01	83 -	91	87.31	1.88E+02	126.24	2.35E+03	NP-237
								EU-155
								SN-126
3	93.25	91 -	97	93.54	1.78E+02	97.37	1.51E+03	GA-67
4	129.22	125 -	133	129.50	8.87E+01	99.43	1.46E+03	.....

Analysis Report for 1707091-07

HTC-A08-BKGD01-1218-01

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	5	208.85	204 -	213	209.11	1.36E+02	83.60	9.09E+02	GA-67 CM-243
M	6	238.97	235 -	247	239.21	7.85E+02	81.50	5.48E+02	PB-212
m	7	242.19	235 -	247	242.44	1.57E+02	78.63	4.77E+02	.....
	8	270.55	266 -	275	270.78	8.64E+01	67.93	6.09E+02	.....
	9	278.62	277 -	281	278.86	3.09E+01	37.23	2.78E+02	HG-203 SE-75
	10	295.32	292 -	298	295.55	1.78E+02	53.74	3.97E+02	PB-214
	11	300.79	299 -	304	301.01	4.71E+01	43.34	3.32E+02	GA-67 PB-212 BI-210M
	12	328.37	326 -	332	328.58	6.47E+01	44.75	3.21E+02	LA-140
	13	338.47	334 -	342	338.69	1.43E+02	59.03	4.45E+02	AC-228
	14	352.10	346 -	358	352.31	3.83E+02	77.15	5.19E+02	PB-214
	15	463.05	458 -	467	463.22	5.75E+01	44.84	2.53E+02	SB-125
	16	476.25	474 -	479	476.42	3.42E+01	26.89	1.18E+02	PM-144
	17	493.22	490 -	497	493.38	4.94E+01	32.62	1.45E+02	.....
	18	510.81	506 -	515	510.97	1.41E+02	46.23	2.24E+02	.....
	19	583.72	579 -	588	583.85	2.34E+02	47.91	1.93E+02	TL-208
	20	609.79	604 -	615	609.91	2.55E+02	55.53	2.58E+02	BI-214
	21	665.96	662 -	670	666.06	3.43E+01	31.29	1.27E+02	SB-126
	22	727.92	724 -	730	728.01	5.14E+01	31.79	1.45E+02	BI-212
	23	770.23	765 -	776	770.30	3.07E+01	36.99	1.55E+02	.....
	24	836.85	834 -	839	836.90	1.72E+01	22.38	8.57E+01	.....
	25	911.50	907 -	917	911.52	1.26E+02	38.15	1.29E+02	TL-204 AC-228
	26	969.78	966 -	973	969.78	5.76E+01	34.35	1.55E+02	AC-228
	27	1005.14	1001 -	1011	1005.13	3.19E+01	29.27	9.22E+01	EU-154
M	28	1091.04	1086 -	1098	1091.00	1.72E+01	21.65	6.46E+01	.....
m	29	1095.01	1086 -	1098	1094.97	1.53E+01	21.56	7.24E+01	.....
	30	1109.75	1107 -	1113	1109.70	2.02E+01	20.60	6.17E+01	.....
	31	1120.92	1113 -	1129	1120.87	8.71E+01	44.19	1.52E+02	TA-182 SC-46 BI-214
	32	1377.22	1372 -	1381	1377.08	2.76E+01	18.84	3.49E+01	.....
	33	1461.15	1454 -	1467	1460.98	6.11E+02	51.92	2.76E+01	K-40
	34	1629.52	1627 -	1631	1629.30	1.09E+01	7.37	2.17E+00	.....
	35	1662.19	1657 -	1665	1661.96	1.05E+01	10.02	9.00E+00	.....
	36	1729.16	1725 -	1731	1728.90	9.50E+00	8.75	7.00E+00	.....
	37	1764.59	1759 -	1768	1764.33	3.29E+01	16.49	2.03E+01	BI-214
	38	2074.79	2070 -	2077	2074.41	4.93E+00	6.63	4.14E+00	.....
	39	2104.27	2100 -	2110	2103.89	1.19E+01	13.22	1.83E+01	.....
	40	2205.75	2200 -	2210	2205.33	1.23E+01	11.34	9.41E+00	.....
	41	2296.92	2293 -	2299	2296.48	5.29E+00	6.34	3.43E+00	.....
	42	2372.71	2369 -	2375	2372.23	6.50E+00	6.65	3.00E+00	.....
	43	2614.94	2609 -	2618	2614.38	7.10E+01	16.85	0.00E+00	TL-208

Analysis Report for 1707091-07

HTC-A08-BKGD01-1218-01

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 : 8/24/2017 9:38:34AM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	76.40	1.11E+03	171.70	2.67E-02	2.04E-03
	2	87.01	1.88E+02	126.24	2.71E-02	2.24E-03
	3	93.25	1.78E+02	97.37	2.71E-02	2.24E-03
	4	129.22	8.87E+01	99.43	2.46E-02	2.04E-03
	5	208.85	1.36E+02	83.60	1.80E-02	1.46E-03
M	6	238.97	7.85E+02	81.50	1.61E-02	1.34E-03
m	7	242.19	1.57E+02	78.63	1.59E-02	1.33E-03
	8	270.55	8.64E+01	67.93	1.45E-02	1.21E-03
	9	278.62	3.09E+01	37.23	1.42E-02	1.18E-03
	10	295.32	1.78E+02	53.74	1.35E-02	1.15E-03
	11	300.79	4.71E+01	43.34	1.33E-02	1.14E-03
	12	328.37	6.47E+01	44.75	1.23E-02	1.08E-03
	13	338.47	1.43E+02	59.03	1.19E-02	1.06E-03
	14	352.10	3.83E+02	77.15	1.15E-02	1.03E-03
	15	463.05	5.75E+01	44.84	9.02E-03	8.58E-04
	16	476.25	3.42E+01	26.89	8.80E-03	8.40E-04
	17	493.22	4.94E+01	32.62	8.52E-03	8.18E-04
	18	510.81	1.41E+02	46.23	8.26E-03	7.95E-04
	19	583.72	2.34E+02	47.91	7.32E-03	6.98E-04
	20	609.79	2.55E+02	55.53	7.04E-03	6.63E-04
	21	665.96	3.43E+01	31.29	6.50E-03	5.91E-04
	22	727.92	5.14E+01	31.79	6.00E-03	5.36E-04
	23	770.23	3.07E+01	36.99	5.71E-03	4.99E-04
	24	836.85	1.72E+01	22.38	5.30E-03	4.40E-04
	25	911.50	1.26E+02	38.15	4.92E-03	3.84E-04
	26	969.78	5.76E+01	34.35	4.66E-03	3.74E-04
	27	1005.14	3.19E+01	29.27	4.52E-03	3.68E-04
M	28	1091.04	1.72E+01	21.65	4.21E-03	3.54E-04
m	29	1095.01	1.53E+01	21.56	4.20E-03	3.54E-04
	30	1109.75	2.02E+01	20.60	4.15E-03	3.51E-04
	31	1120.92	8.71E+01	44.19	4.12E-03	3.49E-04
	32	1377.22	2.76E+01	18.84	3.47E-03	2.88E-04
	33	1461.15	6.11E+02	51.92	3.31E-03	2.75E-04
	34	1629.52	1.09E+01	7.37	3.04E-03	2.48E-04

Analysis Report for 1707091-07

HTC-A08-BKGD01-1218-01

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
35	1662.19	1.05E+01	10.02	2.99E-03	2.43E-04
36	1729.16	9.50E+00	8.75	2.91E-03	2.32E-04
37	1764.59	3.29E+01	16.49	2.87E-03	2.26E-04
38	2074.79	4.93E+00	6.63	2.56E-03	2.15E-04
39	2104.27	1.19E+01	13.22	2.54E-03	2.15E-04
40	2205.75	1.23E+01	11.34	2.46E-03	2.15E-04
41	2296.92	5.29E+00	6.34	2.40E-03	2.15E-04
42	2372.71	6.50E+00	6.65	2.36E-03	2.15E-04
43	2614.94	7.10E+01	16.85	2.24E-03	2.15E-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 : 8/24/2017 9:38:34AM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000055575.CNF

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	1	76.40	1.11E+03	171.70			1.11E+03	1.72E+02
	2	87.01	1.88E+02	126.24			1.88E+02	1.26E+02
	3	93.25	1.78E+02	97.37	7.98E+01	7.31E+00	9.80E+01	9.76E+01
	4	129.22	8.87E+01	99.43			8.87E+01	9.94E+01
	5	208.85	1.36E+02	83.60			1.36E+02	8.36E+01
M	6	238.97	7.85E+02	81.50	1.40E+01	2.71E+00	7.71E+02	8.15E+01
m	7	242.19	1.57E+02	78.63			1.57E+02	7.86E+01
	8	270.55	8.64E+01	67.93			8.64E+01	6.79E+01
	9	278.62	3.09E+01	37.23			3.09E+01	3.72E+01
	10	295.32	1.78E+02	53.74			1.78E+02	5.37E+01
	11	300.79	4.71E+01	43.34			4.71E+01	4.33E+01
	12	328.37	6.47E+01	44.75			6.47E+01	4.47E+01
	13	338.47	1.43E+02	59.03			1.43E+02	5.90E+01
	14	352.10	3.83E+02	77.15	6.53E+00	4.43E+00	3.77E+02	7.73E+01
	15	463.05	5.75E+01	44.84			5.75E+01	4.48E+01
	16	476.25	3.42E+01	26.89			3.42E+01	2.69E+01
	17	493.22	4.94E+01	32.62			4.94E+01	3.26E+01
	18	510.81	1.41E+02	46.23	5.21E+01	4.74E+00	8.89E+01	4.65E+01
	19	583.72	2.34E+02	47.91			2.34E+02	4.79E+01
	20	609.79	2.55E+02	55.53	3.25E+00	2.97E+00	2.52E+02	5.56E+01
	21	665.96	3.43E+01	31.29			3.43E+01	3.13E+01

Analysis Report for 1707091-07

HTC-A08-BKGD01-1218-01

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	22	727.92	5.14E+01	31.79			5.14E+01	3.18E+01
	23	770.23	3.07E+01	36.99			3.07E+01	3.70E+01
	24	836.85	1.72E+01	22.38			1.72E+01	2.24E+01
	25	911.50	1.26E+02	38.15	2.85E+00	2.76E+00	1.23E+02	3.83E+01
	26	969.78	5.76E+01	34.35			5.76E+01	3.44E+01
	27	1005.14	3.19E+01	29.27			3.19E+01	2.93E+01
M	28	1091.04	1.72E+01	21.65			1.72E+01	2.17E+01
m	29	1095.01	1.53E+01	21.56			1.53E+01	2.16E+01
	30	1109.75	2.02E+01	20.60			2.02E+01	2.06E+01
	31	1120.92	8.71E+01	44.19			8.71E+01	4.42E+01
	32	1377.22	2.76E+01	18.84			2.76E+01	1.88E+01
	33	1461.15	6.11E+02	51.92	1.00E+00	1.77E+00	6.10E+02	5.20E+01
	34	1629.52	1.09E+01	7.37			1.09E+01	7.37E+00
	35	1662.19	1.05E+01	10.02			1.05E+01	1.00E+01
	36	1729.16	9.50E+00	8.75			9.50E+00	8.75E+00
	37	1764.59	3.29E+01	16.49			3.29E+01	1.65E+01
	38	2074.79	4.93E+00	6.63			4.93E+00	6.63E+00
	39	2104.27	1.19E+01	13.22			1.19E+01	1.32E+01
	40	2205.75	1.23E+01	11.34			1.23E+01	1.13E+01
	41	2296.92	5.29E+00	6.34			5.29E+00	6.34E+00
	42	2372.71	6.50E+00	6.65			6.50E+00	6.65E+00
	43	2614.94	7.10E+01	16.85	1.86E+00	1.12E+00	6.91E+01	1.69E+01

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

AREA CORRECTION REPORT
REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 8/24/2017 9:38:34AM

Ref. Peak Energy : 0.00 Reference Date :
Peak Ratio : 0.00 Uncertainty : 0.00
Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000055575.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	76.40	1.11E+03	171.70			1.11E+03	1.72E+02
	2	87.01	1.88E+02	126.24			1.88E+02	1.26E+02
	3	93.25	1.78E+02	97.37	7.98E+01	7.31E+00	9.80E+01	9.76E+01
	4	129.22	8.87E+01	99.43			8.87E+01	9.94E+01
	5	208.85	1.36E+02	83.60			1.36E+02	8.36E+01
M	6	238.97	7.85E+02	81.50	1.40E+01	2.71E+00	7.71E+02	8.15E+01

Analysis Report for 1707091-07

HTC-A08-BKGD01-1218-01

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
m	7	242.19	1.57E+02	78.63			1.57E+02	7.86E+01
	8	270.55	8.64E+01	67.93			8.64E+01	6.79E+01
	9	278.62	3.09E+01	37.23			3.09E+01	3.72E+01
	10	295.32	1.78E+02	53.74			1.78E+02	5.37E+01
	11	300.79	4.71E+01	43.34			4.71E+01	4.33E+01
	12	328.37	6.47E+01	44.75			6.47E+01	4.47E+01
	13	338.47	1.43E+02	59.03			1.43E+02	5.90E+01
	14	352.10	3.83E+02	77.15	6.53E+00	4.43E+00	3.77E+02	7.73E+01
	15	463.05	5.75E+01	44.84			5.75E+01	4.48E+01
	16	476.25	3.42E+01	26.89			3.42E+01	2.69E+01
	17	493.22	4.94E+01	32.62			4.94E+01	3.26E+01
	18	510.81	1.41E+02	46.23	5.21E+01	4.74E+00	8.89E+01	4.65E+01
	19	583.72	2.34E+02	47.91			2.34E+02	4.79E+01
	20	609.79	2.55E+02	55.53	3.25E+00	2.97E+00	2.52E+02	5.56E+01
	21	665.96	3.43E+01	31.29			3.43E+01	3.13E+01
	22	727.92	5.14E+01	31.79			5.14E+01	3.18E+01
	23	770.23	3.07E+01	36.99			3.07E+01	3.70E+01
	24	836.85	1.72E+01	22.38			1.72E+01	2.24E+01
	25	911.50	1.26E+02	38.15	2.85E+00	2.76E+00	1.23E+02	3.83E+01
	26	969.78	5.76E+01	34.35			5.76E+01	3.44E+01
	27	1005.14	3.19E+01	29.27			3.19E+01	2.93E+01
M	28	1091.04	1.72E+01	21.65			1.72E+01	2.17E+01
m	29	1095.01	1.53E+01	21.56			1.53E+01	2.16E+01
	30	1109.75	2.02E+01	20.60			2.02E+01	2.06E+01
	31	1120.92	8.71E+01	44.19			8.71E+01	4.42E+01
	32	1377.22	2.76E+01	18.84			2.76E+01	1.88E+01
	33	1461.15	6.11E+02	51.92	1.00E+00	1.77E+00	6.10E+02	5.20E+01
	34	1629.52	1.09E+01	7.37			1.09E+01	7.37E+00
	35	1662.19	1.05E+01	10.02			1.05E+01	1.00E+01
	36	1729.16	9.50E+00	8.75			9.50E+00	8.75E+00
	37	1764.59	3.29E+01	16.49			3.29E+01	1.65E+01
	38	2074.79	4.93E+00	6.63			4.93E+00	6.63E+00
	39	2104.27	1.19E+01	13.22			1.19E+01	1.32E+01
	40	2205.75	1.23E+01	11.34			1.23E+01	1.13E+01
	41	2296.92	5.29E+00	6.34			5.29E+00	6.34E+00
	42	2372.71	6.50E+00	6.65			6.50E+00	6.65E+00
	43	2614.94	7.10E+01	16.85	1.86E+00	1.12E+00	6.91E+01	1.69E+01

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

NUCLIDE IDENTIFICATION REPORT

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

IDENTIFIED NUCLIDES

Analysis Report for 1707091-07

HTC-A08-BKGD01-1218-01

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.982	1460.81	*	10.67	1.97E+01	2.37E+00
SN-126	0.952	87.57	*	37.00	2.13E-01	1.44E-01
EU-155	0.338	86.50	*	30.90	2.65E-01	1.79E-01
		105.30		20.70		
HG-203	0.928	279.19	*	77.30	1.44E-01	1.74E-01
TL-208	0.859	583.14	*	30.22	1.20E+00	2.72E-01
		860.37		4.48		
		2614.66	*	35.85	9.80E-01	2.57E-01
BI-212	0.701	727.17	*	11.80	8.25E-01	5.16E-01
		1620.62		2.75		
PB-212	0.978	238.63	*	44.60	1.22E+00	1.64E-01
		300.09	*	3.41	1.19E+00	1.10E+00
BI-214	0.902	609.31	*	46.30	8.78E-01	2.11E-01
		1120.29	*	15.10	1.60E+00	8.20E-01
		1764.49	*	15.80	8.26E-01	4.20E-01
		2204.22		4.98		
PB-214	0.996	295.21	*	19.19	7.82E-01	2.46E-01
		351.92	*	37.19	9.99E-01	2.24E-01
AC-228	0.964	338.32	*	11.40	1.19E+00	5.04E-01
		911.07	*	27.70	1.02E+00	3.29E-01
		969.11	*	16.60	8.46E-01	5.10E-01
NP-237	0.959	86.50	*	12.60	6.26E-01	4.23E-01

* = Energy line found in the spectrum.
\- = Manually added nuclide.
? = Manually edited nuclide.
Energy Tolerance : 1.000 keV
Nuclide confidence index threshold = 0.30
Errors quoted at 2.000sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 8/24/2017 9:38:34AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
1	76.40	3.07965E-01	7.74		
3	93.25	2.72313E-02	49.80	Tol.	GA-67
4	129.22	2.46339E-02	56.06		
5	208.85	3.78958E-02	30.64	Tol.	GA-67

Analysis Report for 1707091-07

HTC-A08-BKGD01-1218-01

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
						CM-243
m	7	242.19	4.37304E-02	24.97		
	8	270.55	2.40054E-02	39.30		
	12	328.37	1.79630E-02	34.60	Tol.	LA-140
	15	463.05	1.59851E-02	38.96	Tol.	SB-125
	16	476.25	9.50269E-03	39.30	Tol.	PM-144
	17	493.22	1.37341E-02	32.99		
	18	510.81	2.47037E-02	26.13		
	21	665.96	9.52239E-03	45.64		
	23	770.23	8.53652E-03	60.18		
	24	836.85	4.76389E-03	65.26		
	27	1005.14	8.86752E-03	45.84	Tol.	EU-154
M	28	1091.04	4.78270E-03	62.87		
m	29	1095.01	4.24245E-03	70.58		
	30	1109.75	5.59913E-03	51.11		
	32	1377.22	7.65741E-03	34.17		
	34	1629.52	3.03241E-03	33.73		
	35	1662.19	2.91667E-03	47.74		
	36	1729.16	2.63889E-03	46.03		
	38	2074.79	1.36905E-03	67.29		
	39	2104.27	3.29365E-03	55.74	S-Esc	
	40	2205.75	3.41503E-03	46.10		
	41	2296.92	1.46825E-03	60.01		
	42	2372.71	1.80556E-03	51.17	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	0.98	1460.81	*	10.67	1.97E+01	2.37E+00
SN-126	0.95	87.57	*	37.00	2.13E-01	1.44E-01
EU-155	0.33	86.50	*	30.90	2.65E-01	1.79E-01
		105.30		20.70		

Analysis Report for 1707091-07

HTC-A08-BKGD01-1218-01

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
HG-203	0.92	279.19	*	77.30	1.44E-01	1.74E-01
TL-208	0.85	583.14	*	30.22	1.20E+00	2.72E-01
		860.37		4.48		
		2614.66	*	35.85	9.80E-01	2.57E-01
BI-212	0.70	727.17	*	11.80	8.25E-01	5.16E-01
		1620.62		2.75		
PB-212	0.97	238.63	*	44.60	1.22E+00	1.64E-01
		300.09	*	3.41	1.19E+00	1.10E+00
BI-214	0.90	609.31	*	46.30	8.78E-01	2.11E-01
		1120.29	*	15.10	1.60E+00	8.20E-01
		1764.49	*	15.80	8.26E-01	4.20E-01
		2204.22		4.98		
PB-214	0.99	295.21	*	19.19	7.82E-01	2.46E-01
		351.92	*	37.19	9.99E-01	2.24E-01
AC-228	0.96	338.32	*	11.40	1.19E+00	5.04E-01
		911.07	*	27.70	1.02E+00	3.29E-01
		969.11	*	16.60	8.46E-01	5.10E-01
NP-237	0.95	86.50	*	12.60	6.26E-01	4.23E-01

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

INTERFERENCE CORRECTED REPORT

	Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
	K-40	0.982	1.97E+01	2.37E+00	
?	SN-126	0.952	2.13E-01	1.44E-01	
?	EU-155	0.338	2.65E-01	1.79E-01	
	HG-203	0.928	1.44E-01	1.74E-01	
	TL-208	0.859	1.08E+00	1.87E-01	
	BI-212	0.701	8.25E-01	5.16E-01	
	PB-212	0.978	1.22E+00	1.62E-01	
	BI-214	0.902	9.04E-01	1.84E-01	
	PB-214	0.996	9.01E-01	1.65E-01	

Analysis Report for 1707091-07

HTC-A08-BKGD01-1218-01

	Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
	AC-228	0.964	1.02E+00	2.42E-01	
?	NP-237	0.959	6.26E-01	4.23E-01	

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

Errors quoted at 2.000sigma

Analysis Report for 1707091-07

HTC-A08-BKGD01-1218-01

UNIDENTIFIED PEAKS

Peak Locate Performed on : 8/24/2017 9:38:34AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	76.40	3.07965E-01	7.74		
	3	93.25	2.72313E-02	49.80	Tol.	GA-67
	4	129.22	2.46339E-02	56.06		
	5	208.85	3.78958E-02	30.64	Tol.	GA-67
						CM-243
m	7	242.19	4.37304E-02	24.97		
	8	270.55	2.40054E-02	39.30		
	12	328.37	1.79630E-02	34.60	Tol.	LA-140
	15	463.05	1.59851E-02	38.96	Tol.	SB-125
	16	476.25	9.50269E-03	39.30	Tol.	PM-144
	17	493.22	1.37341E-02	32.99		
	18	510.81	2.47037E-02	26.13		
	21	665.96	9.52239E-03	45.64		
	23	770.23	8.53652E-03	60.18		
	24	836.85	4.76389E-03	65.26		
	27	1005.14	8.86752E-03	45.84	Tol.	EU-154
M	28	1091.04	4.78270E-03	62.87		
m	29	1095.01	4.24245E-03	70.58		
	30	1109.75	5.59913E-03	51.11		
	32	1377.22	7.65741E-03	34.17		
	34	1629.52	3.03241E-03	33.73		
	35	1662.19	2.91667E-03	47.74		
	36	1729.16	2.63889E-03	46.03		
	38	2074.79	1.36905E-03	67.29		
	39	2104.27	3.29365E-03	55.74	S-Esc	
	40	2205.75	3.41503E-03	46.10		
	41	2296.92	1.46825E-03	60.01		
	42	2372.71	1.80556E-03	51.17	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 1707091-07

HTC-A08-BKGD01-1218-01

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	-2.88E-01	2.37E+00	2.37E+00
+		NA-22	1274.54		99.94	3.60E-02	1.09E-01	1.09E-01
+	@	NA-24	1368.53		99.99	1.00E+26	1.00E+26	1.00E+26
	@		2754.09		99.86	1.00E+26		1.00E+26
+		AL-26	1808.65		99.76	-3.11E-02	4.36E-02	4.36E-02
+		K-40	1460.81	*	10.67	1.97E+01	9.39E-01	9.39E-01
+	@	AR-41	1293.64		99.16	1.00E+26	1.00E+26	1.00E+26
+		TI-44	67.88		94.40	1.92E-02	6.09E-02	6.09E-02
			78.34		96.00	1.87E-01		7.49E-02
+		SC-46	889.25		99.98	-1.43E-02	1.71E-01	1.71E-01
			1120.51		99.99	1.80E-01		2.98E-01
+		V-48	983.52		99.98	-2.50E+00	6.39E+00	6.39E+00
			1312.10		97.50	6.01E-01		7.88E+00
+		CR-51	320.08		9.83	-5.89E-02	7.91E+00	7.91E+00
+		MN-54	834.83		99.97	1.52E-02	1.16E-01	1.16E-01
+		CO-56	846.75		99.96	3.73E-02	2.01E-01	2.01E-01
			1037.75		14.03	6.27E-01		1.58E+00
			1238.25		67.00	1.43E-01		4.66E-01
			1771.40		15.51	1.56E-01		9.36E-01
			2598.48		16.90	1.21E-01		7.84E-01
+		CO-57	122.06		85.51	-4.79E-03	6.29E-02	6.29E-02
			136.48		10.60	5.46E-02		5.45E-01
+		CO-58	810.76		99.40	-1.24E-01	1.97E-01	1.97E-01
+		FE-59	1099.22		56.50	-2.30E-02	7.57E-01	7.57E-01
			1291.56		43.20	-6.55E-02		9.72E-01
+		CO-60	1173.22		100.00	-5.96E-02	9.47E-02	1.01E-01
			1332.49		100.00	3.62E-02		9.47E-02
+		ZN-65	1115.52		50.75	-3.52E-01	2.52E-01	2.52E-01
+		GA-67	93.31		35.70	4.53E+08	3.07E+08	3.07E+08
			208.95		2.24	8.07E+09		5.85E+09
			300.22		16.00	-1.15E+09		8.72E+08
+		SE-75	121.11		16.70	-2.55E-01	1.37E-01	4.30E-01
			136.00		59.20	3.44E-02		1.37E-01
			264.65		59.80	-1.05E-02		1.66E-01
			279.53		25.20	7.36E-02		4.31E-01
			400.65		11.40	1.01E-02		9.52E-01
+		RB-82	776.52		13.00	-1.03E+00	7.83E+00	7.83E+00
+		RB-83	520.41		46.00	1.72E-01	3.37E-01	3.37E-01
			529.64		30.30	3.46E-01		5.25E-01
			552.65		16.40	-2.26E-01		8.84E-01

Analysis Report for 1707091-07

HTC-A08-BKGD01-1218-01

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	KR-85	513.99		0.43	-2.52E+00	2.10E+01	2.10E+01
+	SR-85	513.99		99.27	-3.18E-02	2.65E-01	2.65E-01
+	Y-88	898.02		93.40	1.25E-01	1.04E-01	1.89E-01
		1836.01		99.38	-6.73E-02		1.04E-01
+	MO-93	263.06		56.72	-3.58E-02	6.70E-02	9.95E-02
		684.67		99.68	5.96E-02		8.31E-02
		1477.11		99.08	1.07E-02		6.70E-02
+	NB-93M	16.57		9.43	9.95E+00	6.29E+01	6.29E+01
+	NB-94	702.63		100.00	2.92E-02	7.84E-02	8.91E-02
		871.10		100.00	0.00E+00		7.84E-02
+	NB-95	765.79		99.81	-2.08E-03	5.65E-01	5.65E-01
+	NB-95M	235.69		25.00	-5.59E+06	9.70E+07	9.70E+07
+	ZR-95	724.18		43.70	-5.53E-02	4.40E-01	5.96E-01
		756.72		55.30	2.29E-01		4.40E-01
+	MO-99	181.06		6.20	4.06E+09	5.59E+10	8.24E+10
		739.58		12.80	-3.58E+10		5.59E+10
		778.00		4.50	1.08E+10		1.58E+11
+	RU-103	497.08		89.00	1.62E-02	4.39E-01	4.39E-01
+	RU-106	621.84		9.80	1.21E-01	8.94E-01	8.94E-01
+	AG-108M	433.93		89.90	-5.23E-03	6.70E-02	6.70E-02
		614.37		90.40	-9.37E-03		1.03E-01
		722.95		90.50	0.00E+00		9.07E-02
+	CD-109	88.03		3.72	1.55E+00	1.78E+00	1.78E+00
+	AG-110M	657.75		93.14	3.83E-02	1.10E-01	1.10E-01
		677.61		10.53	-1.04E+00		7.73E-01
		706.67		16.46	1.43E-01		6.76E-01
		763.93		21.98	-1.05E-01		4.08E-01
		884.67		71.63	1.76E-02		1.45E-01
		1384.27		23.94	-3.76E-02		3.98E-01
+	CD-113M	263.70		0.02	-1.64E+01	2.49E+02	2.49E+02
+	SN-113	255.12		1.93	2.16E-01	1.67E-01	5.45E+00
		391.69		64.90	-4.18E-03		1.67E-01
+	TE123M	159.00		84.10	-2.08E-02	9.46E-02	9.46E-02
+	SB-124	602.71		97.87	3.57E-02	2.34E-01	2.34E-01
		645.85		7.26	-1.31E+00		3.16E+00
		722.78		11.10	0.00E+00		2.36E+00
		1691.02		49.00	1.63E-01		4.55E-01
+	I-125	35.49		6.49	1.34E+00	5.82E+00	5.82E+00
+	SB-125	176.33		6.89	-1.78E-01	2.36E-01	6.82E-01
		427.89		29.33	7.14E-02		2.36E-01
		463.38		10.35	5.18E-01		7.49E-01
		600.56		17.80	8.46E-02		4.05E-01
		635.90		11.32	-1.40E-01		7.13E-01
+	SB-126	414.70		83.30	2.76E+00	2.19E+01	2.19E+01
		666.33		99.60	1.86E+01		2.27E+01
		695.00		99.60	-5.20E+00		2.20E+01
		720.50		53.80	9.91E+00		4.24E+01
+	SN-126	87.57	*	37.00	2.13E-01	2.33E-01	2.33E-01

Analysis Report for 1707091-07

HTC-A08-BKGD01-1218-01

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	SB-127	473.00	25.00	-8.56E+05	1.75E+07	1.97E+07
		685.20	35.70	1.26E+07		1.75E+07
		783.80	14.70	2.55E+07		4.31E+07
+	I-129	29.78	57.00	1.78E-01	3.56E-01	3.56E-01
		33.60	13.20	-1.33E-01		1.02E+00
		39.58	7.52	3.16E-01		1.21E+00
+	I-131	284.30	6.05	2.76E+03	4.33E+02	5.85E+03
		364.48	81.20	-1.01E+02		4.33E+02
		636.97	7.26	-1.45E+03		6.16E+03
		722.89	1.80	0.00E+00		2.72E+04
+	TE-132	49.72	13.10	-1.33E+09	1.38E+08	1.01E+09
		228.16	88.00	3.34E+07		1.38E+08
+	BA-133	81.00	33.00	-5.97E-01	1.44E-01	1.63E-01
		302.84	17.80	4.19E-03		3.63E-01
		356.01	60.00	3.52E-02		1.44E-01
+	@ I-133	529.87	86.30	1.00E+26	1.00E+26	1.00E+26
+	XE-133	81.00	38.00	-3.14E+05	8.57E+04	8.57E+04
+	CS-134	563.23	8.38	-5.99E-01	8.75E-02	8.53E-01
		569.32	15.43	-3.41E-02		4.93E-01
		604.70	97.60	5.41E-03		8.75E-02
		795.84	85.40	2.69E-02		1.04E-01
		801.93	8.73	-4.84E-01		9.50E-01
+	CS-135	268.24	16.00	1.68E-01	3.94E-01	3.94E-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	3.62E+01	1.56E+01	1.27E+02
		163.89	4.61	3.49E+01		1.98E+02
		176.55	13.56	-1.71E+01		6.56E+01
		273.65	12.66	-4.23E+01		9.99E+01
		340.57	48.50	2.98E+00		3.32E+01
		818.50	99.70	-4.08E+00		1.56E+01
		1048.07	79.60	-4.96E+00		2.04E+01
		1235.34	19.70	9.13E+00		1.33E+02
+	CS-137	661.65	85.12	1.05E-02	9.17E-02	9.17E-02
+	LA-138	788.74	34.00	3.84E-02	8.15E-02	2.41E-01
		1435.80	66.00	-5.46E-02		8.15E-02
+	CE-139	165.85	80.35	-7.32E-03	9.33E-02	9.33E-02
+	BA-140	162.64	6.70	-1.17E+01	6.01E+01	1.57E+02
		304.84	4.50	-1.22E+01		3.07E+02
		423.70	3.20	-1.64E+02		4.56E+02
		437.55	2.00	-2.87E+02		6.97E+02
		537.32	25.00	-9.66E+00		6.01E+01
+	LA-140	328.77	20.50	2.26E+01	2.19E+01	7.76E+01
		487.03	45.50	8.97E+00		3.42E+01
		815.85	23.50	-2.32E+01		7.65E+01
		1596.49	95.49	1.13E+01		2.19E+01
+	CE-141	145.44	48.40	-3.15E-01	7.72E-01	7.72E-01
+	@ CE-143	57.36	11.80	1.00E+26	1.00E+26	1.00E+26

Analysis Report for 1707091-07

HTC-A08-BKGD01-1218-01

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
@	CE-143	293.26		42.00	1.00E+26	1.00E+26	1.00E+26
@		664.55		5.20	1.00E+26		1.00E+26
+	CE-144	133.54		10.80	6.93E-02	5.35E-01	5.35E-01
+	PM-144	476.78		42.00	3.34E-02	8.49E-02	1.89E-01
		618.01		98.60	-7.47E-02		8.49E-02
		696.49		99.49	-1.73E-02		9.95E-02
+	PM-145	36.85		21.70	7.66E-02	2.67E-01	5.08E-01
		37.36		39.70	-9.30E-02		2.67E-01
		42.30		15.10	-4.95E-01		5.16E-01
		72.40		2.31	-6.23E+00		2.78E+00
+	PM-146	453.90		39.94	-7.32E-03	1.65E-01	1.65E-01
		735.90		14.01	3.58E-01		5.89E-01
		747.13		13.10	1.78E-01		5.70E-01
+	ND-147	91.11		28.90	-1.63E+01	1.13E+02	1.13E+02
		531.02		13.10	2.44E+01		3.00E+02
+	PM-149	285.90		3.10	3.55E+13	1.01E+14	1.01E+14
+	EU-152	121.78		20.50	-1.56E-02	2.05E-01	2.05E-01
		244.69		5.40	-2.84E+00		1.26E+00
		344.27		19.13	2.22E-03		3.13E-01
		778.89		9.20	-1.29E-01		7.21E-01
		964.01		10.40	8.20E-02		9.10E-01
		1085.78		7.22	1.70E-01		1.17E+00
		1112.02		9.60	-7.12E-02		1.08E+00
		1407.95		14.94	-1.19E-01		5.09E-01
+	GD-153	97.43		31.30	7.12E-02	1.79E-01	1.79E-01
		103.18		22.20	-1.56E-01		2.37E-01
+	EU-154	123.07		40.50	6.43E-03	1.07E-01	1.07E-01
		723.30		19.70	0.00E+00		4.26E-01
		873.19		11.50	-2.27E-02		7.11E-01
		996.32		10.30	-1.12E-01		8.66E-01
		1004.76		17.90	3.78E-01		5.74E-01
		1274.45		35.50	9.62E-02		2.91E-01
+	EU-155	86.50	*	30.90	2.65E-01	2.03E-01	2.90E-01
		105.30		20.70	-1.52E-02		2.03E-01
+	EU-156	811.77		10.40	-1.81E+01	7.25E+01	7.25E+01
		1153.47		7.20	-6.95E+00		1.34E+02
		1230.71		8.90	-4.35E+01		1.27E+02
+	HO-166M	184.41		72.60	7.37E-02	7.67E-02	7.67E-02
		280.45		29.60	4.64E-02		2.06E-01
		410.94		11.10	2.42E-01		6.07E-01
		711.69		54.10	6.09E-03		1.39E-01
+	TM-171	66.72		0.14	-6.24E+01	4.54E+01	4.54E+01
+	HF-172	67.35		5.31	3.78E-01	4.36E-01	1.20E+00
		125.81		11.30	-3.02E-01		4.36E-01
+	LU-172	181.53		20.60	-9.81E+03	5.92E+03	7.78E+03
		900.72		29.81	5.79E+01		9.62E+03
		1093.66		62.50	4.28E+03		5.92E+03
+	LU-173	100.72		5.24	2.66E-01	3.55E-01	8.99E-01
		272.11		21.20	3.47E-01		3.55E-01

Analysis Report for 1707091-07

HTC-A08-BKGD01-1218-01

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	HF-175	343.40		84.00	1.35E-03	1.90E-01	1.90E-01
+	LU-176	88.34		13.30	3.41E-01	5.57E-02	4.28E-01
		201.83		86.00	5.78E-03		5.57E-02
		306.78		94.00	2.00E-02		6.21E-02
+	HF-181	133.02		41.70	-2.04E-02	4.06E-01	5.78E-01
		345.85		17.20	1.27E-02		1.84E+00
		482.03		82.80	5.17E-02		4.06E-01
+	TA-182	67.75		41.20	8.07E-02	2.57E-01	2.57E-01
		1121.30		34.90	4.90E-01		6.80E-01
		1189.05		16.23	3.12E-01		1.26E+00
		1221.41		26.98	-3.26E-01		7.61E-01
		1231.02		11.44	-6.26E-01		1.82E+00
+	IR-192	308.46		29.68	-5.04E-02	3.29E-01	5.02E-01
		468.07		48.10	6.67E-02		3.29E-01
+	HG-203	279.19	*	77.30	1.44E-01	2.85E-01	2.85E-01
+	TL-204	374.74		94.11	-3.26E-02	6.66E-02	6.66E-02
		899.15		99.16	5.25E-02		9.61E-02
		911.74		91.10	3.48E-01		1.68E-01
+	BI-207	569.67		97.72	-1.00E-02	7.25E-02	7.25E-02
		1063.62		74.90	2.57E-02		1.25E-01
+	TL-208	583.14	*	30.22	1.20E+00	1.07E-01	3.26E-01
		860.37		4.48	6.43E-01		1.92E+00
		2614.66	*	35.85	9.80E-01		1.07E-01
+	BI-210M	262.00		45.00	-4.26E-03	1.27E-01	1.27E-01
		300.00		23.00	-3.93E-01		2.97E-01
+	PB-210	46.50		4.25	1.45E+00	1.75E+00	1.75E+00
+	PB-211	404.84		2.90	-1.49E+00	2.13E+00	2.13E+00
		831.96		2.90	6.01E-01		2.92E+00
+	BI-212	727.17	*	11.80	8.25E-01	7.93E-01	7.93E-01
		1620.62		2.75	2.66E-01		2.64E+00
+	PB-212	238.63	*	44.60	1.22E+00	2.32E-01	2.32E-01
		300.09	*	3.41	1.19E+00		1.77E+00
+	BI-214	609.31	*	46.30	8.78E-01	2.72E-01	2.72E-01
		1120.29	*	15.10	1.60E+00		1.26E+00
		1764.49	*	15.80	8.26E-01		5.58E-01
		2204.22		4.98	1.07E+00		1.98E+00
+	PB-214	295.21	*	19.19	7.82E-01	2.99E-01	3.50E-01
		351.92	*	37.19	9.99E-01		2.99E-01
+	RN-219	401.80		6.50	3.33E-01	9.66E-01	9.66E-01
+	RA-223	323.87		3.88	-1.82E-02	1.62E+00	1.62E+00
+	RA-224	240.98		3.95	1.62E+01	2.96E+00	2.96E+00
+	RA-225	40.00		31.00	8.44E+00	3.24E+01	3.24E+01
+	RA-226	186.21		3.28	1.84E+00	1.72E+00	1.72E+00
+	TH-227	50.10		8.40	-9.88E-01	7.49E-01	7.49E-01
		236.00		11.50	-4.74E-02		8.23E-01
		256.20		6.30	3.93E-01		9.32E-01
+	AC-228	338.32	*	11.40	1.19E+00	4.51E-01	7.64E-01
		911.07	*	27.70	1.02E+00		4.51E-01

Analysis Report for 1707091-07

HTC-A08-BKGD01-1218-01

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	AC-228	969.11	*	16.60	8.46E-01	4.51E-01	7.85E-01
+	TH-230	48.44		16.90	1.09E-01	4.08E-01	4.08E-01
		62.85		4.60	1.59E+00		1.37E+00
		67.67		0.37	4.88E+00		1.55E+01
+	PA-231	283.67		1.60	1.11E+00	2.76E+00	3.62E+00
		302.67		2.30	3.19E-02		2.76E+00
+	TH-231	25.64		14.70	1.02E-01	8.32E-01	2.60E+00
		84.21		6.40	-1.53E-01		8.32E-01
+	PA-233	311.98		38.60	-1.36E-01	2.03E+00	2.03E+00
+	PA-234	131.20		20.40	1.99E-01	2.43E-01	2.43E-01
		733.99		8.80	-5.17E-02		9.15E-01
		946.00		12.00	-3.07E-02		6.75E-01
+	PA-234M	1001.03		0.92	-1.16E-01	1.02E+01	1.02E+01
+	TH-234	63.29		3.80	9.44E-01	1.65E+00	1.65E+00
+	U-235	143.76		10.50	3.92E-03	4.20E-01	4.20E-01
		163.35		4.70	1.69E-01		9.56E-01
		205.31		4.70	6.30E-02		1.31E+00
+	NP-237	86.50	*	12.60	6.26E-01	6.83E-01	6.83E-01
+	NP-239	106.10		22.70	-1.04E+11	1.39E+12	1.39E+12
		228.18		10.70	1.03E+12		4.25E+12
		277.60		14.10	-1.06E+12		3.24E+12
+	AM-241	59.54		35.90	-1.61E-01	1.63E-01	1.63E-01
+	AM-243	74.67		66.00	1.76E-01	1.15E-01	1.15E-01
+	CM-243	209.75		3.29	1.72E+00	4.22E-01	1.93E+00
		228.14		10.60	1.34E-01		5.56E-01
		277.60		14.00	-1.38E-01		4.22E-01

+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction
? = CAUTION: MDA value is inconsistent with Currie MDA at 95% confidence level

NUCLIDE MDA REPORT

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

Analysis Report for 1707091-07

HTC-A08-BKGD01-1218-01

	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	2.37E+00	2.37E+00	-2.88E-01	1.12E+00
	NA-22	1274.54		99.94	1.09E-01	1.09E-01	3.60E-02	5.00E-02
@	NA-24	1368.53		99.99	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		2754.09		99.86	1.00E+26		1.00E+26	1.00E+20
	AL-26	1808.65		99.76	4.36E-02	4.36E-02	-3.11E-02	1.63E-02
+	K-40	1460.81	*	10.67	9.39E-01	9.39E-01	1.97E+01	4.26E-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	6.09E-02	6.09E-02	1.92E-02	2.98E-02
		78.34		96.00	7.49E-02		1.87E-01	3.68E-02
	SC-46	889.25		99.98	1.71E-01	1.71E-01	-1.43E-02	7.85E-02
		1120.51		99.99	2.98E-01		1.80E-01	1.40E-01
	V-48	983.52		99.98	6.39E+00	6.39E+00	-2.50E+00	2.93E+00
		1312.10		97.50	7.88E+00		6.01E-01	3.59E+00
	CR-51	320.08		9.83	7.91E+00	7.91E+00	-5.89E-02	3.80E+00
	MN-54	834.83		99.97	1.16E-01	1.16E-01	1.52E-02	5.43E-02
	CO-56	846.75		99.96	2.01E-01	2.01E-01	3.73E-02	9.33E-02
		1037.75		14.03	1.58E+00		6.27E-01	7.30E-01
		1238.25		67.00	4.66E-01		1.43E-01	2.18E-01
		1771.40		15.51	9.36E-01		1.56E-01	3.84E-01
		2598.48		16.90	7.84E-01		1.21E-01	2.93E-01
	CO-57	122.06		85.51	6.29E-02	6.29E-02	-4.79E-03	3.05E-02
		136.48		10.60	5.45E-01		5.46E-02	2.65E-01
	CO-58	810.76		99.40	1.97E-01	1.97E-01	-1.24E-01	9.08E-02
	FE-59	1099.22		56.50	7.57E-01	7.57E-01	-2.30E-02	3.47E-01
		1291.56		43.20	9.72E-01		-6.55E-02	4.40E-01
	CO-60	1173.22		100.00	1.01E-01	9.47E-02	-5.96E-02	4.65E-02
		1332.49		100.00	9.47E-02		3.62E-02	4.29E-02
	ZN-65	1115.52		50.75	2.52E-01	2.52E-01	-3.52E-01	1.16E-01
	GA-67	93.31		35.70	3.07E+08	3.07E+08	4.53E+08	1.50E+08
		208.95		2.24	5.85E+09		8.07E+09	2.85E+09
		300.22		16.00	8.72E+08		-1.15E+09	4.21E+08
	SE-75	121.11		16.70	4.30E-01	1.37E-01	-2.55E-01	2.08E-01
		136.00		59.20	1.37E-01		3.44E-02	6.65E-02
		264.65		59.80	1.66E-01		-1.05E-02	7.99E-02
		279.53		25.20	4.31E-01		7.36E-02	2.08E-01
		400.65		11.40	9.52E-01		1.01E-02	4.53E-01
	RB-82	776.52		13.00	7.83E+00	7.83E+00	-1.03E+00	3.59E+00
	RB-83	520.41		46.00	3.37E-01	3.37E-01	1.72E-01	1.59E-01
		529.64		30.30	5.25E-01		3.46E-01	2.48E-01
		552.65		16.40	8.84E-01		-2.26E-01	4.14E-01
	KR-85	513.99		0.43	2.10E+01	2.10E+01	-2.52E+00	1.01E+01
	SR-85	513.99		99.27	2.65E-01	2.65E-01	-3.18E-02	1.27E-01
	Y-88	898.02		93.40	1.89E-01	1.04E-01	1.25E-01	8.83E-02
		1836.01		99.38	1.04E-01		-6.73E-02	4.12E-02
	MO-93	263.06		56.72	9.95E-02	6.70E-02	-3.58E-02	4.79E-02
		684.67		99.68	8.31E-02		5.96E-02	3.90E-02
		1477.11		99.08	6.70E-02		1.07E-02	2.87E-02
	NB-93M	16.57		9.43	6.29E+01	6.29E+01	9.95E+00	3.06E+01
	NB-94	702.63		100.00	8.91E-02	7.84E-02	2.92E-02	4.21E-02
		871.10		100.00	7.84E-02		0.00E+00	3.62E-02
	NB-95	765.79		99.81	5.65E-01	5.65E-01	-2.08E-03	2.63E-01

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	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	NB-95M	235.69		25.00	9.70E+07	9.70E+07	-5.59E+06	4.75E+07
	ZR-95	724.18		43.70	5.96E-01	4.40E-01	-5.53E-02	2.81E-01
		756.72		55.30	4.40E-01		2.29E-01	2.06E-01
	MO-99	181.06		6.20	8.24E+10	5.59E+10	4.06E+09	3.99E+10
		739.58		12.80	5.59E+10		-3.58E+10	2.57E+10
		778.00		4.50	1.58E+11		1.08E+10	7.23E+10
	RU-103	497.08		89.00	4.39E-01	4.39E-01	1.62E-02	2.08E-01
	RU-106	621.84		9.80	8.94E-01	8.94E-01	1.21E-01	4.20E-01
	AG-108M	433.93		89.90	6.70E-02	6.70E-02	-5.23E-03	3.17E-02
		614.37		90.40	1.03E-01		-9.37E-03	4.89E-02
		722.95		90.50	9.07E-02		0.00E+00	4.25E-02
	CD-109	88.03		3.72	1.78E+00	1.78E+00	1.55E+00	8.73E-01
	AG-110M	657.75		93.14	1.10E-01	1.10E-01	3.83E-02	5.15E-02
		677.61		10.53	7.73E-01		-1.04E+00	3.56E-01
		706.67		16.46	6.76E-01		1.43E-01	3.18E-01
		763.93		21.98	4.08E-01		-1.05E-01	1.88E-01
		884.67		71.63	1.45E-01		1.76E-02	6.70E-02
		1384.27		23.94	3.98E-01		-3.76E-02	1.75E-01
	CD-113M	263.70		0.02	2.49E+02	2.49E+02	-1.64E+01	1.20E+02
	SN-113	255.12		1.93	5.45E+00	1.67E-01	2.16E-01	2.63E+00
		391.69		64.90	1.67E-01		-4.18E-03	7.95E-02
	TE123M	159.00		84.10	9.46E-02	9.46E-02	-2.08E-02	4.58E-02
	SB-124	602.71		97.87	2.34E-01	2.34E-01	3.57E-02	1.10E-01
		645.85		7.26	3.16E+00		-1.31E+00	1.48E+00
		722.78		11.10	2.36E+00		0.00E+00	1.11E+00
		1691.02		49.00	4.55E-01		1.63E-01	1.93E-01
	I-125	35.49		6.49	5.82E+00	5.82E+00	1.34E+00	2.83E+00
	SB-125	176.33		6.89	6.82E-01	2.36E-01	-1.78E-01	3.29E-01
		427.89		29.33	2.36E-01		7.14E-02	1.12E-01
		463.38		10.35	7.49E-01		5.18E-01	3.57E-01
		600.56		17.80	4.05E-01		8.46E-02	1.89E-01
		635.90		11.32	7.13E-01		-1.40E-01	3.35E-01
	SB-126	414.70		83.30	2.19E+01	2.19E+01	2.76E+00	1.04E+01
		666.33		99.60	2.27E+01		1.86E+01	1.07E+01
		695.00		99.60	2.20E+01		-5.20E+00	1.03E+01
		720.50		53.80	4.24E+01		9.91E+00	1.99E+01
+	SN-126	87.57	*	37.00	2.33E-01	2.33E-01	2.13E-01	1.15E-01
	SB-127	473.00		25.00	1.97E+07	1.75E+07	-8.56E+05	9.32E+06
		685.20		35.70	1.75E+07		1.26E+07	8.23E+06
		783.80		14.70	4.31E+07		2.55E+07	2.01E+07
	I-129	29.78		57.00	3.56E-01	3.56E-01	1.78E-01	1.73E-01
		33.60		13.20	1.02E+00		-1.33E-01	4.98E-01
		39.58		7.52	1.21E+00		3.16E-01	5.91E-01
	I-131	284.30		6.05	5.85E+03	4.33E+02	2.76E+03	2.81E+03
		364.48		81.20	4.33E+02		-1.01E+02	2.06E+02
		636.97		7.26	6.16E+03		-1.45E+03	2.89E+03
		722.89		1.80	2.72E+04		0.00E+00	1.27E+04
	TE-132	49.72		13.10	1.01E+09	1.38E+08	-1.33E+09	4.90E+08
		228.16		88.00	1.38E+08		3.34E+07	6.68E+07
	BA-133	81.00		33.00	1.63E-01	1.44E-01	-5.97E-01	7.97E-02
		302.84		17.80	3.63E-01		4.19E-03	1.75E-01
		356.01		60.00	1.44E-01		3.52E-02	6.96E-02
	@ I-133	529.87		86.30	1.00E+26	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)
XE-133	81.00	38.00	8.57E+04	8.57E+04	-3.14E+05	4.19E+04
CS-134	563.23	8.38	8.53E-01	8.75E-02	-5.99E-01	4.00E-01
	569.32	15.43	4.93E-01		-3.41E-02	2.32E-01
	604.70	97.60	8.75E-02		5.41E-03	4.13E-02
	795.84	85.40	1.04E-01		2.69E-02	4.83E-02
	801.93	8.73	9.50E-01		-4.84E-01	4.40E-01
CS-135	268.24	16.00	3.94E-01	3.94E-01	1.68E-01	1.90E-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
@	1678.03	9.54	1.00E+26		1.00E+26	1.00E+20
CS-136	153.22	7.46	1.27E+02	1.56E+01	3.62E+01	6.14E+01
	163.89	4.61	1.98E+02		3.49E+01	9.59E+01
	176.55	13.56	6.56E+01		-1.71E+01	3.17E+01
	273.65	12.66	9.99E+01		-4.23E+01	4.82E+01
	340.57	48.50	3.32E+01		2.98E+00	1.61E+01
	818.50	99.70	1.56E+01		-4.08E+00	7.24E+00
	1048.07	79.60	2.04E+01		-4.96E+00	9.28E+00
	1235.34	19.70	1.33E+02		9.13E+00	6.22E+01
CS-137	661.65	85.12	9.17E-02	9.17E-02	1.05E-02	4.31E-02
LA-138	788.74	34.00	2.41E-01	8.15E-02	3.84E-02	1.12E-01
	1435.80	66.00	8.15E-02		-5.46E-02	3.38E-02
CE-139	165.85	80.35	9.33E-02	9.33E-02	-7.32E-03	4.52E-02
BA-140	162.64	6.70	1.57E+02	6.01E+01	-1.17E+01	7.58E+01
	304.84	4.50	3.07E+02		-1.22E+01	1.47E+02
	423.70	3.20	4.56E+02		-1.64E+02	2.16E+02
	437.55	2.00	6.97E+02		-2.87E+02	3.30E+02
	537.32	25.00	6.01E+01		-9.66E+00	2.82E+01
LA-140	328.77	20.50	7.76E+01	2.19E+01	2.26E+01	3.73E+01
	487.03	45.50	3.42E+01		8.97E+00	1.62E+01
	815.85	23.50	7.65E+01		-2.32E+01	3.54E+01
	1596.49	95.49	2.19E+01		1.13E+01	9.72E+00
CE-141	145.44	48.40	7.72E-01	7.72E-01	-3.15E-01	3.74E-01
@ CE-143	57.36	11.80	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	293.26	42.00	1.00E+26		1.00E+26	1.00E+20
@	664.55	5.20	1.00E+26		1.00E+26	1.00E+20
CE-144	133.54	10.80	5.35E-01	5.35E-01	6.93E-02	2.60E-01
PM-144	476.78	42.00	1.89E-01	8.49E-02	3.34E-02	8.95E-02
	618.01	98.60	8.49E-02		-7.47E-02	3.97E-02
	696.49	99.49	9.95E-02		-1.73E-02	4.68E-02
PM-145	36.85	21.70	5.08E-01	2.67E-01	7.66E-02	2.47E-01
	37.36	39.70	2.67E-01		-9.30E-02	1.30E-01
	42.30	15.10	5.16E-01		-4.95E-01	2.51E-01
	72.40	2.31	2.78E+00		-6.23E+00	1.36E+00
PM-146	453.90	39.94	1.65E-01	1.65E-01	-7.32E-03	7.80E-02
	735.90	14.01	5.89E-01		3.58E-01	2.75E-01
	747.13	13.10	5.70E-01		1.78E-01	2.64E-01
ND-147	91.11	28.90	1.13E+02	1.13E+02	-1.63E+01	5.53E+01
	531.02	13.10	3.00E+02		2.44E+01	1.41E+02
PM-149	285.90	3.10	1.01E+14	1.01E+14	3.55E+13	4.86E+13
EU-152	121.78	20.50	2.05E-01	2.05E-01	-1.56E-02	9.97E-02
	244.69	5.40	1.26E+00		-2.84E+00	6.13E-01
	344.27	19.13	3.13E-01		2.22E-03	1.49E-01
	778.89	9.20	7.21E-01		-1.29E-01	3.31E-01

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	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	EU-152	964.01		10.40	9.10E-01	2.05E-01	8.20E-02	4.23E-01
		1085.78		7.22	1.17E+00		1.70E-01	5.35E-01
		1112.02		9.60	1.08E+00		-7.12E-02	5.00E-01
		1407.95		14.94	5.09E-01		-1.19E-01	2.24E-01
	GD-153	97.43		31.30	1.79E-01	1.79E-01	7.12E-02	8.71E-02
		103.18		22.20	2.37E-01		-1.56E-01	1.15E-01
	EU-154	123.07		40.50	1.07E-01	1.07E-01	6.43E-03	5.19E-02
		723.30		19.70	4.26E-01		0.00E+00	2.00E-01
		873.19		11.50	7.11E-01		-2.27E-02	3.29E-01
		996.32		10.30	8.66E-01		-1.12E-01	4.00E-01
		1004.76		17.90	5.74E-01		3.78E-01	2.67E-01
		1274.45		35.50	2.91E-01		9.62E-02	1.34E-01
+	EU-155	86.50	*	30.90	2.90E-01	2.03E-01	2.65E-01	1.43E-01
		105.30		20.70	2.03E-01		-1.52E-02	9.88E-02
	EU-156	811.77		10.40	7.25E+01	7.25E+01	-1.81E+01	3.36E+01
		1153.47		7.20	1.34E+02		-6.95E+00	6.19E+01
		1230.71		8.90	1.27E+02		-4.35E+01	5.88E+01
	HO-166M	184.41		72.60	7.67E-02	7.67E-02	7.37E-02	3.73E-02
		280.45		29.60	2.06E-01		4.64E-02	9.94E-02
		410.94		11.10	6.07E-01		2.42E-01	2.90E-01
		711.69		54.10	1.39E-01		6.09E-03	6.49E-02
	TM-171	66.72		0.14	4.54E+01	4.54E+01	-6.24E+01	2.22E+01
	HF-172	67.35		5.31	1.20E+00	4.36E-01	3.78E-01	5.88E-01
		125.81		11.30	4.36E-01		-3.02E-01	2.12E-01
	LU-172	181.53		20.60	7.78E+03	5.92E+03	-9.81E+03	3.76E+03
		900.72		29.81	9.62E+03		5.79E+01	4.46E+03
		1093.66		62.50	5.92E+03		4.28E+03	2.76E+03
	LU-173	100.72		5.24	8.99E-01	3.55E-01	2.66E-01	4.37E-01
		272.11		21.20	3.55E-01		3.47E-01	1.72E-01
	HF-175	343.40		84.00	1.90E-01	1.90E-01	1.35E-03	9.09E-02
	LU-176	88.34		13.30	4.28E-01	5.57E-02	3.41E-01	2.10E-01
		201.83		86.00	5.57E-02		5.78E-03	2.69E-02
		306.78		94.00	6.21E-02		2.00E-02	2.98E-02
	HF-181	133.02		41.70	5.78E-01	4.06E-01	-2.04E-02	2.81E-01
		345.85		17.20	1.84E+00		1.27E-02	8.80E-01
		482.03		82.80	4.06E-01		5.17E-02	1.92E-01
	TA-182	67.75		41.20	2.57E-01	2.57E-01	8.07E-02	1.26E-01
		1121.30		34.90	6.80E-01		4.90E-01	3.20E-01
		1189.05		16.23	1.26E+00		3.12E-01	5.84E-01
		1221.41		26.98	7.61E-01		-3.26E-01	3.53E-01
		1231.02		11.44	1.82E+00		-6.26E-01	8.46E-01
	IR-192	308.46		29.68	5.02E-01	3.29E-01	-5.04E-02	2.41E-01
		468.07		48.10	3.29E-01		6.67E-02	1.55E-01
+	HG-203	279.19	*	77.30	2.85E-01	2.85E-01	1.44E-01	1.36E-01
	TL-204	374.74		94.11	6.66E-02	6.66E-02	-3.26E-02	3.17E-02
		899.15		99.16	9.61E-02		5.25E-02	4.48E-02
		911.74		91.10	1.68E-01		3.48E-01	8.05E-02
	BI-207	569.67		97.72	7.25E-02	7.25E-02	-1.00E-02	3.41E-02
		1063.62		74.90	1.25E-01		2.57E-02	5.78E-02
+	TL-208	583.14	*	30.22	3.26E-01	1.07E-01	1.20E+00	1.56E-01
		860.37		4.48	1.92E+00		6.43E-01	8.91E-01
		2614.66	*	35.85	1.07E-01		9.80E-01	3.44E-02
	BI-210M	262.00		45.00	1.27E-01	1.27E-01	-4.26E-03	6.11E-02

Analysis Report for 1707091-07

HTC-A08-BKGD01-1218-01

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	BI-210M	300.00		23.00	2.97E-01	1.27E-01	-3.93E-01	1.44E-01
	PB-210	46.50		4.25	1.75E+00	1.75E+00	1.45E+00	8.54E-01
	PB-211	404.84		2.90	2.13E+00	2.13E+00	-1.49E+00	1.01E+00
		831.96		2.90	2.92E+00		6.01E-01	1.36E+00
+	BI-212	727.17	*	11.80	7.93E-01	7.93E-01	8.25E-01	3.75E-01
		1620.62		2.75	2.64E+00		2.66E-01	1.14E+00
+	PB-212	238.63	*	44.60	2.32E-01	2.32E-01	1.22E+00	1.14E-01
		300.09	*	3.41	1.77E+00		1.19E+00	8.51E-01
+	BI-214	609.31	*	46.30	2.72E-01	2.72E-01	8.78E-01	1.31E-01
		1120.29	*	15.10	1.26E+00		1.60E+00	6.03E-01
		1764.49	*	15.80	5.58E-01		8.26E-01	2.45E-01
		2204.22		4.98	1.98E+00		1.07E+00	8.63E-01
+	PB-214	295.21	*	19.19	3.50E-01	2.99E-01	7.82E-01	1.69E-01
		351.92	*	37.19	2.99E-01		9.99E-01	1.46E-01
	RN-219	401.80		6.50	9.66E-01	9.66E-01	3.33E-01	4.60E-01
	RA-223	323.87		3.88	1.62E+00	1.62E+00	-1.82E-02	7.79E-01
	RA-224	240.98		3.95	2.96E+00	2.96E+00	1.62E+01	1.45E+00
	RA-225	40.00		31.00	3.24E+01	3.24E+01	8.44E+00	1.58E+01
	RA-226	186.21		3.28	1.72E+00	1.72E+00	1.84E+00	8.37E-01
	TH-227	50.10		8.40	7.49E-01	7.49E-01	-9.88E-01	3.65E-01
		236.00		11.50	8.23E-01		-4.74E-02	4.03E-01
		256.20		6.30	9.32E-01		3.93E-01	4.50E-01
+	AC-228	338.32	*	11.40	7.64E-01	4.51E-01	1.19E+00	3.71E-01
		911.07	*	27.70	4.51E-01		1.02E+00	2.14E-01
		969.11	*	16.60	7.85E-01		8.46E-01	3.73E-01
	TH-230	48.44		16.90	4.08E-01	4.08E-01	1.09E-01	1.99E-01
		62.85		4.60	1.37E+00		1.59E+00	6.70E-01
		67.67		0.37	1.55E+01		4.88E+00	7.60E+00
	PA-231	283.67		1.60	3.62E+00	2.76E+00	1.11E+00	1.74E+00
		302.67		2.30	2.76E+00		3.19E-02	1.33E+00
	TH-231	25.64		14.70	2.60E+00	8.32E-01	1.02E-01	1.26E+00
		84.21		6.40	8.32E-01		-1.53E-01	4.07E-01
	PA-233	311.98		38.60	2.03E+00	2.03E+00	-1.36E-01	9.73E-01
	PA-234	131.20		20.40	2.43E-01	2.43E-01	1.99E-01	1.18E-01
		733.99		8.80	9.15E-01		-5.17E-02	4.28E-01
		946.00		12.00	6.75E-01		-3.07E-02	3.11E-01
	PA-234M	1001.03		0.92	1.02E+01	1.02E+01	-1.16E-01	4.75E+00
	TH-234	63.29		3.80	1.65E+00	1.65E+00	9.44E-01	8.07E-01
	U-235	143.76		10.50	4.20E-01	4.20E-01	3.92E-03	2.04E-01
		163.35		4.70	9.56E-01		1.69E-01	4.63E-01
		205.31		4.70	1.31E+00		6.30E-02	6.35E-01
+	NP-237	86.50	*	12.60	6.83E-01	6.83E-01	6.26E-01	3.37E-01
	NP-239	106.10		22.70	1.39E+12	1.39E+12	-1.04E+11	6.76E+11
		228.18		10.70	4.25E+12		1.03E+12	2.06E+12
		277.60		14.10	3.24E+12		-1.06E+12	1.56E+12
	AM-241	59.54		35.90	1.63E-01	1.63E-01	-1.61E-01	7.98E-02
	AM-243	74.67		66.00	1.15E-01	1.15E-01	1.76E-01	5.68E-02
	CM-243	209.75		3.29	1.93E+00	4.22E-01	1.72E+00	9.40E-01
		228.14		10.60	5.56E-01		1.34E-01	2.69E-01
		277.60		14.00	4.22E-01		-1.38E-01	2.03E-01

Analysis Report for 1707091-07

HTC-A08-BKGD01-1218-01

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

No Action Level results available for reporting purposes.

DATA REVIEW COMMENTS REPORT

Creation Date	Comment	User

No Data Review Comments Entered.

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

Sample Title: HTC-A08-BKGD01-1218-01

Elapsed Live time: 3600
Elapsed Real Time: 3608

Channel								
1:	0	0	0	0	0	0	0	0
9:	6	159	189	139	116	104	117	92
17:	93	82	79	81	92	80	94	92
25:	88	95	77	82	81	93	72	91
33:	72	73	100	80	95	88	90	97
41:	95	80	78	88	83	108	146	102
49:	111	94	91	100	116	100	101	114
57:	107	121	128	127	129	131	181	207
65:	152	130	155	142	142	161	128	135
73:	175	195	320	320	396	421	210	139
81:	111	113	121	136	141	144	170	194
89:	153	160	143	141	196	186	111	89
97:	68	98	92	85	83	74	72	69
105:	73	97	73	77	93	74	81	80
113:	77	84	75	76	71	77	61	68
121:	76	82	57	86	80	79	64	104
129:	123	106	106	78	81	79	81	83
137:	82	69	68	73	70	81	73	74
145:	73	51	60	79	71	75	67	66
153:	68	75	88	71	56	58	71	70
161:	59	62	53	65	66	65	48	63
169:	69	63	44	55	58	58	56	58
177:	34	68	49	62	51	69	64	50
185:	77	111	104	70	60	56	65	51
193:	53	61	66	55	43	57	42	57
201:	45	50	59	48	55	57	71	55
209:	76	81	58	52	38	40	49	50
217:	46	46	52	46	47	55	51	43
225:	50	54	38	49	46	40	44	44
233:	36	54	38	64	62	173	386	287
241:	113	104	91	52	41	30	26	36
249:	34	38	32	32	39	43	31	35
257:	31	43	43	30	38	30	34	31
265:	34	28	38	27	36	54	66	42
273:	35	37	28	32	28	44	40	37
281:	21	32	41	30	31	26	34	31
289:	26	26	31	18	34	34	101	100
297:	60	29	35	37	54	37	23	27
305:	23	30	28	25	27	30	23	22
313:	28	30	27	28	28	27	26	36
321:	31	30	24	39	21	19	37	41
329:	45	30	32	21	29	28	31	28
337:	29	74	82	50	22	21	22	27
345:	19	22	24	19	33	32	64	160
353:	147	58	20	23	26	15	24	22
361:	21	24	18	20	18	23	18	20

369:	21	24	22	20	21	15	24	16

Sample Title: HTC-A08-BKGD01-1218-01

Channel								
377:	23	18	28	20	18	24	20	23
385:	14	22	19	18	18	24	18	14
393:	15	17	18	15	20	11	22	14
401:	22	17	23	16	20	16	18	18
409:	24	32	18	25	16	16	16	21
417:	26	16	14	13	23	15	16	19
425:	9	17	18	25	22	17	18	14
433:	14	17	12	18	13	10	16	15
441:	16	16	21	14	20	17	11	21
449:	18	23	15	13	20	16	17	13
457:	15	13	12	21	18	11	33	35
465:	19	15	7	16	9	11	19	13
473:	10	9	20	21	16	20	7	13
481:	13	18	16	18	16	15	16	21
489:	9	8	15	20	19	21	17	15
497:	7	12	19	9	15	12	11	10
505:	19	6	15	21	21	35	59	52
513:	21	14	9	11	11	20	12	12
521:	13	18	14	11	7	14	19	12
529:	18	12	18	8	15	9	10	10
537:	8	16	15	11	9	17	12	10
545:	20	10	8	13	11	13	10	9
553:	15	12	10	8	8	18	9	9
561:	11	8	19	8	12	9	15	18
569:	8	11	11	13	12	17	14	11
577:	12	12	11	9	11	23	82	113
585:	48	14	11	8	8	12	10	7
593:	11	7	10	9	5	10	7	12
601:	10	13	12	8	14	13	13	24
609:	83	111	48	22	13	19	16	7
617:	11	7	11	12	8	16	12	8
625:	12	12	11	12	11	12	16	5
633:	16	17	7	9	16	5	12	15
641:	14	16	7	13	9	12	9	9
649:	13	10	12	6	10	11	13	10
657:	11	13	12	11	11	6	11	9
665:	21	14	11	9	12	5	7	13
673:	14	8	5	8	9	5	10	6
681:	4	18	12	8	10	8	16	12
689:	9	9	11	10	11	6	11	9
697:	19	9	13	15	15	15	12	15
705:	11	14	18	6	10	11	4	14
713:	7	8	12	6	8	12	10	14
721:	7	7	16	10	12	11	25	35
729:	23	8	8	8	14	14	11	9
737:	8	6	8	6	5	7	6	10
745:	9	7	4	9	11	5	6	6
753:	10	7	11	12	6	13	10	11
761:	6	6	6	8	6	9	5	15
769:	11	15	6	11	10	11	5	4
777:	8	7	1	6	10	5	9	9
785:	9	13	12	10	7	7	9	7
793:	9	7	12	9	13	8	4	8

801:	6	7	9	15	4	7	13	7

Sample Title: HTC-A08-BKGD01-1218-01

Channel								
809:	6	4	6	12	5	8	11	9
817:	6	6	7	10	8	7	7	10
825:	5	3	8	4	15	7	3	11
833:	10	6	11	10	14	14	5	8
841:	7	9	10	8	5	9	10	11
849:	7	8	4	7	8	9	8	4
857:	5	7	17	2	16	8	6	9
865:	6	9	5	5	7	10	4	10
873:	4	9	6	8	4	13	8	6
881:	6	2	7	9	7	6	5	12
889:	8	5	4	2	4	7	9	10
897:	8	11	10	10	7	7	4	5
905:	7	7	3	9	6	19	47	58
913:	27	5	6	7	3	10	8	3
921:	12	7	8	6	9	5	3	2
929:	3	6	3	12	4	10	8	7
937:	4	10	10	6	6	5	6	6
945:	8	6	8	4	7	12	3	6
953:	8	9	4	8	5	5	7	7
961:	4	6	7	9	16	9	8	16
969:	36	27	24	10	5	10	5	5
977:	9	9	9	7	7	7	6	10
985:	6	3	2	6	9	7	12	8
993:	5	11	9	8	5	7	3	10
1001:	2	12	10	12	6	8	8	8
1009:	6	4	2	4	3	5	3	7
1017:	4	5	8	10	5	3	6	5
1025:	8	3	8	7	4	8	4	6
1033:	5	5	3	11	5	10	3	5
1041:	12	4	6	8	1	6	8	4
1049:	5	7	5	8	3	5	6	7
1057:	5	9	6	7	7	3	7	9
1065:	7	9	7	5	6	3	8	8
1073:	5	5	8	4	4	3	7	4
1081:	5	2	5	6	5	3	5	9
1089:	4	5	12	9	13	7	12	7
1097:	5	5	6	4	9	6	6	9
1105:	2	6	4	6	14	12	5	5
1113:	5	3	11	11	9	4	21	16
1121:	18	13	9	8	6	7	8	9
1129:	5	3	8	8	11	6	10	8
1137:	3	8	12	6	9	5	9	4
1145:	5	4	5	8	4	6	7	6
1153:	7	3	9	8	8	7	8	7
1161:	6	13	3	7	5	6	7	10
1169:	11	0	9	4	8	6	11	7
1177:	9	7	3	17	8	7	7	10
1185:	5	10	4	8	9	12	9	6
1193:	7	6	12	6	4	2	5	14
1201:	13	8	4	7	7	16	4	6
1209:	7	7	15	6	6	12	10	12
1217:	12	8	4	11	9	10	8	6
1225:	6	12	8	4	6	13	6	10

1233:	7	11	10	10	13	14	14	8

Sample Title: HTC-A08-BKGD01-1218-01

Channel								
1241:	5	9	8	3	10	6	9	6
1249:	7	8	10	4	5	7	4	3
1257:	3	1	13	4	3	8	4	2
1265:	9	6	12	8	8	3	12	9
1273:	3	4	10	3	1	5	3	9
1281:	4	7	5	4	5	5	2	2
1289:	4	7	5	0	6	6	4	7
1297:	5	2	2	4	2	3	2	5
1305:	6	3	4	5	8	5	5	3
1313:	6	6	3	3	7	2	4	3
1321:	2	5	3	5	1	5	4	4
1329:	5	5	2	4	6	5	4	3
1337:	1	1	1	2	3	4	1	3
1345:	4	6	3	3	2	3	3	3
1353:	1	0	4	4	6	5	3	4
1361:	2	4	4	2	2	4	2	3
1369:	2	1	2	1	4	0	5	4
1377:	12	7	4	6	2	2	1	4
1385:	3	5	0	2	2	0	1	5
1393:	1	1	3	2	5	1	0	3
1401:	3	6	5	0	3	1	2	3
1409:	5	1	3	5	3	1	4	2
1417:	1	1	2	2	0	4	1	2
1425:	4	3	1	3	0	3	7	1
1433:	1	3	0	0	0	1	3	1
1441:	2	2	3	2	1	1	2	1
1449:	5	2	0	2	3	1	3	2
1457:	3	12	46	144	209	160	37	6
1465:	1	1	0	0	2	1	1	1
1473:	2	2	0	1	2	1	1	1
1481:	2	1	1	2	1	3	0	1
1489:	3	1	2	2	2	2	3	5
1497:	2	4	1	3	4	3	2	4
1505:	1	2	0	1	4	1	1	3
1513:	4	2	4	0	2	2	2	2
1521:	1	3	2	2	0	2	1	0
1529:	1	1	2	0	1	2	2	0
1537:	2	0	3	0	0	1	1	1
1545:	2	0	1	0	0	0	2	1
1553:	0	3	0	3	1	0	0	1
1561:	1	2	2	1	3	2	0	2
1569:	1	3	1	1	3	1	0	0
1577:	1	0	1	4	0	4	3	1
1585:	3	2	4	8	8	1	4	8
1593:	5	2	1	1	1	0	2	1
1601:	0	1	1	1	1	1	1	1
1609:	1	0	1	3	3	1	1	0
1617:	1	1	1	2	4	1	0	3
1625:	3	0	1	3	1	7	0	0
1633:	1	1	0	2	4	0	1	1
1641:	2	0	2	1	2	0	1	2
1649:	3	0	1	1	3	0	2	1
1657:	0	1	0	1	5	2	3	2

1665:	1	0	2	2	0	2	2	1

Sample Title: HTC-A08-BKGD01-1218-01

Channel								
1673:	1	1	0	2	4	0	0	0
1681:	2	2	1	2	0	1	0	1
1689:	3	0	2	0	3	1	1	0
1697:	1	0	3	1	1	1	2	0
1705:	2	0	3	1	1	1	1	1
1713:	1	0	1	0	1	1	0	2
1721:	2	2	0	0	1	0	1	3
1729:	3	5	0	1	1	0	0	1
1737:	1	1	1	1	1	0	0	2
1745:	1	0	1	1	2	3	1	1
1753:	0	0	1	0	1	2	1	0
1761:	0	2	7	17	11	4	1	0
1769:	1	0	3	0	1	1	0	0
1777:	1	1	1	0	0	1	0	0
1785:	2	0	0	1	1	1	1	0
1793:	1	1	0	2	1	0	0	0
1801:	1	0	2	0	0	0	1	0
1809:	0	1	0	1	2	1	1	2
1817:	1	0	1	1	0	2	1	3
1825:	0	0	2	1	1	1	2	1
1833:	1	1	0	0	1	0	0	1
1841:	3	0	2	0	0	2	2	0
1849:	0	0	1	2	1	1	1	0
1857:	0	0	1	0	0	1	2	0
1865:	2	0	1	1	1	1	2	0
1873:	2	0	2	1	1	3	0	0
1881:	1	1	1	1	1	1	1	1
1889:	0	1	2	2	1	1	0	0
1897:	1	1	0	1	0	1	1	2
1905:	1	1	1	0	1	0	2	0
1913:	0	2	0	1	2	0	2	0
1921:	1	0	0	0	0	4	2	0
1929:	1	0	3	2	1	2	1	1
1937:	0	0	1	0	2	0	2	2
1945:	0	0	3	2	1	1	0	1
1953:	0	1	2	1	0	1	0	1
1961:	0	0	1	1	0	2	1	1
1969:	2	1	1	1	0	0	2	0
1977:	0	0	3	1	0	2	0	1
1985:	1	2	1	0	1	1	0	1
1993:	2	1	0	0	4	2	0	1
2001:	0	1	2	0	0	1	1	0
2009:	1	0	3	1	1	1	0	1
2017:	0	2	1	0	1	1	1	3
2025:	0	2	2	2	2	0	1	1
2033:	0	0	0	0	0	1	0	1
2041:	0	0	1	0	1	0	3	1
2049:	0	1	0	2	0	1	0	0
2057:	0	2	0	0	0	2	0	0
2065:	2	1	1	0	0	1	0	0
2073:	0	3	1	2	0	0	1	0
2081:	1	1	0	0	1	0	2	0
2089:	0	1	0	1	0	0	1	1

2097:	2	0	0	0	1	2	2	4

Sample Title: HTC-A08-BKGD01-1218-01

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

2529:	2	0	1	0	0	0	0	0

Sample Title: HTC-A08-BKGD01-1218-01

Channel								
2537:	0	0	0	0	0	0	0	0
2545:	0	0	1	0	0	0	0	0
2553:	0	1	1	0	0	0	0	0
2561:	0	0	0	0	0	0	0	0
2569:	0	1	0	1	0	0	0	1
2577:	0	0	0	0	0	0	0	0
2585:	0	0	0	0	1	0	0	1
2593:	0	0	0	1	0	0	2	0
2601:	0	0	0	0	0	2	0	0
2609:	0	1	2	3	10	21	18	13
2617:	3	0	0	0	0	1	0	0
2625:	1	0	1	0	0	0	1	1
2633:	1	0	0	0	0	0	0	0
2641:	2	0	0	0	0	1	0	0
2649:	1	0	0	0	0	0	1	0
2657:	0	0	0	0	0	0	0	0
2665:	0	0	0	0	0	0	0	0
2673:	0	0	1	0	0	0	2	0
2681:	0	0	0	0	0	0	0	0
2689:	1	0	0	0	0	0	0	0
2697:	0	1	0	0	0	0	0	0
2705:	0	1	1	0	0	2	0	0
2713:	0	0	0	0	1	0	0	0
2721:	0	0	0	1	0	0	0	0
2729:	0	0	0	0	0	2	0	0
2737:	0	0	0	1	0	1	1	0
2745:	0	0	0	0	0	0	0	1
2753:	0	0	0	1	0	0	1	1
2761:	0	0	0	0	0	0	0	0
2769:	0	0	0	0	0	0	0	0
2777:	0	0	0	0	0	1	0	0
2785:	0	0	0	1	0	0	0	0
2793:	0	1	0	0	0	0	0	0
2801:	1	1	0	0	1	0	0	0
2809:	0	2	0	1	0	0	0	1
2817:	0	0	1	0	0	0	0	0
2825:	1	0	1	0	1	0	0	0
2833:	1	1	0	1	1	0	0	1
2841:	0	0	0	0	0	0	0	0
2849:	1	1	0	0	0	0	1	0
2857:	0	0	0	0	0	0	0	1
2865:	1	0	0	1	1	0	0	0
2873:	1	0	0	1	0	0	0	0
2881:	0	1	0	0	0	1	0	0
2889:	0	0	1	0	0	0	0	0
2897:	0	0	0	1	0	2	0	0
2905:	1	0	0	0	0	0	0	0
2913:	0	1	0	0	0	0	0	0
2921:	0	0	0	0	0	0	0	0
2929:	0	1	2	0	0	0	1	0
2937:	0	0	0	0	0	0	0	0
2945:	0	0	0	1	0	0	0	0
2953:	0	0	0	0	0	1	0	0

2961:	1	0	0	0	0	0	1	0

Sample Title: HTC-A08-BKGD01-1218-01

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

3393:	0	0	0	0	0	0	0	0

Sample Title: HTC-A08-BKGD01-1218-01

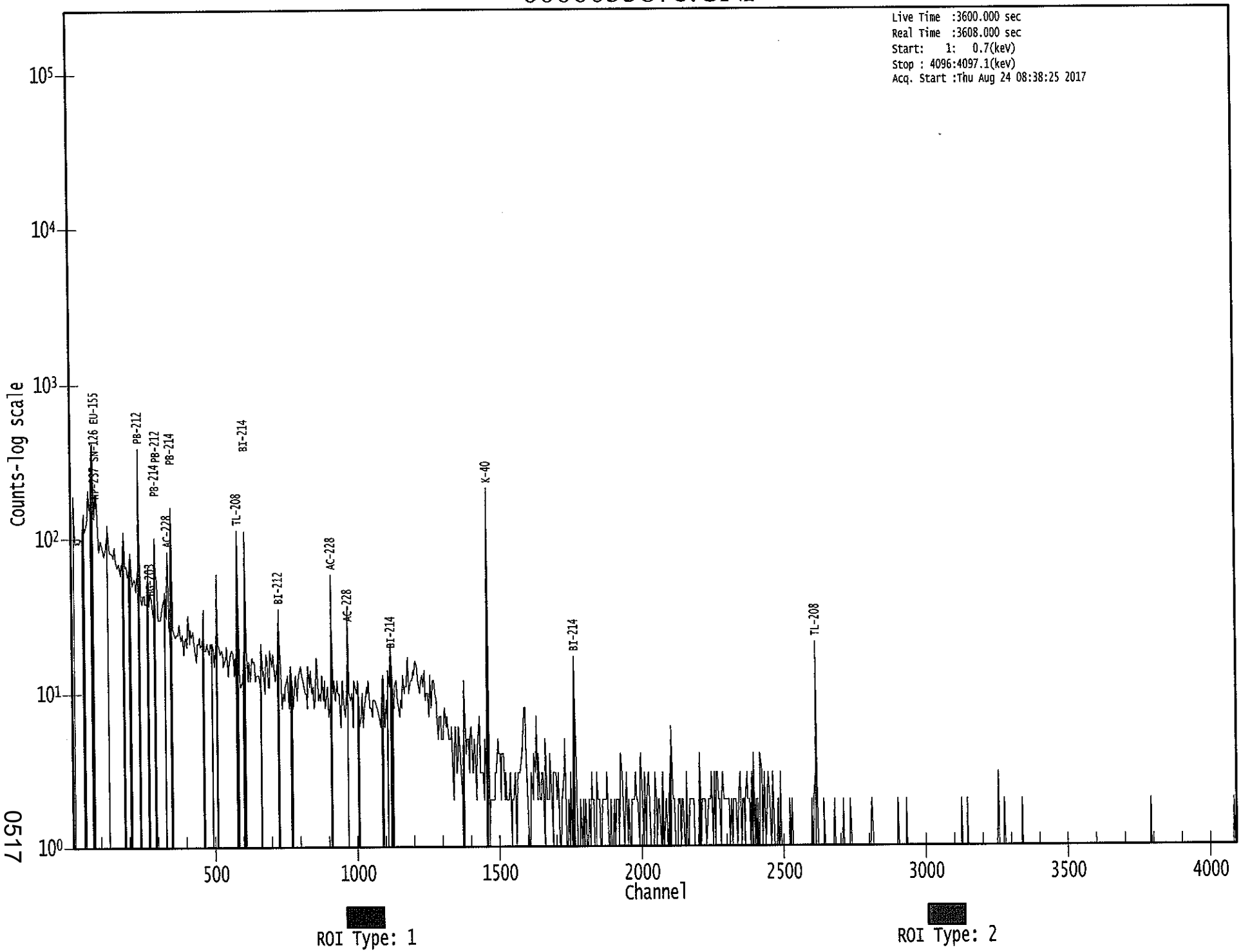
Channel								
3401:	0	0	0	1	0	0	0	0
3409:	0	0	0	1	0	0	1	0
3417:	0	0	0	0	0	0	0	0
3425:	0	0	0	0	1	0	0	0
3433:	0	1	0	0	0	1	1	0
3441:	0	0	0	0	0	0	0	0
3449:	0	0	1	0	0	0	0	0
3457:	0	0	0	0	0	1	0	0
3465:	0	0	0	1	0	0	0	0
3473:	0	0	0	0	0	0	0	0
3481:	1	1	0	0	0	0	0	0
3489:	0	0	0	0	0	0	0	0
3497:	0	0	0	0	0	0	1	1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

3825:	0	1	0	1	0	0	0	0

Sample Title: HTC-A08-BKGD01-1218-01

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

0000055878.CNF



0517

Apex-Gamma

8/24

Analysis Report for 1707091-08

HTC-A08-BKGD01-1824-01

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 1707091-08
Sample Description	: HTC-A08-BKGD01-1824-01
Sample Type	: SOIL
Sample Size	: 6.448E+02 grams
Facility	: Countroom
Sample Taken On	: 5/15/2017 12:49:42PM
Acquisition Started	: 8/24/2017 9:39:21AM
Procedure	: GAS-1602 pCi
Operator	: Administrator
Detector Name	: GE3
Geometry	: GAS-1602
Live Time	: 3600.0 seconds
Real Time	: 3608.4 seconds
Dead Time	: 0.23 %
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	: 1/14/2017
Efficiency Calibration Used Done On	: 1/14/2017
Efficiency Calibration Description	:
Sample Number	: 55884

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

Analysis Report for 1707091-08

HTC-A08-BKGD01-1824-01

PEAK LOCATE REPORT

Peak Locate Performed on : 8/24/2017 10:39:32AM
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	16.57	16.89	0.0000	0.00
2	63.78	64.08	0.0000	0.00
3	75.29	75.59	0.0000	0.00
4	77.46	77.76	0.0000	0.00
5	86.98	87.28	0.0000	0.00
6	92.94	93.24	0.0000	0.00
7	129.21	129.49	0.0000	0.00
8	185.90	186.17	0.0000	0.00
9	209.04	209.30	0.0000	0.00
10	238.94	239.19	0.0000	0.00
11	241.91	242.16	0.0000	0.00
12	272.71	272.94	0.0000	0.00
13	295.78	296.01	0.0000	0.00
14	328.33	328.55	0.0000	0.00
15	338.49	338.71	0.0000	0.00
16	352.22	352.43	0.0000	0.00
17	409.94	410.13	0.0000	0.00
18	462.81	462.98	0.0000	0.00
19	499.64	499.80	0.0000	0.00
20	510.91	511.06	0.0000	0.00
21	563.21	563.35	0.0000	0.00
22	583.15	583.28	0.0000	0.00
23	609.62	609.75	0.0000	0.00
24	727.32	727.41	0.0000	0.00
25	769.27	769.34	0.0000	0.00
26	786.41	786.47	0.0000	0.00
27	801.69	801.75	0.0000	0.00
28	906.23	906.26	0.0000	0.00
29	911.42	911.44	0.0000	0.00
30	969.21	969.21	0.0000	0.00
31	972.21	972.21	0.0000	0.00
32	979.81	979.81	0.0000	0.00
33	1077.68	1077.65	0.0000	0.00
34	1119.85	1119.80	0.0000	0.00
35	1271.15	1271.05	0.0000	0.00
36	1378.11	1377.97	0.0000	0.00
37	1461.05	1460.88	0.0000	0.00
38	1590.28	1590.08	0.0000	0.00
39	1621.10	1620.88	0.0000	0.00
40	1629.65	1629.42	0.0000	0.00
41	1633.51	1633.29	0.0000	0.00
42	1731.22	1730.96	0.0000	0.00

Analysis Report for 1707091-08

HTC-A08-BKGD01-1824-01

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
43	1764.55	1764.28	0.0000	0.00
44	1788.41	1788.13	0.0000	0.00
45	2104.50	2104.12	0.0000	0.00
46	2198.14	2197.72	0.0000	0.00
47	2447.72	2447.23	0.0000	0.00
48	2614.82	2614.26	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1707091-08

HTC-A08-BKGD01-1824-01

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 8/24/2017 10:39:32AM

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	16.57	15 -	20	16.89	6.76E+01	74.02	1.02E+03	1.69
	2	63.78	61 -	67	64.08	1.50E+02	105.20	1.90E+03	2.21
M	3	75.29	71 -	82	75.59	5.15E+02	120.58	1.87E+03	2.43
m	4	77.46	71 -	82	77.76	6.62E+02	110.54	1.55E+03	2.01
	5	86.98	84 -	90	87.28	1.72E+02	110.70	2.12E+03	2.04
	6	92.94	90 -	96	93.24	2.61E+02	106.11	1.79E+03	2.09
	7	129.21	126 -	132	129.49	9.79E+01	84.33	1.22E+03	1.31
	8	185.90	182 -	190	186.17	2.08E+02	89.20	1.09E+03	2.34
	9	209.04	205 -	214	209.30	1.44E+02	87.65	1.02E+03	2.47
M	10	238.94	234 -	247	239.19	8.99E+02	80.88	5.64E+02	2.04
m	11	241.91	234 -	247	242.16	2.15E+02	92.65	6.56E+02	2.74
	12	272.71	267 -	284	272.94	1.18E+02	112.01	1.10E+03	2.04
	13	295.78	292 -	301	296.01	2.52E+02	81.31	8.02E+02	2.08
	14	328.33	326 -	331	328.55	3.90E+01	42.14	3.24E+02	1.56
M	15	338.49	335 -	357	338.71	1.64E+02	53.93	3.87E+02	2.61
m	16	352.22	335 -	357	352.43	4.05E+02	55.73	2.78E+02	2.14
	17	409.94	405 -	415	410.13	6.25E+01	54.34	3.53E+02	2.70
	18	462.81	457 -	466	462.98	7.70E+01	49.41	3.04E+02	2.99
	19	499.64	497 -	502	499.80	2.52E+01	29.17	1.46E+02	2.21
	20	510.91	505 -	516	511.06	1.52E+02	59.03	3.58E+02	2.09
	21	563.21	560 -	567	563.35	3.73E+01	31.75	1.41E+02	2.29
	22	583.15	577 -	587	583.28	2.49E+02	56.76	2.96E+02	2.27
	23	609.62	607 -	613	609.75	2.89E+02	43.75	1.34E+02	2.30
	24	727.32	723 -	733	727.41	4.06E+01	43.34	2.23E+02	2.48
	25	769.27	766 -	773	769.34	2.65E+01	31.18	1.45E+02	2.62
	26	786.41	784 -	789	786.47	1.96E+01	23.04	8.69E+01	1.49
	27	801.69	790 -	819	801.75	1.39E+02	83.31	3.79E+02	26.08
M	28	906.23	905 -	918	906.26	1.48E+01	10.39	2.94E+01	2.56
m	29	911.42	905 -	918	911.44	1.63E+02	35.10	9.30E+01	2.50
M	30	969.21	966 -	976	969.21	9.17E+01	31.84	1.43E+02	2.35
m	31	972.21	966 -	976	972.21	1.81E+01	31.08	9.00E+01	2.36
	32	979.81	977 -	985	979.81	2.40E+01	23.75	7.20E+01	6.50
	33	1077.68	1073 -	1081	1077.65	2.20E+01	25.94	9.00E+01	3.87
	34	1119.85	1115 -	1124	1119.80	5.02E+01	34.83	1.44E+02	1.64
	35	1271.15	1268 -	1274	1271.05	1.70E+01	17.29	4.20E+01	3.18
	36	1378.11	1372 -	1384	1377.97	2.71E+01	25.66	6.37E+01	3.26
	37	1461.05	1455 -	1467	1460.88	7.16E+02	58.47	6.62E+01	2.38
	38	1590.28	1586 -	1593	1590.08	1.94E+01	16.37	3.12E+01	3.82
	39	1621.10	1615 -	1626	1620.88	2.00E+01	13.27	1.20E+01	1.34
M	40	1629.65	1627 -	1635	1629.42	9.54E+00	6.80	3.50E+00	3.16

Analysis Report for 1707091-08

HTC-A08-BKGD01-1824-01

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
m	41	1633.51	1627 -	1635	1633.29	6.44E+00	5.85	7.50E-01	2.44
	42	1731.22	1727 -	1735	1730.96	1.54E+01	14.88	1.92E+01	4.18
	43	1764.55	1759 -	1769	1764.28	4.54E+01	16.26	1.11E+01	2.38
	44	1788.41	1784 -	1791	1788.13	7.11E+00	7.21	3.78E+00	2.35
	45	2104.50	2100 -	2106	2104.12	6.23E+00	8.99	9.55E+00	1.79
	46	2198.14	2194 -	2200	2197.72	7.50E+00	8.28	7.00E+00	2.70
	47	2447.72	2442 -	2450	2447.23	7.67E+00	9.41	8.67E+00	2.62
	48	2614.82	2608 -	2618	2614.26	6.03E+01	17.90	9.35E+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 : 8/24/2017 10:39:32AM

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	16.57	15 -	20	6.76E+01	74.02	1.02E+03	5.93E+01
	2	63.78	61 -	67	1.50E+02	105.20	1.90E+03	8.41E+01
M	3	75.29	71 -	82	5.15E+02	120.58	1.87E+03	7.11E+01
m	4	77.46	71 -	82	6.62E+02	110.54	1.55E+03	6.48E+01
	5	86.98	84 -	90	1.72E+02	110.70	2.12E+03	8.84E+01
	6	92.94	90 -	96	2.61E+02	106.11	1.79E+03	8.31E+01
	7	129.21	126 -	132	9.79E+01	84.33	1.22E+03	6.74E+01
	8	185.90	182 -	190	2.08E+02	89.20	1.09E+03	6.94E+01
	9	209.04	205 -	214	1.44E+02	87.65	1.02E+03	6.93E+01
M	10	238.94	234 -	247	8.99E+02	80.88	5.64E+02	3.90E+01
m	11	241.91	234 -	247	2.15E+02	92.65	6.56E+02	4.21E+01
	12	272.71	267 -	284	1.18E+02	112.01	1.10E+03	3.16E+01
	13	295.78	292 -	301	2.52E+02	81.31	8.02E+02	6.15E+01
	14	328.33	326 -	331	3.90E+01	42.14	3.24E+02	3.31E+01
M	15	338.49	335 -	357	1.64E+02	53.93	3.87E+02	3.23E+01
m	16	352.22	335 -	357	4.05E+02	55.73	2.78E+02	2.74E+01
	17	409.94	405 -	415	6.25E+01	54.34	3.53E+02	4.27E+01
	18	462.81	457 -	466	7.70E+01	49.41	3.04E+02	3.80E+01
	19	499.64	497 -	502	2.52E+01	29.17	1.46E+02	2.25E+01

Analysis Report for 1707091-08

HTC-A08-BKGD01-1824-01

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	20	510.91	505 -	516	1.52E+02	59.03	3.58E+02	4.41E+01
	21	563.21	560 -	567	3.73E+01	31.75	1.41E+02	2.41E+01
	22	583.15	577 -	587	2.49E+02	56.76	2.96E+02	3.88E+01
	23	609.62	607 -	613	2.89E+02	43.75	1.34E+02	2.26E+01
	24	727.32	723 -	733	4.06E+01	43.34	2.23E+02	3.41E+01
	25	769.27	766 -	773	2.65E+01	31.18	1.45E+02	2.42E+01
	26	786.41	784 -	789	1.96E+01	23.04	8.69E+01	1.75E+01
	27	801.69	790 -	819	1.39E+02	83.31	3.79E+02	6.57E+01
M	28	906.23	905 -	918	1.48E+01	10.39	2.94E+01	8.91E+00
m	29	911.42	905 -	918	1.63E+02	35.10	9.30E+01	1.59E+01
M	30	969.21	966 -	976	9.17E+01	31.84	1.43E+02	1.97E+01
m	31	972.21	966 -	976	1.81E+01	31.08	9.00E+01	1.56E+01
	32	979.81	977 -	985	2.40E+01	23.75	7.20E+01	1.78E+01
	33	1077.68	1073 -	1081	2.20E+01	25.94	9.00E+01	1.99E+01
	34	1119.85	1115 -	1124	5.02E+01	34.83	1.44E+02	2.62E+01
	35	1271.15	1268 -	1274	1.70E+01	17.29	4.20E+01	1.25E+01
	36	1378.11	1372 -	1384	2.71E+01	25.66	6.37E+01	1.93E+01
	37	1461.05	1455 -	1467	7.16E+02	58.47	6.62E+01	1.94E+01
	38	1590.28	1586 -	1593	1.94E+01	16.37	3.12E+01	1.13E+01
	39	1621.10	1615 -	1626	2.00E+01	13.27	1.20E+01	8.05E+00
M	40	1629.65	1627 -	1635	9.54E+00	6.80	3.50E+00	3.08E+00
m	41	1633.51	1627 -	1635	6.44E+00	5.85	7.50E-01	1.42E+00
	42	1731.22	1727 -	1735	1.54E+01	14.88	1.92E+01	1.04E+01
	43	1764.55	1759 -	1769	4.54E+01	16.26	1.11E+01	7.48E+00
	44	1788.41	1784 -	1791	7.11E+00	7.21	3.78E+00	3.99E+00
	45	2104.50	2100 -	2106	6.23E+00	8.99	9.55E+00	6.14E+00
	46	2198.14	2194 -	2200	7.50E+00	8.28	7.00E+00	5.10E+00
	47	2447.72	2442 -	2450	7.67E+00	9.41	8.67E+00	6.25E+00
	48	2614.82	2608 -	2618	6.03E+01	17.90	9.35E+00	7.32E+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 : 8/24/2017 10:39:32AM

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

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

Analysis Report for 1707091-08

HTC-A08-BKGD01-1824-01

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	1	16.57	15 -	20	16.89	6.76E+01	74.02	1.02E+03	NB-93M
	2	63.78	61 -	67	64.08	1.50E+02	105.20	1.90E+03	TH-234
									TH-230
M	3	75.29	71 -	82	75.59	5.15E+02	120.58	1.87E+03	AM-243
m	4	77.46	71 -	82	77.76	6.62E+02	110.54	1.55E+03	TI-44
	5	86.98	84 -	90	87.28	1.72E+02	110.70	2.12E+03	NP-237
									EU-155
									SN-126
	6	92.94	90 -	96	93.24	2.61E+02	106.11	1.79E+03	GA-67
	7	129.21	126 -	132	129.49	9.79E+01	84.33	1.22E+03	.....
	8	185.90	182 -	190	186.17	2.08E+02	89.20	1.09E+03	RA-226
	9	209.04	205 -	214	209.30	1.44E+02	87.65	1.02E+03	GA-67
									CM-243
M	10	238.94	234 -	247	239.19	8.99E+02	80.88	5.64E+02	PB-212
m	11	241.91	234 -	247	242.16	2.15E+02	92.65	6.56E+02	RA-224
	12	272.71	267 -	284	272.94	1.18E+02	112.01	1.10E+03	LU-173
									CS-136
	13	295.78	292 -	301	296.01	2.52E+02	81.31	8.02E+02	PB-214
	14	328.33	326 -	331	328.55	3.90E+01	42.14	3.24E+02	LA-140
M	15	338.49	335 -	357	338.71	1.64E+02	53.93	3.87E+02	AC-228
m	16	352.22	335 -	357	352.43	4.05E+02	55.73	2.78E+02	PB-214
	17	409.94	405 -	415	410.13	6.25E+01	54.34	3.53E+02	HO-166M
	18	462.81	457 -	466	462.98	7.70E+01	49.41	3.04E+02	SB-125
	19	499.64	497 -	502	499.80	2.52E+01	29.17	1.46E+02	.....
	20	510.91	505 -	516	511.06	1.52E+02	59.03	3.58E+02	.....
	21	563.21	560 -	567	563.35	3.73E+01	31.75	1.41E+02	CS-134
	22	583.15	577 -	587	583.28	2.49E+02	56.76	2.96E+02	TL-208
	23	609.62	607 -	613	609.75	2.89E+02	43.75	1.34E+02	BI-214
	24	727.32	723 -	733	727.41	4.06E+01	43.34	2.23E+02	BI-212
	25	769.27	766 -	773	769.34	2.65E+01	31.18	1.45E+02	.....
	26	786.41	784 -	789	786.47	1.96E+01	23.04	8.69E+01	.....
	27	801.69	790 -	819	801.75	1.39E+02	83.31	3.79E+02	CS-134
M	28	906.23	905 -	918	906.26	1.48E+01	10.39	2.94E+01	.....
m	29	911.42	905 -	918	911.44	1.63E+02	35.10	9.30E+01	TL-204
									AC-228
M	30	969.21	966 -	976	969.21	9.17E+01	31.84	1.43E+02	AC-228
m	31	972.21	966 -	976	972.21	1.81E+01	31.08	9.00E+01	.....
	32	979.81	977 -	985	979.81	2.40E+01	23.75	7.20E+01	.....
	33	1077.68	1073 -	1081	1077.65	2.20E+01	25.94	9.00E+01	.....
	34	1119.85	1115 -	1124	1119.80	5.02E+01	34.83	1.44E+02	BI-214
									SC-46
	35	1271.15	1268 -	1274	1271.05	1.70E+01	17.29	4.20E+01	.....
	36	1378.11	1372 -	1384	1377.97	2.71E+01	25.66	6.37E+01	.....
	37	1461.05	1455 -	1467	1460.88	7.16E+02	58.47	6.62E+01	K-40
	38	1590.28	1586 -	1593	1590.08	1.94E+01	16.37	3.12E+01	.....
	39	1621.10	1615 -	1626	1620.88	2.00E+01	13.27	1.20E+01	BI-212
M	40	1629.65	1627 -	1635	1629.42	9.54E+00	6.80	3.50E+00	.....
m	41	1633.51	1627 -	1635	1633.29	6.44E+00	5.85	7.50E-01	.....
	42	1731.22	1727 -	1735	1730.96	1.54E+01	14.88	1.92E+01	.....
	43	1764.55	1759 -	1769	1764.28	4.54E+01	16.26	1.11E+01	BI-214
	44	1788.41	1784 -	1791	1788.13	7.11E+00	7.21	3.78E+00	.....

Analysis Report for 1707091-08

HTC-A08-BKGD01-1824-01

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
45	2104.50	2100 -	2106	2104.12	6.23E+00	8.99	9.55E+00	.....
46	2198.14	2194 -	2200	2197.72	7.50E+00	8.28	7.00E+00	.....
47	2447.72	2442 -	2450	2447.23	7.67E+00	9.41	8.67E+00	.....
48	2614.82	2608 -	2618	2614.26	6.03E+01	17.90	9.35E+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 : 8/24/2017 10:39:32AM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	16.57	6.76E+01	74.02	2.00E-04	1.73E-03
	2	63.78	1.50E+02	105.20	2.45E-02	1.81E-03
M	3	75.29	5.15E+02	120.58	2.66E-02	2.02E-03
m	4	77.46	6.62E+02	110.54	2.68E-02	2.06E-03
	5	86.98	1.72E+02	110.70	2.71E-02	2.24E-03
	6	92.94	2.61E+02	106.11	2.71E-02	2.24E-03
	7	129.21	9.79E+01	84.33	2.46E-02	2.04E-03
	8	185.90	2.08E+02	89.20	1.96E-02	1.55E-03
	9	209.04	1.44E+02	87.65	1.79E-02	1.46E-03
M	10	238.94	8.99E+02	80.88	1.61E-02	1.34E-03
m	11	241.91	2.15E+02	92.65	1.60E-02	1.33E-03
	12	272.71	1.18E+02	112.01	1.44E-02	1.20E-03
	13	295.78	2.52E+02	81.31	1.34E-02	1.15E-03
	14	328.33	3.90E+01	42.14	1.23E-02	1.08E-03
M	15	338.49	1.64E+02	53.93	1.19E-02	1.06E-03
m	16	352.22	4.05E+02	55.73	1.15E-02	1.03E-03
	17	409.94	6.25E+01	54.34	1.01E-02	9.28E-04
	18	462.81	7.70E+01	49.41	9.03E-03	8.58E-04
	19	499.64	2.52E+01	29.17	8.42E-03	8.09E-04
	20	510.91	1.52E+02	59.03	8.25E-03	7.94E-04
	21	563.21	3.73E+01	31.75	7.56E-03	7.25E-04
	22	583.15	2.49E+02	56.76	7.33E-03	6.99E-04
	23	609.62	2.89E+02	43.75	7.04E-03	6.64E-04
	24	727.32	4.06E+01	43.34	6.01E-03	5.37E-04
	25	769.27	2.65E+01	31.18	5.71E-03	5.00E-04
	26	786.41	1.96E+01	23.04	5.60E-03	4.85E-04

Analysis Report for 1707091-08

HTC-A08-BKGD01-1824-01

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	27	801.69	1.39E+02	83.31	5.51E-03	4.71E-04
M	28	906.23	1.48E+01	10.39	4.94E-03	3.85E-04
m	29	911.42	1.63E+02	35.10	4.92E-03	3.84E-04
M	30	969.21	9.17E+01	31.84	4.66E-03	3.74E-04
m	31	972.21	1.81E+01	31.08	4.65E-03	3.74E-04
	32	979.81	2.40E+01	23.75	4.62E-03	3.73E-04
	33	1077.68	2.20E+01	25.94	4.26E-03	3.57E-04
	34	1119.85	5.02E+01	34.83	4.12E-03	3.50E-04
	35	1271.15	1.70E+01	17.29	3.70E-03	3.13E-04
	36	1378.11	2.71E+01	25.66	3.47E-03	2.88E-04
	37	1461.05	7.16E+02	58.47	3.31E-03	2.75E-04
	38	1590.28	1.94E+01	16.37	3.10E-03	2.54E-04
	39	1621.10	2.00E+01	13.27	3.05E-03	2.49E-04
M	40	1629.65	9.54E+00	6.80	3.04E-03	2.48E-04
m	41	1633.51	6.44E+00	5.85	3.03E-03	2.47E-04
	42	1731.22	1.54E+01	14.88	2.91E-03	2.32E-04
	43	1764.55	4.54E+01	16.26	2.87E-03	2.26E-04
	44	1788.41	7.11E+00	7.21	2.84E-03	2.23E-04
	45	2104.50	6.23E+00	8.99	2.54E-03	2.15E-04
	46	2198.14	7.50E+00	8.28	2.47E-03	2.15E-04
	47	2447.72	7.67E+00	9.41	2.32E-03	2.15E-04
	48	2614.82	6.03E+01	17.90	2.24E-03	2.15E-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 : 8/24/2017 10:39:32AM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000055575.CNF

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	1	16.57	6.76E+01	74.02			6.76E+01	7.40E+01
	2	63.78	1.50E+02	105.20	4.12E+01	5.67E+00	1.09E+02	1.05E+02
M	3	75.29	5.15E+02	120.58			5.15E+02	1.21E+02
m	4	77.46	6.62E+02	110.54			6.62E+02	1.11E+02
	5	86.98	1.72E+02	110.70			1.72E+02	1.11E+02
	6	92.94	2.61E+02	106.11	7.98E+01	7.31E+00	1.82E+02	1.06E+02
	7	129.21	9.79E+01	84.33			9.79E+01	8.43E+01
	8	185.90	2.08E+02	89.20	3.06E+01	5.82E+00	1.77E+02	8.94E+01

Analysis Report for 1707091-08

HTC-A08-BKGD01-1824-01

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	9	209.04	1.44E+02	87.65			1.44E+02	8.77E+01
M	10	238.94	8.99E+02	80.88	1.40E+01	2.71E+00	8.85E+02	8.09E+01
m	11	241.91	2.15E+02	92.65			2.15E+02	9.26E+01
	12	272.71	1.18E+02	112.01			1.18E+02	1.12E+02
	13	295.78	2.52E+02	81.31			2.52E+02	8.13E+01
	14	328.33	3.90E+01	42.14			3.90E+01	4.21E+01
M	15	338.49	1.64E+02	53.93			1.64E+02	5.39E+01
m	16	352.22	4.05E+02	55.73	6.53E+00	4.43E+00	3.99E+02	5.59E+01
	17	409.94	6.25E+01	54.34			6.25E+01	5.43E+01
	18	462.81	7.70E+01	49.41			7.70E+01	4.94E+01
	19	499.64	2.52E+01	29.17			2.52E+01	2.92E+01
	20	510.91	1.52E+02	59.03	5.21E+01	4.74E+00	1.00E+02	5.92E+01
	21	563.21	3.73E+01	31.75			3.73E+01	3.17E+01
	22	583.15	2.49E+02	56.76			2.49E+02	5.68E+01
	23	609.62	2.89E+02	43.75	3.25E+00	2.97E+00	2.86E+02	4.38E+01
	24	727.32	4.06E+01	43.34			4.06E+01	4.33E+01
	25	769.27	2.65E+01	31.18			2.65E+01	3.12E+01
	26	786.41	1.96E+01	23.04			1.96E+01	2.30E+01
	27	801.69	1.39E+02	83.31			1.39E+02	8.33E+01
M	28	906.23	1.48E+01	10.39			1.48E+01	1.04E+01
m	29	911.42	1.63E+02	35.10	2.85E+00	2.76E+00	1.60E+02	3.52E+01
M	30	969.21	9.17E+01	31.84			9.17E+01	3.18E+01
m	31	972.21	1.81E+01	31.08			1.81E+01	3.11E+01
	32	979.81	2.40E+01	23.75			2.40E+01	2.37E+01
	33	1077.68	2.20E+01	25.94			2.20E+01	2.59E+01
	34	1119.85	5.02E+01	34.83			5.02E+01	3.48E+01
	35	1271.15	1.70E+01	17.29			1.70E+01	1.73E+01
	36	1378.11	2.71E+01	25.66			2.71E+01	2.57E+01
	37	1461.05	7.16E+02	58.47	1.00E+00	1.77E+00	7.15E+02	5.85E+01
	38	1590.28	1.94E+01	16.37			1.94E+01	1.64E+01
	39	1621.10	2.00E+01	13.27			2.00E+01	1.33E+01
M	40	1629.65	9.54E+00	6.80			9.54E+00	6.80E+00
m	41	1633.51	6.44E+00	5.85			6.44E+00	5.85E+00
	42	1731.22	1.54E+01	14.88			1.54E+01	1.49E+01
	43	1764.55	4.54E+01	16.26			4.54E+01	1.63E+01
	44	1788.41	7.11E+00	7.21			7.11E+00	7.21E+00
	45	2104.50	6.23E+00	8.99			6.23E+00	8.99E+00
	46	2198.14	7.50E+00	8.28			7.50E+00	8.28E+00
	47	2447.72	7.67E+00	9.41			7.67E+00	9.41E+00
	48	2614.82	6.03E+01	17.90	1.86E+00	1.12E+00	5.85E+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 1707091-08

HTC-A08-BKGD01-1824-01

AREA CORRECTION REPORT
REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 8/24/2017 10:39:32AM

Ref. Peak Energy : 0.00 Reference Date :
Peak Ratio : 0.00 Uncertainty : 0.00
Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000055575.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	16.57	6.76E+01	74.02			6.76E+01	7.40E+01
	2	63.78	1.50E+02	105.20	4.12E+01	5.67E+00	1.09E+02	1.05E+02
M	3	75.29	5.15E+02	120.58			5.15E+02	1.21E+02
m	4	77.46	6.62E+02	110.54			6.62E+02	1.11E+02
	5	86.98	1.72E+02	110.70			1.72E+02	1.11E+02
	6	92.94	2.61E+02	106.11	7.98E+01	7.31E+00	1.82E+02	1.06E+02
	7	129.21	9.79E+01	84.33			9.79E+01	8.43E+01
	8	185.90	2.08E+02	89.20	3.06E+01	5.82E+00	1.77E+02	8.94E+01
	9	209.04	1.44E+02	87.65			1.44E+02	8.77E+01
M	10	238.94	8.99E+02	80.88	1.40E+01	2.71E+00	8.85E+02	8.09E+01
m	11	241.91	2.15E+02	92.65			2.15E+02	9.26E+01
	12	272.71	1.18E+02	112.01			1.18E+02	1.12E+02
	13	295.78	2.52E+02	81.31			2.52E+02	8.13E+01
	14	328.33	3.90E+01	42.14			3.90E+01	4.21E+01
M	15	338.49	1.64E+02	53.93			1.64E+02	5.39E+01
m	16	352.22	4.05E+02	55.73	6.53E+00	4.43E+00	3.99E+02	5.59E+01
	17	409.94	6.25E+01	54.34			6.25E+01	5.43E+01
	18	462.81	7.70E+01	49.41			7.70E+01	4.94E+01
	19	499.64	2.52E+01	29.17			2.52E+01	2.92E+01
	20	510.91	1.52E+02	59.03	5.21E+01	4.74E+00	1.00E+02	5.92E+01
	21	563.21	3.73E+01	31.75			3.73E+01	3.17E+01
	22	583.15	2.49E+02	56.76			2.49E+02	5.68E+01
	23	609.62	2.89E+02	43.75	3.25E+00	2.97E+00	2.86E+02	4.38E+01
	24	727.32	4.06E+01	43.34			4.06E+01	4.33E+01
	25	769.27	2.65E+01	31.18			2.65E+01	3.12E+01
	26	786.41	1.96E+01	23.04			1.96E+01	2.30E+01
	27	801.69	1.39E+02	83.31			1.39E+02	8.33E+01
M	28	906.23	1.48E+01	10.39			1.48E+01	1.04E+01
m	29	911.42	1.63E+02	35.10	2.85E+00	2.76E+00	1.60E+02	3.52E+01
M	30	969.21	9.17E+01	31.84			9.17E+01	3.18E+01
m	31	972.21	1.81E+01	31.08			1.81E+01	3.11E+01
	32	979.81	2.40E+01	23.75			2.40E+01	2.37E+01
	33	1077.68	2.20E+01	25.94			2.20E+01	2.59E+01
	34	1119.85	5.02E+01	34.83			5.02E+01	3.48E+01
	35	1271.15	1.70E+01	17.29			1.70E+01	1.73E+01
	36	1378.11	2.71E+01	25.66			2.71E+01	2.57E+01
	37	1461.05	7.16E+02	58.47	1.00E+00	1.77E+00	7.15E+02	5.85E+01
	38	1590.28	1.94E+01	16.37			1.94E+01	1.64E+01
	39	1621.10	2.00E+01	13.27			2.00E+01	1.33E+01
M	40	1629.65	9.54E+00	6.80			9.54E+00	6.80E+00
m	41	1633.51	6.44E+00	5.85			6.44E+00	5.85E+00

Analysis Report for 1707091-08

HTC-A08-BKGD01-1824-01

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
42	1731.22	1.54E+01	14.88			1.54E+01	1.49E+01
43	1764.55	4.54E+01	16.26			4.54E+01	1.63E+01
44	1788.41	7.11E+00	7.21			7.11E+00	7.21E+00
45	2104.50	6.23E+00	8.99			6.23E+00	8.99E+00
46	2198.14	7.50E+00	8.28			7.50E+00	8.28E+00
47	2447.72	7.67E+00	9.41			7.67E+00	9.41E+00
48	2614.82	6.03E+01	17.90	1.86E+00	1.12E+00	5.85E+01	1.79E+01

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

NUCLIDE IDENTIFICATION REPORT

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

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.991	1460.81	*	10.67	2.36E+01	2.79E+00
NB-93M	1.000	16.57	*	9.43	4.23E+01	3.68E+02
SN-126	0.946	87.57	*	37.00	1.99E-01	1.29E-01
EU-155	0.341	86.50	*	30.90	2.47E-01	1.61E-01
		105.30		20.70		
LU-173	0.552	100.72		5.24		
		272.11	*	21.20	5.18E-01	4.92E-01
TL-208	0.886	583.14	*	30.22	1.31E+00	3.24E-01
		860.37		4.48		
		2614.66	*	35.85	8.48E-01	2.73E-01
BI-212	0.990	727.17	*	11.80	6.67E-01	7.14E-01
		1620.62	*	2.75	2.77E+00	1.85E+00
PB-212	0.882	238.63	*	44.60	1.43E+00	1.77E-01
		300.09		3.41		
BI-214	0.919	609.31	*	46.30	1.02E+00	1.84E-01
		1120.29	*	15.10	9.40E-01	6.57E-01
		1764.49	*	15.80	1.17E+00	4.28E-01
		2204.22		4.98		
PB-214	0.973	295.21	*	19.19	1.14E+00	3.80E-01
		351.92	*	37.19	1.08E+00	1.80E-01
RA-224	0.870	240.98	*	3.95	3.97E+00	1.74E+00
RA-226	0.985	186.21	*	3.28	3.21E+00	6.10E+00
AC-228	0.989	338.32	*	11.40	1.40E+00	4.78E-01
		911.07	*	27.70	1.36E+00	3.19E-01

Analysis Report for 1707091-08

HTC-A08-BKGD01-1824-01

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
AC-228	0.989	969.11	*	16.60	1.38E+00	4.92E-01
TH-234	0.963	63.29	*	3.80	1.36E+00	1.32E+00
NP-237	0.964	86.50	*	12.60	5.84E-01	3.80E-01
AM-243	0.940	74.67	*	66.00	3.42E-01	8.42E-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 : 8/24/2017 10:39:32AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
m	4	77.46	1.83980E-01	8.35	Tol.	TI-44
	6	92.94	5.04208E-02	29.30	Tol.	GA-67
	7	129.21	2.71833E-02	43.09		
	9	209.04	3.98833E-02	30.52	Tol.	GA-67
						CM-243
	14	328.33	1.08333E-02	54.03	Sum	
	17	409.94	1.73495E-02	43.50	Tol.	HO-166M
	18	462.81	2.13901E-02	32.08	Tol.	SB-125
	19	499.64	7.00397E-03	57.85		
	20	510.91	2.77709E-02	29.62	Sum	
	21	563.21	1.03652E-02	42.54	Tol.	CS-134
	25	769.27	7.36532E-03	58.79	Sum	
	26	786.41	5.43651E-03	58.87		
	27	801.69	3.87141E-02	29.89	Sum	
M	28	906.23	4.10818E-03	35.13	Sum	
m	31	972.21	5.02217E-03	85.94		
	32	979.81	6.66667E-03	49.48		
	33	1077.68	6.10489E-03	59.02		
	35	1271.15	4.72222E-03	50.86		
	36	1378.11	7.53766E-03	47.28		
	38	1590.28	5.38889E-03	42.19		
M	40	1629.65	2.64904E-03	35.66		
m	41	1633.51	1.78902E-03	45.43		
	42	1731.22	4.27778E-03	48.32		
	44	1788.41	1.97531E-03	50.70		

Analysis Report for 1707091-08

HTC-A08-BKGD01-1824-01

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
45	2104.50	1.72980E-03	72.15	S-Esc	
46	2198.14	2.08333E-03	55.18		
47	2447.72	2.12963E-03	61.35		

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

NUCLIDE IDENTIFICATION REPORT

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

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.99	1460.81	*	10.67	2.36E+01	2.79E+00
NB-93M	1.00	16.57	*	9.43	4.23E+01	3.68E+02
SN-126	0.94	87.57	*	37.00	1.99E-01	1.29E-01
EU-155	0.34	86.50	*	30.90	2.47E-01	1.61E-01
		105.30		20.70		
LU-173	0.55	100.72		5.24		
		272.11	*	21.20	5.18E-01	4.92E-01
TL-208	0.88	583.14	*	30.22	1.31E+00	3.24E-01
		860.37		4.48		
		2614.66	*	35.85	8.48E-01	2.73E-01
BI-212	0.99	727.17	*	11.80	6.67E-01	7.14E-01
		1620.62	*	2.75	2.77E+00	1.85E+00
PB-212	0.88	238.63	*	44.60	1.43E+00	1.77E-01
		300.09		3.41		
BI-214	0.91	609.31	*	46.30	1.02E+00	1.84E-01
		1120.29	*	15.10	9.40E-01	6.57E-01
		1764.49	*	15.80	1.17E+00	4.28E-01
		2204.22		4.98		
PB-214	0.97	295.21	*	19.19	1.14E+00	3.80E-01
		351.92	*	37.19	1.08E+00	1.80E-01
RA-224	0.87	240.98	*	3.95	3.97E+00	1.74E+00
RA-226	0.98	186.21	*	3.28	3.21E+00	6.10E+00
AC-228	0.98	338.32	*	11.40	1.40E+00	4.78E-01
		911.07	*	27.70	1.36E+00	3.19E-01
		969.11	*	16.60	1.38E+00	4.92E-01

Analysis Report for 1707091-08

HTC-A08-BKGD01-1824-01

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
TH-234	0.96	63.29	*	3.80	1.36E+00	1.32E+00
NP-237	0.96	86.50	*	12.60	5.84E-01	3.80E-01
AM-243	0.94	74.67	*	66.00	3.42E-01	8.42E-02

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

INTERFERENCE CORRECTED REPORT

	Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
	K-40	0.991	2.36E+01	2.79E+00	
	NB-93M	1.000	4.23E+01	3.68E+02	
?	SN-126	0.946	1.99E-01	1.29E-01	
?	EU-155	0.341	2.47E-01	1.61E-01	
	LU-173	0.552	5.18E-01	4.92E-01	
	TL-208	0.886	1.04E+00	2.09E-01	
	BI-212	0.990	9.40E-01	6.67E-01	
	PB-212	0.882	1.43E+00	1.77E-01	
	BI-214	0.919	1.04E+00	1.64E-01	
	PB-214	0.973	1.09E+00	1.63E-01	
	RA-224	0.870	3.97E+00	1.74E+00	
	RA-226	0.985	3.21E+00	6.10E+00	
	AC-228	0.989	1.38E+00	2.33E-01	
	TH-234	0.963	1.36E+00	1.32E+00	
?	NP-237	0.964	5.84E-01	3.80E-01	
	AM-243	0.940	3.42E-01	8.42E-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 1707091-08

HTC-A08-BKGD01-1824-01

UNIDENTIFIED PEAKS

Peak Locate Performed on : 8/24/2017 10:39:32AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
m	4	77.46	1.83980E-01	8.35	Tol.	TI-44
	6	92.94	5.04208E-02	29.30	Tol.	GA-67
	7	129.21	2.71833E-02	43.09		
	9	209.04	3.98833E-02	30.52	Tol.	GA-67
						CM-243
	14	328.33	1.08333E-02	54.03	Sum	
	17	409.94	1.73495E-02	43.50	Tol.	HO-166M
	18	462.81	2.13901E-02	32.08	Tol.	SB-125
	19	499.64	7.00397E-03	57.85		
	20	510.91	2.77709E-02	29.62	Sum	
	21	563.21	1.03652E-02	42.54	Tol.	CS-134
	25	769.27	7.36532E-03	58.79	Sum	
	26	786.41	5.43651E-03	58.87		
	27	801.69	3.87141E-02	29.89	Sum	
M	28	906.23	4.10818E-03	35.13	Sum	
m	31	972.21	5.02217E-03	85.94		
	32	979.81	6.66667E-03	49.48		
	33	1077.68	6.10489E-03	59.02		
	35	1271.15	4.72222E-03	50.86		
	36	1378.11	7.53766E-03	47.28		
	38	1590.28	5.38889E-03	42.19		
M	40	1629.65	2.64904E-03	35.66		
m	41	1633.51	1.78902E-03	45.43		
	42	1731.22	4.27778E-03	48.32		
	44	1788.41	1.97531E-03	50.70		
	45	2104.50	1.72980E-03	72.15	S-Esc	
	46	2198.14	2.08333E-03	55.18		
	47	2447.72	2.12963E-03	61.35		

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 1707091-08

HTC-A08-BKGD01-1824-01

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	-1.23E+00	2.51E+00	2.51E+00
+	NA-22	1274.54		99.94	2.21E-02	1.11E-01	1.11E-01
+	@ NA-24	1368.53		99.99	1.00E+26	1.00E+26	1.00E+26
	@	2754.09		99.86	1.00E+26		1.00E+26
+	AL-26	1808.65		99.76	6.91E-04	5.85E-02	5.85E-02
+	K-40	1460.81	*	10.67	2.36E+01	1.38E+00	1.38E+00
+	@ AR-41	1293.64		99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88		94.40	3.60E-02	6.25E-02	6.25E-02
		78.34		96.00	1.91E-01		7.80E-02
+	SC-46	889.25		99.98	-8.42E-02	1.95E-01	1.95E-01
		1120.51		99.99	2.59E-01		3.15E-01
+	V-48	983.52		99.98	-4.81E-01	6.33E+00	6.33E+00
		1312.10		97.50	-1.78E+00		7.33E+00
+	CR-51	320.08		9.83	-7.81E-01	7.89E+00	7.89E+00
+	MN-54	834.83		99.97	4.40E-03	1.11E-01	1.11E-01
+	CO-56	846.75		99.96	9.02E-02	2.06E-01	2.06E-01
		1037.75		14.03	1.02E+00		1.76E+00
		1238.25		67.00	2.09E-01		5.06E-01
		1771.40		15.51	-3.13E-01		1.01E+00
		2598.48		16.90	1.24E-01		8.03E-01
+	CO-57	122.06		85.51	-7.81E-03	6.95E-02	6.95E-02
		136.48		10.60	-1.39E-01		5.80E-01
+	CO-58	810.76		99.40	-4.17E-03	2.35E-01	2.35E-01
+	FE-59	1099.22		56.50	-5.16E-01	8.00E-01	8.00E-01
		1291.56		43.20	1.86E-01		1.16E+00
+	CO-60	1173.22		100.00	7.26E-03	9.70E-02	1.21E-01
		1332.49		100.00	-3.18E-02		9.70E-02
+	ZN-65	1115.52		50.75	-2.96E-02	2.89E-01	2.89E-01
+	GA-67	93.31		35.70	5.36E+08	3.35E+08	3.35E+08
		208.95		2.24	9.17E+09		6.36E+09
		300.22		16.00	-1.53E+08		9.60E+08
+	SE-75	121.11		16.70	4.91E-02	1.44E-01	4.95E-01
		136.00		59.20	-5.93E-03		1.44E-01
		264.65		59.80	4.03E-02		1.82E-01
		279.53		25.20	4.14E-02		4.32E-01
		400.65		11.40	7.42E-04		1.04E+00
+	RB-82	776.52		13.00	-2.99E+00	9.81E+00	9.81E+00
+	RB-83	520.41		46.00	8.89E-02	3.44E-01	3.44E-01
		529.64		30.30	1.42E-01		5.48E-01
		552.65		16.40	-3.22E-01		9.63E-01

Analysis Report for 1707091-08

HTC-A08-BKGD01-1824-01

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	KR-85	513.99		0.43	2.75E+01	2.35E+01	2.35E+01
+	SR-85	513.99		99.27	3.47E-01	2.97E-01	2.97E-01
+	Y-88	898.02		93.40	-8.29E-03	1.47E-01	1.95E-01
		1836.01		99.38	7.37E-04		1.47E-01
+	MO-93	263.06		56.72	3.52E-02	6.61E-02	1.11E-01
		684.67		99.68	3.23E-02		7.91E-02
		1477.11		99.08	-3.20E-02		6.61E-02
+	NB-93M	16.57	*	9.43	4.23E+01	7.60E+01	7.60E+01
+	NB-94	702.63		100.00	-5.37E-03	8.17E-02	8.23E-02
		871.10		100.00	-8.45E-03		8.17E-02
+	NB-95	765.79		99.81	5.23E-02	6.62E-01	6.62E-01
+	NB-95M	235.69		25.00	1.47E+08	1.08E+08	1.08E+08
+	ZR-95	724.18		43.70	-7.38E-03	5.04E-01	6.61E-01
		756.72		55.30	2.79E-01		5.04E-01
+	MO-99	181.06		6.20	1.38E+10	7.61E+10	9.05E+10
		739.58		12.80	6.28E+09		7.61E+10
		778.00		4.50	-5.23E+10		2.06E+11
+	RU-103	497.08		89.00	3.63E-02	4.91E-01	4.91E-01
+	RU-106	621.84		9.80	-2.75E-02	9.42E-01	9.42E-01
+	AG-108M	433.93		89.90	6.50E-03	7.59E-02	7.59E-02
		614.37		90.40	9.02E-03		1.00E-01
		722.95		90.50	-4.97E-03		9.99E-02
+	CD-109	88.03		3.72	1.70E+00	1.95E+00	1.95E+00
+	AG-110M	657.75		93.14	-2.93E-02	1.19E-01	1.19E-01
		677.61		10.53	-4.57E-01		8.65E-01
		706.67		16.46	-1.90E-01		6.02E-01
		763.93		21.98	-5.18E-02		4.87E-01
		884.67		71.63	2.16E-02		1.54E-01
		1384.27		23.94	-6.12E-02		4.18E-01
+	CD-113M	263.70		0.02	4.68E+01	2.68E+02	2.68E+02
+	SN-113	255.12		1.93	1.11E+00	1.87E-01	5.94E+00
		391.69		64.90	-3.56E-02		1.87E-01
+	TE123M	159.00		84.10	-3.39E-02	9.98E-02	9.98E-02
+	SB-124	602.71		97.87	-2.80E-01	2.53E-01	2.53E-01
		645.85		7.26	1.68E+00		3.42E+00
		722.78		11.10	-1.29E-01		2.60E+00
		1691.02		49.00	3.08E-02		3.37E-01
+	I-125	35.49		6.49	2.10E+00	6.02E+00	6.02E+00
+	SB-125	176.33		6.89	-1.57E-01	2.42E-01	7.49E-01
		427.89		29.33	2.92E-02		2.42E-01
		463.38		10.35	8.17E-01		8.59E-01
		600.56		17.80	4.45E-02		4.74E-01
		635.90		11.32	6.79E-02		6.68E-01
+	SB-126	414.70		83.30	-1.14E+00	2.09E+01	2.09E+01
		666.33		99.60	1.03E+01		2.41E+01
		695.00		99.60	6.85E+00		2.36E+01
		720.50		53.80	-9.44E+00		4.53E+01
+	SN-126	87.57	*	37.00	1.99E-01	2.08E-01	2.08E-01

Analysis Report for 1707091-08

HTC-A08-BKGD01-1824-01

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	SB-127	473.00	25.00	6.22E+06	1.68E+07	2.33E+07
		685.20	35.70	6.86E+06		1.68E+07
		783.80	14.70	1.04E+07		5.00E+07
+	I-129	29.78	57.00	1.67E-01	3.85E-01	3.85E-01
		33.60	13.20	-4.02E-01		1.08E+00
		39.58	7.52	-9.58E-01		1.19E+00
+	I-131	284.30	6.05	-6.97E+02	4.39E+02	5.61E+03
		364.48	81.20	-1.18E+02		4.39E+02
		636.97	7.26	2.36E+03		5.91E+03
		722.89	1.80	-1.49E+03		3.00E+04
+	TE-132	49.72	13.10	2.07E+08	1.47E+08	1.06E+09
		228.16	88.00	-7.63E+07		1.47E+08
+	BA-133	81.00	33.00	-6.56E-01	1.58E-01	1.70E-01
		302.84	17.80	-6.18E-02		3.92E-01
		356.01	60.00	-5.11E-03		1.58E-01
+	@ I-133	529.87	86.30	1.00E+26	1.00E+26	1.00E+26
+	XE-133	81.00	38.00	-3.47E+05	8.99E+04	8.99E+04
+	CS-134	563.23	8.38	4.57E-01	9.75E-02	9.93E-01
		569.32	15.43	-1.16E-01		4.87E-01
		604.70	97.60	-5.01E-02		9.75E-02
		795.84	85.40	1.41E-01		1.37E-01
		801.93	8.73	-6.88E-01		1.07E+00
+	CS-135	268.24	16.00	7.25E-03	4.13E-01	4.13E-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	-1.44E+01	1.80E+01	1.34E+02
		163.89	4.61	-8.39E+00		2.10E+02
		176.55	13.56	-1.52E+01		7.22E+01
		273.65	12.66	1.51E+01		1.07E+02
		340.57	48.50	5.79E+01		3.53E+01
		818.50	99.70	1.18E+00		1.80E+01
		1048.07	79.60	1.02E+01		2.49E+01
		1235.34	19.70	1.20E+01		1.41E+02
+	CS-137	661.65	85.12	4.62E-02	1.05E-01	1.05E-01
+	LA-138	788.74	34.00	-1.54E-01	1.18E-01	2.57E-01
		1435.80	66.00	7.30E-03		1.18E-01
+	CE-139	165.85	80.35	-1.24E-02	9.95E-02	9.95E-02
+	BA-140	162.64	6.70	2.65E+01	6.24E+01	1.69E+02
		304.84	4.50	-1.26E+02		3.34E+02
		423.70	3.20	1.44E+02		5.11E+02
		437.55	2.00	-2.25E+01		8.54E+02
		537.32	25.00	-1.89E+01		6.24E+01
+	LA-140	328.77	20.50	2.07E+01	2.43E+01	8.03E+01
		487.03	45.50	4.11E+00		3.82E+01
		815.85	23.50	2.15E+01		8.83E+01
		1596.49	95.49	4.44E+00		2.43E+01
+	CE-141	145.44	48.40	-6.14E-01	8.46E-01	8.46E-01
+	@ CE-143	57.36	11.80	1.00E+26	1.00E+26	1.00E+26

Analysis Report for 1707091-08

HTC-A08-BKGD01-1824-01

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
@	CE-143	293.26		42.00	1.00E+26	1.00E+26	1.00E+26
@		664.55		5.20	1.00E+26		1.00E+26
+	CE-144	133.54		10.80	-1.69E-02	5.59E-01	5.59E-01
+	PM-144	476.78		42.00	7.65E-03	9.07E-02	2.12E-01
		618.01		98.60	4.36E-02		9.07E-02
		696.49		99.49	3.49E-03		1.01E-01
+	PM-145	36.85		21.70	9.14E-02	2.70E-01	5.13E-01
		37.36		39.70	4.49E-02		2.70E-01
		42.30		15.10	-2.78E-01		5.45E-01
		72.40		2.31	-8.40E+00		2.82E+00
+	PM-146	453.90		39.94	6.65E-03	1.83E-01	1.83E-01
		735.90		14.01	2.75E-02		6.03E-01
		747.13		13.10	1.51E-01		6.75E-01
+	ND-147	91.11		28.90	-2.75E+01	1.24E+02	1.24E+02
		531.02		13.10	6.57E+01		3.29E+02
+	PM-149	285.90		3.10	-2.68E+13	1.02E+14	1.02E+14
+	EU-152	121.78		20.50	-2.55E-02	2.27E-01	2.27E-01
		244.69		5.40	-2.38E+00		1.39E+00
		344.27		19.13	-6.67E-01		3.43E-01
		778.89		9.20	2.28E-01		9.71E-01
		964.01		10.40	2.02E-01		1.06E+00
		1085.78		7.22	3.62E-01		1.38E+00
		1112.02		9.60	1.83E-01		1.22E+00
		1407.95		14.94	1.22E-01		6.34E-01
+	GD-153	97.43		31.30	1.12E-02	1.94E-01	1.94E-01
		103.18		22.20	-3.01E-01		2.53E-01
+	EU-154	123.07		40.50	-3.07E-02	1.17E-01	1.17E-01
		723.30		19.70	-2.33E-02		4.69E-01
		873.19		11.50	-3.04E-01		7.01E-01
		996.32		10.30	3.30E-02		9.83E-01
		1004.76		17.90	5.44E-03		5.24E-01
		1274.45		35.50	5.90E-02		2.98E-01
+	EU-155	86.50	*	30.90	2.47E-01	2.25E-01	2.59E-01
		105.30		20.70	3.62E-02		2.25E-01
+	EU-156	811.77		10.40	9.73E+00	8.31E+01	8.31E+01
		1153.47		7.20	6.35E+01		1.59E+02
		1230.71		8.90	-1.23E+00		1.43E+02
+	HO-166M	184.41		72.60	1.42E-01	8.67E-02	8.67E-02
		280.45		29.60	-5.05E-02		1.97E-01
		410.94		11.10	5.26E-01		6.56E-01
		711.69		54.10	-5.99E-02		1.38E-01
+	TM-171	66.72		0.14	1.07E+01	4.79E+01	4.79E+01
+	HF-172	67.35		5.31	7.09E-01	4.65E-01	1.23E+00
		125.81		11.30	-8.77E-02		4.65E-01
+	LU-172	181.53		20.60	4.80E+02	5.13E+03	8.63E+03
		900.72		29.81	-8.47E+02		1.09E+04
		1093.66		62.50	4.52E+02		5.13E+03
+	LU-173	100.72		5.24	1.88E-01	8.03E-01	9.62E-01
		272.11	*	21.20	5.18E-01		8.03E-01

Analysis Report for 1707091-08

HTC-A08-BKGD01-1824-01

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	HF-175	343.40		84.00	-4.06E-01	2.08E-01	2.08E-01
+	LU-176	88.34		13.30	2.69E-01	6.03E-02	4.76E-01
		201.83		86.00	-1.15E-02		6.03E-02
		306.78		94.00	2.47E-02		6.67E-02
+	HF-181	133.02		41.70	9.91E-02	4.66E-01	5.92E-01
		345.85		17.20	-3.90E+00		1.96E+00
		482.03		82.80	1.13E-01		4.66E-01
+	TA-182	67.75		41.20	1.52E-01	2.63E-01	2.63E-01
		1121.30		34.90	6.46E-01		7.25E-01
		1189.05		16.23	3.10E-01		1.23E+00
		1221.41		26.98	4.36E-01		9.31E-01
		1231.02		11.44	-1.76E-02		2.05E+00
+	IR-192	308.46		29.68	-3.02E-01	3.77E-01	5.18E-01
		468.07		48.10	1.11E-03		3.77E-01
+	HG-203	279.19		77.30	7.24E-02	3.54E-01	3.54E-01
+	TL-204	374.74		94.11	1.54E-02	7.62E-02	7.62E-02
		899.15		99.16	2.53E-02		1.03E-01
		911.74		91.10	4.18E-01		1.89E-01
+	BI-207	569.67		97.72	-9.17E-04	7.26E-02	7.26E-02
		1063.62		74.90	2.69E-02		1.34E-01
+	TL-208	583.14	*	30.22	1.31E+00	2.63E-01	4.22E-01
		860.37		4.48	1.03E+00		2.13E+00
		2614.66	*	35.85	8.48E-01		2.63E-01
+	BI-210M	262.00		45.00	4.70E-02	1.39E-01	1.39E-01
		300.00		23.00	-5.16E-02		3.25E-01
+	PB-210	46.50		4.25	1.83E+00	1.80E+00	1.80E+00
+	PB-211	404.84		2.90	-8.76E-02	2.33E+00	2.33E+00
		831.96		2.90	-1.66E+00		2.85E+00
+	BI-212	727.17	*	11.80	6.67E-01	1.16E+00	1.16E+00
		1620.62	*	2.75	2.77E+00		2.61E+00
+	PB-212	238.63	*	44.60	1.43E+00	2.72E-01	2.72E-01
		300.09		3.41	-3.48E-01		2.19E+00
+	BI-214	609.31	*	46.30	1.02E+00	1.74E-01	1.74E-01
		1120.29	*	15.10	9.40E-01		1.03E+00
		1764.49	*	15.80	1.17E+00		4.55E-01
		2204.22		4.98	-1.58E-01		1.65E+00
+	PB-214	295.21	*	19.19	1.14E+00	5.17E-01	5.68E-01
		351.92	*	37.19	1.08E+00		5.17E-01
+	RN-219	401.80		6.50	8.18E-02	1.02E+00	1.02E+00
+	RA-223	323.87		3.88	7.28E-01	1.68E+00	1.68E+00
+	RA-224	240.98	*	3.95	3.97E+00	3.12E+00	3.12E+00
+	RA-225	40.00		31.00	-2.56E+01	3.19E+01	3.19E+01
+	RA-226	186.21	*	3.28	3.21E+00	2.59E+00	2.59E+00
+	TH-227	50.10		8.40	1.53E-01	7.82E-01	7.82E-01
		236.00		11.50	1.24E+00		9.06E-01
		256.20		6.30	3.74E-01		1.01E+00
+	AC-228	338.32	*	11.40	1.40E+00	5.45E-01	1.64E+00
		911.07	*	27.70	1.36E+00		5.45E-01

Analysis Report for 1707091-08

HTC-A08-BKGD01-1824-01

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	AC-228	969.11	*	16.60	1.38E+00	5.45E-01	9.88E-01
+	TH-230	48.44		16.90	1.90E-01	4.20E-01	4.20E-01
		62.85		4.60	9.96E-01		1.42E+00
		67.67		0.37	9.16E+00		1.59E+01
+	PA-231	283.67		1.60	2.46E-01	2.97E+00	3.63E+00
		302.67		2.30	-4.69E-01		2.97E+00
+	TH-231	25.64		14.70	-1.62E+00	8.85E-01	2.71E+00
		84.21		6.40	-5.81E-01		8.85E-01
+	PA-233	311.98		38.60	3.96E-01	2.11E+00	2.11E+00
+	PA-234	131.20		20.40	1.48E-01	2.52E-01	2.52E-01
		733.99		8.80	1.44E-01		9.12E-01
		946.00		12.00	2.55E-01		8.19E-01
+	PA-234M	1001.03		0.92	-2.28E+00	1.01E+01	1.01E+01
+	TH-234	63.29	*	3.80	1.36E+00	2.15E+00	2.15E+00
+	U-235	143.76		10.50	6.72E-02	4.70E-01	4.70E-01
		163.35		4.70	-4.04E-02		1.01E+00
		205.31		4.70	-1.01E-01		1.36E+00
+	NP-237	86.50	*	12.60	5.84E-01	6.11E-01	6.11E-01
+	NP-239	106.10		22.70	2.50E+11	1.56E+12	1.56E+12
		228.18		10.70	-2.36E+12		4.54E+12
		277.60		14.10	1.68E+12		3.51E+12
+	AM-241	59.54		35.90	4.76E-02	1.72E-01	1.72E-01
+	AM-243	74.67	*	66.00	3.42E-01	1.67E-01	1.67E-01
+	CM-243	209.75		3.29	2.24E+00	4.51E-01	2.12E+00
		228.14		10.60	-3.05E-01		5.87E-01
		277.60		14.00	2.17E-01		4.51E-01

+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction
? = CAUTION: MDA value is inconsistent with Currie MDA at 95% confidence level

NUCLIDE MDA REPORT

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

Analysis Report for 1707091-08

HTC-A08-BKGD01-1824-01

	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	2.51E+00	2.51E+00	-1.23E+00	1.19E+00
	NA-22	1274.54		99.94	1.11E-01	1.11E-01	2.21E-02	5.12E-02
@	NA-24	1368.53		99.99	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		2754.09		99.86	1.00E+26		1.00E+26	1.00E+20
	AL-26	1808.65		99.76	5.85E-02	5.85E-02	6.91E-04	2.36E-02
+	K-40	1460.81	*	10.67	1.38E+00	1.38E+00	2.36E+01	6.43E-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	6.25E-02	6.25E-02	3.60E-02	3.06E-02
		78.34		96.00	7.80E-02		1.91E-01	3.84E-02
	SC-46	889.25		99.98	1.95E-01	1.95E-01	-8.42E-02	9.03E-02
		1120.51		99.99	3.15E-01		2.59E-01	1.48E-01
	V-48	983.52		99.98	6.33E+00	6.33E+00	-4.81E-01	2.89E+00
		1312.10		97.50	7.33E+00		-1.78E+00	3.31E+00
	CR-51	320.08		9.83	7.89E+00	7.89E+00	-7.81E-01	3.79E+00
	MN-54	834.83		99.97	1.11E-01	1.11E-01	4.40E-03	5.18E-02
	CO-56	846.75		99.96	2.06E-01	2.06E-01	9.02E-02	9.55E-02
		1037.75		14.03	1.76E+00		1.02E+00	8.20E-01
		1238.25		67.00	5.06E-01		2.09E-01	2.38E-01
		1771.40		15.51	1.01E+00		-3.13E-01	4.20E-01
		2598.48		16.90	8.03E-01		1.24E-01	3.00E-01
	CO-57	122.06		85.51	6.95E-02	6.95E-02	-7.81E-03	3.38E-02
		136.48		10.60	5.80E-01		-1.39E-01	2.82E-01
	CO-58	810.76		99.40	2.35E-01	2.35E-01	-4.17E-03	1.10E-01
	FE-59	1099.22		56.50	8.00E-01	8.00E-01	-5.16E-01	3.68E-01
		1291.56		43.20	1.16E+00		1.86E-01	5.33E-01
	CO-60	1173.22		100.00	1.21E-01	9.70E-02	7.26E-03	5.63E-02
		1332.49		100.00	9.70E-02		-3.18E-02	4.39E-02
	ZN-65	1115.52		50.75	2.89E-01	2.89E-01	-2.96E-02	1.34E-01
	GA-67	93.31		35.70	3.35E+08	3.35E+08	5.36E+08	1.64E+08
		208.95		2.24	6.36E+09		9.17E+09	3.10E+09
		300.22		16.00	9.60E+08		-1.53E+08	4.65E+08
	SE-75	121.11		16.70	4.95E-01	1.44E-01	4.91E-02	2.41E-01
		136.00		59.20	1.44E-01		-5.93E-03	7.03E-02
		264.65		59.80	1.82E-01		4.03E-02	8.80E-02
		279.53		25.20	4.32E-01		4.14E-02	2.08E-01
		400.65		11.40	1.04E+00		7.42E-04	4.97E-01
	RB-82	776.52		13.00	9.81E+00	9.81E+00	-2.99E+00	4.58E+00
	RB-83	520.41		46.00	3.44E-01	3.44E-01	8.89E-02	1.62E-01
		529.64		30.30	5.48E-01		1.42E-01	2.59E-01
		552.65		16.40	9.63E-01		-3.22E-01	4.54E-01
	KR-85	513.99		0.43	2.35E+01	2.35E+01	2.75E+01	1.13E+01
	SR-85	513.99		99.27	2.97E-01	2.97E-01	3.47E-01	1.43E-01
	Y-88	898.02		93.40	1.95E-01	1.47E-01	-8.29E-03	9.11E-02
		1836.01		99.38	1.47E-01		7.37E-04	6.26E-02
	MO-93	263.06		56.72	1.11E-01	6.61E-02	3.52E-02	5.37E-02
		684.67		99.68	7.91E-02		3.23E-02	3.70E-02
		1477.11		99.08	6.61E-02		-3.20E-02	2.81E-02
+	NB-93M	16.57	*	9.43	7.60E+01	7.60E+01	4.23E+01	3.72E+01
	NB-94	702.63		100.00	8.23E-02	8.17E-02	-5.37E-03	3.86E-02
		871.10		100.00	8.17E-02		-8.45E-03	3.78E-02
	NB-95	765.79		99.81	6.62E-01	6.62E-01	5.23E-02	3.11E-01

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	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	NB-95M	235.69		25.00	1.08E+08	1.08E+08	1.47E+08	5.29E+07
	ZR-95	724.18		43.70	6.61E-01	5.04E-01	-7.38E-03	3.12E-01
		756.72		55.30	5.04E-01		2.79E-01	2.38E-01
	MO-99	181.06		6.20	9.05E+10	7.61E+10	1.38E+10	4.39E+10
		739.58		12.80	7.61E+10		6.28E+09	3.58E+10
		778.00		4.50	2.06E+11		-5.23E+10	9.63E+10
	RU-103	497.08		89.00	4.91E-01	4.91E-01	3.63E-02	2.33E-01
	RU-106	621.84		9.80	9.42E-01	9.42E-01	-2.75E-02	4.43E-01
	AG-108M	433.93		89.90	7.59E-02	7.59E-02	6.50E-03	3.61E-02
		614.37		90.40	1.00E-01		9.02E-03	4.76E-02
		722.95		90.50	9.99E-02		-4.97E-03	4.71E-02
	CD-109	88.03		3.72	1.95E+00	1.95E+00	1.70E+00	9.55E-01
	AG-110M	657.75		93.14	1.19E-01	1.19E-01	-2.93E-02	5.61E-02
		677.61		10.53	8.65E-01		-4.57E-01	4.01E-01
		706.67		16.46	6.02E-01		-1.90E-01	2.80E-01
		763.93		21.98	4.87E-01		-5.18E-02	2.27E-01
		884.67		71.63	1.54E-01		2.16E-02	7.14E-02
		1384.27		23.94	4.18E-01		-6.12E-02	1.84E-01
	CD-113M	263.70		0.02	2.68E+02	2.68E+02	4.68E+01	1.29E+02
	SN-113	255.12		1.93	5.94E+00	1.87E-01	1.11E+00	2.87E+00
		391.69		64.90	1.87E-01		-3.56E-02	8.95E-02
	TE123M	159.00		84.10	9.98E-02	9.98E-02	-3.39E-02	4.84E-02
	SB-124	602.71		97.87	2.53E-01	2.53E-01	-2.80E-01	1.19E-01
		645.85		7.26	3.42E+00		1.68E+00	1.61E+00
		722.78		11.10	2.60E+00		-1.29E-01	1.22E+00
		1691.02		49.00	3.37E-01		3.08E-02	1.34E-01
	I-125	35.49		6.49	6.02E+00	6.02E+00	2.10E+00	2.93E+00
	SB-125	176.33		6.89	7.49E-01	2.42E-01	-1.57E-01	3.63E-01
		427.89		29.33	2.42E-01		2.92E-02	1.15E-01
		463.38		10.35	8.59E-01		8.17E-01	4.11E-01
		600.56		17.80	4.74E-01		4.45E-02	2.24E-01
		635.90		11.32	6.68E-01		6.79E-02	3.12E-01
	SB-126	414.70		83.30	2.09E+01	2.09E+01	-1.14E+00	9.93E+00
		666.33		99.60	2.41E+01		1.03E+01	1.14E+01
		695.00		99.60	2.36E+01		6.85E+00	1.11E+01
		720.50		53.80	4.53E+01		-9.44E+00	2.13E+01
+	SN-126	87.57	*	37.00	2.08E-01	2.08E-01	1.99E-01	1.03E-01
	SB-127	473.00		25.00	2.33E+07	1.68E+07	6.22E+06	1.11E+07
		685.20		35.70	1.68E+07		6.86E+06	7.86E+06
		783.80		14.70	5.00E+07		1.04E+07	2.35E+07
	I-129	29.78		57.00	3.85E-01	3.85E-01	1.67E-01	1.88E-01
		33.60		13.20	1.08E+00		-4.02E-01	5.25E-01
		39.58		7.52	1.19E+00		-9.58E-01	5.80E-01
	I-131	284.30		6.05	5.61E+03	4.39E+02	-6.97E+02	2.69E+03
		364.48		81.20	4.39E+02		-1.18E+02	2.09E+02
		636.97		7.26	5.91E+03		2.36E+03	2.76E+03
		722.89		1.80	3.00E+04		-1.49E+03	1.42E+04
	TE-132	49.72		13.10	1.06E+09	1.47E+08	2.07E+08	5.18E+08
		228.16		88.00	1.47E+08		-7.63E+07	7.12E+07
	BA-133	81.00		33.00	1.70E-01	1.58E-01	-6.56E-01	8.32E-02
		302.84		17.80	3.92E-01		-6.18E-02	1.89E-01
		356.01		60.00	1.58E-01		-5.11E-03	7.66E-02
	@ I-133	529.87		86.30	1.00E+26	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)
XE-133	81.00	38.00	8.99E+04	8.99E+04	-3.47E+05	4.40E+04
CS-134	563.23	8.38	9.93E-01	9.75E-02	4.57E-01	4.69E-01
	569.32	15.43	4.87E-01		-1.16E-01	2.29E-01
	604.70	97.60	9.75E-02		-5.01E-02	4.63E-02
	795.84	85.40	1.37E-01		1.41E-01	6.46E-02
	801.93	8.73	1.07E+00		-6.88E-01	4.98E-01
CS-135	268.24	16.00	4.13E-01	4.13E-01	7.25E-03	2.00E-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	1.34E+02	1.80E+01	-1.44E+01	6.53E+01
	163.89	4.61	2.10E+02		-8.39E+00	1.02E+02
	176.55	13.56	7.22E+01		-1.52E+01	3.50E+01
	273.65	12.66	1.07E+02		1.51E+01	5.16E+01
	340.57	48.50	3.53E+01		5.79E+01	1.71E+01
	818.50	99.70	1.80E+01		1.18E+00	8.41E+00
	1048.07	79.60	2.49E+01		1.02E+01	1.15E+01
	1235.34	19.70	1.41E+02		1.20E+01	6.63E+01
CS-137	661.65	85.12	1.05E-01	1.05E-01	4.62E-02	4.97E-02
LA-138	788.74	34.00	2.57E-01	1.18E-01	-1.54E-01	1.20E-01
	1435.80	66.00	1.18E-01		7.30E-03	5.19E-02
CE-139	165.85	80.35	9.95E-02	9.95E-02	-1.24E-02	4.82E-02
BA-140	162.64	6.70	1.69E+02	6.24E+01	2.65E+01	8.20E+01
	304.84	4.50	3.34E+02		-1.26E+02	1.61E+02
	423.70	3.20	5.11E+02		1.44E+02	2.44E+02
	437.55	2.00	8.54E+02		-2.25E+01	4.07E+02
	537.32	25.00	6.24E+01		-1.89E+01	2.93E+01
LA-140	328.77	20.50	8.03E+01	2.43E+01	2.07E+01	3.86E+01
	487.03	45.50	3.82E+01		4.11E+00	1.81E+01
	815.85	23.50	8.83E+01		2.15E+01	4.12E+01
	1596.49	95.49	2.43E+01		4.44E+00	1.09E+01
CE-141	145.44	48.40	8.46E-01	8.46E-01	-6.14E-01	4.11E-01
@ CE-143	57.36	11.80	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	293.26	42.00	1.00E+26		1.00E+26	1.00E+20
@	664.55	5.20	1.00E+26		1.00E+26	1.00E+20
CE-144	133.54	10.80	5.59E-01	5.59E-01	-1.69E-02	2.72E-01
PM-144	476.78	42.00	2.12E-01	9.07E-02	7.65E-03	1.01E-01
	618.01	98.60	9.07E-02		4.36E-02	4.26E-02
	696.49	99.49	1.01E-01		3.49E-03	4.73E-02
PM-145	36.85	21.70	5.13E-01	2.70E-01	9.14E-02	2.49E-01
	37.36	39.70	2.70E-01		4.49E-02	1.31E-01
	42.30	15.10	5.45E-01		-2.78E-01	2.65E-01
	72.40	2.31	2.82E+00		-8.40E+00	1.38E+00
PM-146	453.90	39.94	1.83E-01	1.83E-01	6.65E-03	8.68E-02
	735.90	14.01	6.03E-01		2.75E-02	2.82E-01
	747.13	13.10	6.75E-01		1.51E-01	3.16E-01
ND-147	91.11	28.90	1.24E+02	1.24E+02	-2.75E+01	6.09E+01
	531.02	13.10	3.29E+02		6.57E+01	1.56E+02
PM-149	285.90	3.10	1.02E+14	1.02E+14	-2.68E+13	4.89E+13
EU-152	121.78	20.50	2.27E-01	2.27E-01	-2.55E-02	1.10E-01
	244.69	5.40	1.39E+00		-2.38E+00	6.74E-01
	344.27	19.13	3.43E-01		-6.67E-01	1.64E-01
	778.89	9.20	9.71E-01		2.28E-01	4.55E-01

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	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	EU-152	964.01		10.40	1.06E+00	2.27E-01	2.02E-01	4.98E-01
		1085.78		7.22	1.38E+00		3.62E-01	6.36E-01
		1112.02		9.60	1.22E+00		1.83E-01	5.70E-01
		1407.95		14.94	6.34E-01		1.22E-01	2.86E-01
	GD-153	97.43		31.30	1.94E-01	1.94E-01	1.12E-02	9.45E-02
		103.18		22.20	2.53E-01		-3.01E-01	1.23E-01
	EU-154	123.07		40.50	1.17E-01	1.17E-01	-3.07E-02	5.67E-02
		723.30		19.70	4.69E-01		-2.33E-02	2.21E-01
		873.19		11.50	7.01E-01		-3.04E-01	3.23E-01
		996.32		10.30	9.83E-01		3.30E-02	4.57E-01
		1004.76		17.90	5.24E-01		5.44E-03	2.42E-01
		1274.45		35.50	2.98E-01		5.90E-02	1.37E-01
+	EU-155	86.50	*	30.90	2.59E-01	2.25E-01	2.47E-01	1.28E-01
		105.30		20.70	2.25E-01		3.62E-02	1.10E-01
	EU-156	811.77		10.40	8.31E+01	8.31E+01	9.73E+00	3.88E+01
		1153.47		7.20	1.59E+02		6.35E+01	7.42E+01
		1230.71		8.90	1.43E+02		-1.23E+00	6.68E+01
	HO-166M	184.41		72.60	8.67E-02	8.67E-02	1.42E-01	4.22E-02
		280.45		29.60	1.97E-01		-5.05E-02	9.46E-02
		410.94		11.10	6.56E-01		5.26E-01	3.14E-01
		711.69		54.10	1.38E-01		-5.99E-02	6.44E-02
	TM-171	66.72		0.14	4.79E+01	4.79E+01	1.07E+01	2.35E+01
	HF-172	67.35		5.31	1.23E+00	4.65E-01	7.09E-01	6.03E-01
		125.81		11.30	4.65E-01		-8.77E-02	2.26E-01
	LU-172	181.53		20.60	8.63E+03	5.13E+03	4.80E+02	4.18E+03
		900.72		29.81	1.09E+04		-8.47E+02	5.07E+03
		1093.66		62.50	5.13E+03		4.52E+02	2.36E+03
+	LU-173	100.72		5.24	9.62E-01	8.03E-01	1.88E-01	4.68E-01
		272.11	*	21.20	8.03E-01		5.18E-01	3.96E-01
	HF-175	343.40		84.00	2.08E-01	2.08E-01	-4.06E-01	9.99E-02
	LU-176	88.34		13.30	4.76E-01	6.03E-02	2.69E-01	2.34E-01
		201.83		86.00	6.03E-02		-1.15E-02	2.91E-02
		306.78		94.00	6.67E-02		2.47E-02	3.21E-02
	HF-181	133.02		41.70	5.92E-01	4.66E-01	9.91E-02	2.88E-01
		345.85		17.20	1.96E+00		-3.90E+00	9.41E-01
		482.03		82.80	4.66E-01		1.13E-01	2.21E-01
	TA-182	67.75		41.20	2.63E-01	2.63E-01	1.52E-01	1.29E-01
		1121.30		34.90	7.25E-01		6.46E-01	3.42E-01
		1189.05		16.23	1.23E+00		3.10E-01	5.72E-01
		1221.41		26.98	9.31E-01		4.36E-01	4.38E-01
		1231.02		11.44	2.05E+00		-1.76E-02	9.60E-01
	IR-192	308.46		29.68	5.18E-01	3.77E-01	-3.02E-01	2.48E-01
		468.07		48.10	3.77E-01		1.11E-03	1.79E-01
	HG-203	279.19		77.30	3.54E-01	3.54E-01	7.24E-02	1.70E-01
	TL-204	374.74		94.11	7.62E-02	7.62E-02	1.54E-02	3.65E-02
		899.15		99.16	1.03E-01		2.53E-02	4.79E-02
		911.74		91.10	1.89E-01		4.18E-01	9.10E-02
	BI-207	569.67		97.72	7.26E-02	7.26E-02	-9.17E-04	3.42E-02
		1063.62		74.90	1.34E-01		2.69E-02	6.21E-02
+	TL-208	583.14	*	30.22	4.22E-01	2.63E-01	1.31E+00	2.04E-01
		860.37		4.48	2.13E+00		1.03E+00	9.98E-01
		2614.66	*	35.85	2.63E-01		8.48E-01	1.12E-01
	BI-210M	262.00		45.00	1.39E-01	1.39E-01	4.70E-02	6.70E-02

Analysis Report for 1707091-08

HTC-A08-BKGD01-1824-01

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	BI-210M	300.00		23.00	3.25E-01	1.39E-01	-5.16E-02	1.57E-01
	PB-210	46.50		4.25	1.80E+00	1.80E+00	1.83E+00	8.78E-01
	PB-211	404.84		2.90	2.33E+00	2.33E+00	-8.76E-02	1.11E+00
		831.96		2.90	2.85E+00		-1.66E+00	1.32E+00
+	BI-212	727.17	*	11.80	1.16E+00	1.16E+00	6.67E-01	5.60E-01
		1620.62	*	2.75	2.61E+00		2.77E+00	1.12E+00
+	PB-212	238.63	*	44.60	2.72E-01	2.72E-01	1.43E+00	1.34E-01
		300.09		3.41	2.19E+00		-3.48E-01	1.06E+00
+	BI-214	609.31	*	46.30	1.74E-01	1.74E-01	1.02E+00	8.20E-02
		1120.29	*	15.10	1.03E+00		9.40E-01	4.90E-01
		1764.49	*	15.80	4.55E-01		1.17E+00	1.92E-01
		2204.22		4.98	1.65E+00		-1.58E-01	6.98E-01
+	PB-214	295.21	*	19.19	5.68E-01	5.17E-01	1.14E+00	2.78E-01
		351.92	*	37.19	5.17E-01		1.08E+00	2.55E-01
	RN-219	401.80		6.50	1.02E+00	1.02E+00	8.18E-02	4.86E-01
	RA-223	323.87		3.88	1.68E+00	1.68E+00	7.28E-01	8.09E-01
+	RA-224	240.98	*	3.95	3.12E+00	3.12E+00	3.97E+00	1.53E+00
	RA-225	40.00		31.00	3.19E+01	3.19E+01	-2.56E+01	1.55E+01
+	RA-226	186.21	*	3.28	2.59E+00	2.59E+00	3.21E+00	1.27E+00
	TH-227	50.10		8.40	7.82E-01	7.82E-01	1.53E-01	3.81E-01
		236.00		11.50	9.06E-01		1.24E+00	4.45E-01
		256.20		6.30	1.01E+00		3.74E-01	4.88E-01
+	AC-228	338.32	*	11.40	1.64E+00	5.45E-01	1.40E+00	8.08E-01
		911.07	*	27.70	5.45E-01		1.36E+00	2.61E-01
		969.11	*	16.60	9.88E-01		1.38E+00	4.74E-01
	TH-230	48.44		16.90	4.20E-01	4.20E-01	1.90E-01	2.05E-01
		62.85		4.60	1.42E+00		9.96E-01	6.98E-01
		67.67		0.37	1.59E+01		9.16E+00	7.79E+00
	PA-231	283.67		1.60	3.63E+00	2.97E+00	2.46E-01	1.74E+00
		302.67		2.30	2.97E+00		-4.69E-01	1.44E+00
	TH-231	25.64		14.70	2.71E+00	8.85E-01	-1.62E+00	1.32E+00
		84.21		6.40	8.85E-01		-5.81E-01	4.33E-01
	PA-233	311.98		38.60	2.11E+00	2.11E+00	3.96E-01	1.02E+00
	PA-234	131.20		20.40	2.52E-01	2.52E-01	1.48E-01	1.23E-01
		733.99		8.80	9.12E-01		1.44E-01	4.26E-01
		946.00		12.00	8.19E-01		2.55E-01	3.82E-01
	PA-234M	1001.03		0.92	1.01E+01	1.01E+01	-2.28E+00	4.68E+00
+	TH-234	63.29	*	3.80	2.15E+00	2.15E+00	1.36E+00	1.06E+00
	U-235	143.76		10.50	4.70E-01	4.70E-01	6.72E-02	2.28E-01
		163.35		4.70	1.01E+00		-4.04E-02	4.91E-01
		205.31		4.70	1.36E+00		-1.01E-01	6.63E-01
+	NP-237	86.50	*	12.60	6.11E-01	6.11E-01	5.84E-01	3.01E-01
	NP-239	106.10		22.70	1.56E+12	1.56E+12	2.50E+11	7.60E+11
		228.18		10.70	4.54E+12		-2.36E+12	2.20E+12
		277.60		14.10	3.51E+12		1.68E+12	1.69E+12
	AM-241	59.54		35.90	1.72E-01	1.72E-01	4.76E-02	8.41E-02
+	AM-243	74.67	*	66.00	1.67E-01	1.67E-01	3.42E-01	8.24E-02
	CM-243	209.75		3.29	2.12E+00	4.51E-01	2.24E+00	1.03E+00
		228.14		10.60	5.87E-01		-3.05E-01	2.84E-01
		277.60		14.00	4.51E-01		2.17E-01	2.18E-01

Analysis Report for 1707091-08

HTC-A08-BKGD01-1824-01

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

No Action Level results available for reporting purposes.

DATA REVIEW COMMENTS REPORT

Creation Date	Comment	User

No Data Review Comments Entered.

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

Sample Title: HTC-A08-BKGD01-1824-01

Elapsed Live time: 3600
Elapsed Real Time: 3608

Channel								
1:	0	0	0	0	0	0	0	0
9:	7	165	183	152	121	105	91	126
17:	109	91	90	73	82	80	125	106
25:	83	80	85	98	88	109	91	84
33:	85	84	88	100	99	74	80	85
41:	82	93	98	84	96	112	125	119
49:	103	91	114	93	84	131	117	116
57:	113	111	139	148	126	150	165	205
65:	184	146	125	145	168	148	131	154
73:	159	185	304	364	395	457	223	124
81:	125	134	115	141	153	145	216	230
89:	182	165	177	158	230	196	132	97
97:	98	86	98	106	83	84	74	75
105:	87	106	103	87	98	92	94	90
113:	87	75	88	97	92	81	85	89
121:	80	90	94	78	92	92	99	88
129:	110	146	86	85	81	92	81	80
137:	72	95	87	85	92	96	94	78
145:	82	72	78	77	93	84	74	76
153:	77	86	78	83	66	68	65	62
161:	73	71	64	65	66	68	64	71
169:	72	68	75	70	62	63	65	65
177:	64	45	68	67	66	62	71	80
185:	90	126	131	75	56	63	53	64
193:	75	53	60	54	75	74	56	60
201:	56	64	65	46	54	64	55	71
209:	83	100	71	56	59	39	64	54
217:	53	59	54	68	45	53	60	52
225:	47	41	49	43	61	56	45	50
233:	60	49	49	50	78	194	464	320
241:	122	124	99	54	45	44	33	39
249:	30	30	46	28	42	43	55	38
257:	43	40	37	43	35	41	36	45
265:	39	31	31	34	39	59	65	35
273:	37	39	42	29	44	32	36	31
281:	38	25	26	24	36	25	32	27
289:	36	36	47	31	36	44	131	158
297:	79	36	44	46	48	34	27	32
305:	37	34	30	24	22	31	25	22
313:	31	31	32	25	25	24	22	22
321:	37	24	37	27	29	25	28	50
329:	39	33	26	28	35	28	21	27
337:	27	88	71	56	31	30	24	20
345:	25	25	26	37	24	26	86	183
353:	189	57	28	20	24	21	23	27
361:	21	14	24	25	10	20	23	21

369:	19	21	23	21	29	26	23	34

Sample Title: HTC-A08-BKGD01-1824-01

Channel								
377:	16	24	24	23	20	22	18	21
385:	25	21	30	24	17	20	25	26
393:	21	21	20	25	15	21	13	24
401:	23	26	18	19	20	22	21	21
409:	28	34	29	17	17	21	9	18
417:	16	19	18	23	22	17	14	21
425:	15	24	28	17	14	17	12	12
433:	22	21	14	22	28	21	20	19
441:	21	18	23	21	14	12	13	22
449:	15	24	15	28	18	12	22	15
457:	19	15	19	19	13	32	37	41
465:	25	9	18	15	14	17	24	17
473:	19	24	22	14	22	17	15	14
481:	14	22	18	22	23	11	16	16
489:	17	18	15	14	14	20	10	19
497:	13	18	18	22	17	10	9	18
505:	15	14	23	22	19	41	75	50
513:	25	24	13	10	17	14	16	14
521:	15	13	14	13	9	14	14	16
529:	17	17	15	18	9	14	15	12
537:	12	8	7	13	14	13	17	16
545:	15	17	13	10	12	14	13	10
553:	17	7	17	10	15	20	10	10
561:	11	20	20	13	14	12	8	8
569:	5	16	15	15	17	18	13	12
577:	13	19	16	11	25	29	104	106
585:	47	15	12	17	18	12	13	16
593:	11	16	10	16	6	16	17	12
601:	12	13	10	16	17	12	12	36
609:	107	123	52	22	4	12	8	10
617:	15	6	10	11	19	9	8	13
625:	14	16	11	7	13	12	16	10
633:	7	9	14	7	11	10	10	9
641:	3	11	13	11	12	10	9	19
649:	7	10	9	16	13	9	12	15
657:	11	8	9	25	12	12	24	14
665:	7	16	10	16	6	8	11	10
673:	13	9	11	4	7	6	11	8
681:	10	13	9	11	10	8	11	10
689:	8	6	12	13	10	10	18	6
697:	10	15	12	9	13	9	15	8
705:	10	14	7	13	4	7	13	7
713:	10	10	11	11	14	10	11	10
721:	13	12	13	14	12	16	24	24
729:	15	8	11	7	8	9	10	4
737:	19	11	9	11	13	12	8	15
745:	13	10	16	12	7	2	12	6
753:	11	12	8	13	13	15	11	17
761:	8	11	9	11	9	8	8	15
769:	20	18	12	8	10	9	7	16
777:	10	4	9	10	12	13	12	8
785:	10	19	12	8	6	5	9	12
793:	16	17	19	20	15	12	7	4

801:	8	14	12	9	11	13	12	11

Sample Title: HTC-A08-BKGD01-1824-01

Channel								
809:	9	9	5	13	10	10	10	5
817:	8	17	7	7	8	16	6	9
825:	8	7	8	10	9	9	5	9
833:	10	6	9	7	19	6	11	11
841:	6	7	6	13	5	11	7	7
849:	5	10	6	5	10	7	6	9
857:	8	9	8	14	16	6	12	8
865:	7	7	6	12	9	9	2	9
873:	7	3	6	11	6	9	6	6
881:	5	7	8	13	4	8	5	7
889:	4	11	9	9	10	12	7	10
897:	8	9	6	16	10	10	7	8
905:	7	14	6	7	8	31	63	59
913:	23	12	9	7	9	4	5	9
921:	7	9	6	8	6	7	13	9
929:	6	2	9	7	4	19	8	10
937:	9	5	9	9	6	9	8	7
945:	8	11	9	12	10	9	6	5
953:	3	9	10	6	9	5	6	6
961:	9	6	11	11	17	14	10	19
969:	43	30	5	13	10	12	9	2
977:	6	11	13	5	4	6	4	9
985:	2	6	7	11	6	5	8	7
993:	9	7	10	12	7	9	6	11
1001:	7	6	7	6	7	9	7	8
1009:	7	4	4	9	7	12	6	9
1017:	5	5	12	8	5	4	10	10
1025:	5	9	6	8	6	12	7	4
1033:	4	7	4	8	8	8	12	9
1041:	10	3	7	5	4	10	8	10
1049:	6	8	7	6	4	7	7	5
1057:	8	8	8	7	6	7	9	12
1065:	5	6	9	5	7	6	7	6
1073:	3	5	3	10	12	10	12	7
1081:	5	6	10	5	10	4	11	4
1089:	6	7	5	4	4	9	5	9
1097:	9	5	6	9	1	6	10	12
1105:	8	8	8	6	13	5	15	5
1113:	14	7	9	11	5	10	13	33
1121:	20	9	6	6	7	8	14	3
1129:	6	7	9	6	8	9	11	9
1137:	13	11	9	8	5	5	5	2
1145:	4	7	9	9	6	4	8	11
1153:	7	9	12	12	5	7	10	14
1161:	6	16	12	9	12	8	11	9
1169:	5	8	9	9	7	11	9	10
1177:	11	9	11	8	13	9	6	3
1185:	9	3	10	4	9	9	10	8
1193:	7	6	4	13	9	6	10	9
1201:	10	19	11	5	10	7	10	14
1209:	12	13	11	8	6	12	6	8
1217:	10	12	10	15	9	11	12	13
1225:	7	10	13	12	9	11	8	8

1233:	13	9	9	9	14	19	8	17

Sample Title: HTC-A08-BKGD01-1824-01

Channel								
1241:	8	9	7	7	8	9	9	8
1249:	6	11	7	6	9	7	6	6
1257:	5	6	6	10	6	2	9	6
1265:	4	7	3	3	4	9	8	8
1273:	5	1	5	6	9	4	7	9
1281:	10	4	3	7	6	6	4	3
1289:	5	8	3	5	9	9	7	4
1297:	5	5	4	4	6	2	7	3
1305:	10	7	6	3	5	5	4	4
1313:	3	5	3	5	6	8	7	7
1321:	2	5	7	3	4	4	7	4
1329:	5	5	1	4	5	5	6	3
1337:	9	3	6	4	3	3	4	3
1345:	8	3	3	3	3	1	6	0
1353:	7	5	2	3	4	5	5	2
1361:	1	1	3	0	2	3	7	5
1369:	2	5	3	3	2	4	1	8
1377:	7	12	8	3	2	5	2	2
1385:	2	1	4	5	4	7	4	6
1393:	6	5	0	1	2	6	2	2
1401:	5	2	4	2	0	1	4	11
1409:	5	5	2	2	5	3	6	2
1417:	1	3	6	1	2	3	0	1
1425:	3	4	3	3	3	2	4	4
1433:	5	1	4	2	3	1	2	0
1441:	3	6	3	4	2	3	4	7
1449:	2	3	2	4	4	2	2	3
1457:	3	13	53	181	287	157	33	7
1465:	4	2	4	2	1	0	2	3
1473:	0	0	0	1	0	3	1	3
1481:	3	3	0	1	2	2	1	2
1489:	1	3	1	0	3	0	2	3
1497:	2	1	0	2	3	3	2	3
1505:	2	1	1	3	5	4	3	3
1513:	3	3	2	3	0	2	3	2
1521:	2	1	3	1	2	0	3	2
1529:	3	0	1	0	2	4	2	0
1537:	0	3	2	0	3	1	3	4
1545:	0	1	1	0	1	5	3	1
1553:	1	2	2	2	2	0	0	0
1561:	1	1	0	0	1	0	1	3
1569:	1	2	2	1	1	0	1	0
1577:	0	4	1	1	1	4	4	4
1585:	1	4	3	1	10	3	5	9
1593:	0	3	2	6	0	1	2	2
1601:	0	0	1	1	0	0	2	2
1609:	0	1	2	2	1	1	0	2
1617:	1	2	1	7	3	3	3	1
1625:	3	0	1	0	2	6	1	1
1633:	4	1	0	0	0	0	1	1
1641:	2	1	2	1	1	1	1	1
1649:	0	1	1	0	0	0	2	1
1657:	2	0	2	1	1	5	2	0

1665:	3	2	1	0	2	0	2	0

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Channel								
1673:	0	2	3	1	1	1	2	1
1681:	1	2	0	0	0	0	0	0
1689:	0	0	3	0	1	0	1	0
1697:	2	1	1	0	3	1	0	3
1705:	2	0	0	1	0	5	1	0
1713:	1	3	1	0	1	1	0	0
1721:	1	1	0	2	3	4	2	3
1729:	5	5	2	5	2	1	0	0
1737:	0	1	0	0	2	0	1	0
1745:	4	1	0	2	3	1	1	2
1753:	3	0	0	0	1	0	0	1
1761:	1	2	6	15	17	6	2	1
1769:	0	2	1	1	0	1	0	1
1777:	3	0	1	2	0	0	0	0
1785:	1	1	0	2	3	2	0	1
1793:	1	1	1	4	0	1	1	1
1801:	0	2	0	1	1	0	3	0
1809:	0	1	0	0	0	1	1	0
1817:	0	2	0	0	0	0	1	1
1825:	0	0	1	0	2	1	3	2
1833:	1	1	1	0	1	0	4	1
1841:	1	0	1	1	1	1	5	2
1849:	1	2	3	1	1	3	1	0
1857:	1	1	1	1	0	0	2	0
1865:	0	1	1	2	2	2	1	1
1873:	0	1	0	1	1	1	1	0
1881:	3	1	2	1	0	2	0	1
1889:	0	0	1	0	1	1	1	0
1897:	0	2	3	1	0	1	0	1
1905:	2	0	1	1	1	0	0	0
1913:	0	0	1	0	1	1	1	1
1921:	1	0	4	2	1	1	1	1
1929:	0	1	2	0	1	2	1	0
1937:	1	2	0	1	1	1	2	3
1945:	2	2	2	4	0	2	0	1
1953:	0	1	1	0	1	0	1	2
1961:	2	0	1	0	1	3	2	1
1969:	0	0	1	0	0	0	0	1
1977:	3	0	0	0	0	2	0	0
1985:	1	0	2	1	2	2	1	1
1993:	0	0	2	2	0	3	1	1
2001:	0	1	1	2	0	1	3	1
2009:	0	2	1	1	1	0	0	1
2017:	2	1	1	2	0	0	1	0
2025:	1	3	1	0	2	0	2	2
2033:	0	2	0	0	1	2	0	0
2041:	1	0	1	2	0	1	0	1
2049:	2	1	2	0	2	0	0	1
2057:	1	0	3	1	1	0	0	2
2065:	3	1	0	3	2	1	0	1
2073:	2	1	1	0	0	3	2	1
2081:	0	2	1	0	2	1	1	2
2089:	1	2	2	1	1	0	1	0

2097:	1	0	2	1	1	1	2	4

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

2529:	0	0	0	1	1	0	0	0

Sample Title: HTC-A08-BKGD01-1824-01

Channel								
2537:	2	1	0	1	1	1	0	1
2545:	0	1	0	0	2	1	2	1
2553:	0	0	0	1	1	0	0	0
2561:	0	0	1	0	0	0	1	2
2569:	0	0	1	0	0	1	0	1
2577:	1	1	0	0	0	0	0	0
2585:	0	1	2	1	0	0	0	0
2593:	1	0	0	1	1	0	0	0
2601:	1	0	0	0	0	1	0	0
2609:	1	1	1	4	6	17	24	10
2617:	1	0	2	0	0	0	0	0
2625:	0	1	0	1	0	0	1	0
2633:	0	0	0	0	0	1	0	1
2641:	1	0	0	0	0	0	0	0
2649:	0	1	0	1	0	0	0	0
2657:	0	0	0	1	0	0	0	1
2665:	1	0	1	0	0	1	1	1
2673:	0	0	1	0	0	0	1	0
2681:	0	0	0	0	0	0	0	0
2689:	0	0	0	0	0	0	0	0
2697:	1	0	0	0	0	2	0	1
2705:	0	0	0	0	0	1	0	0
2713:	0	0	0	0	0	0	1	0
2721:	0	0	0	0	0	0	0	0
2729:	0	0	0	0	0	2	0	0
2737:	0	0	1	1	1	1	0	0
2745:	0	0	0	0	0	1	0	0
2753:	0	0	0	0	0	1	0	0
2761:	0	1	0	1	0	0	0	0
2769:	0	0	1	0	1	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	1	0	0
2801:	0	0	0	0	0	0	0	0
2809:	1	0	0	0	0	0	0	0
2817:	0	0	0	1	0	0	1	0
2825:	0	0	0	0	0	0	0	1
2833:	1	0	0	0	0	0	1	0
2841:	0	0	0	0	0	0	0	0
2849:	1	1	0	0	0	0	0	0
2857:	0	0	0	1	0	1	0	0
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	0
2889:	0	0	0	0	0	0	0	0
2897:	0	1	0	0	0	1	1	0
2905:	0	0	1	0	0	0	0	1
2913:	0	0	0	1	0	0	0	0
2921:	0	0	1	0	1	0	0	2
2929:	0	0	0	0	0	0	0	1
2937:	0	1	0	0	1	0	0	0
2945:	0	0	0	0	0	0	1	1
2953:	0	0	0	1	0	0	0	0

2961:	0	0	1	0	0	0	0	0

Sample Title: HTC-A08-BKGD01-1824-01

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

3393:	0	1	0	0	0	0	0	0

Sample Title: HTC-A08-BKGD01-1824-01

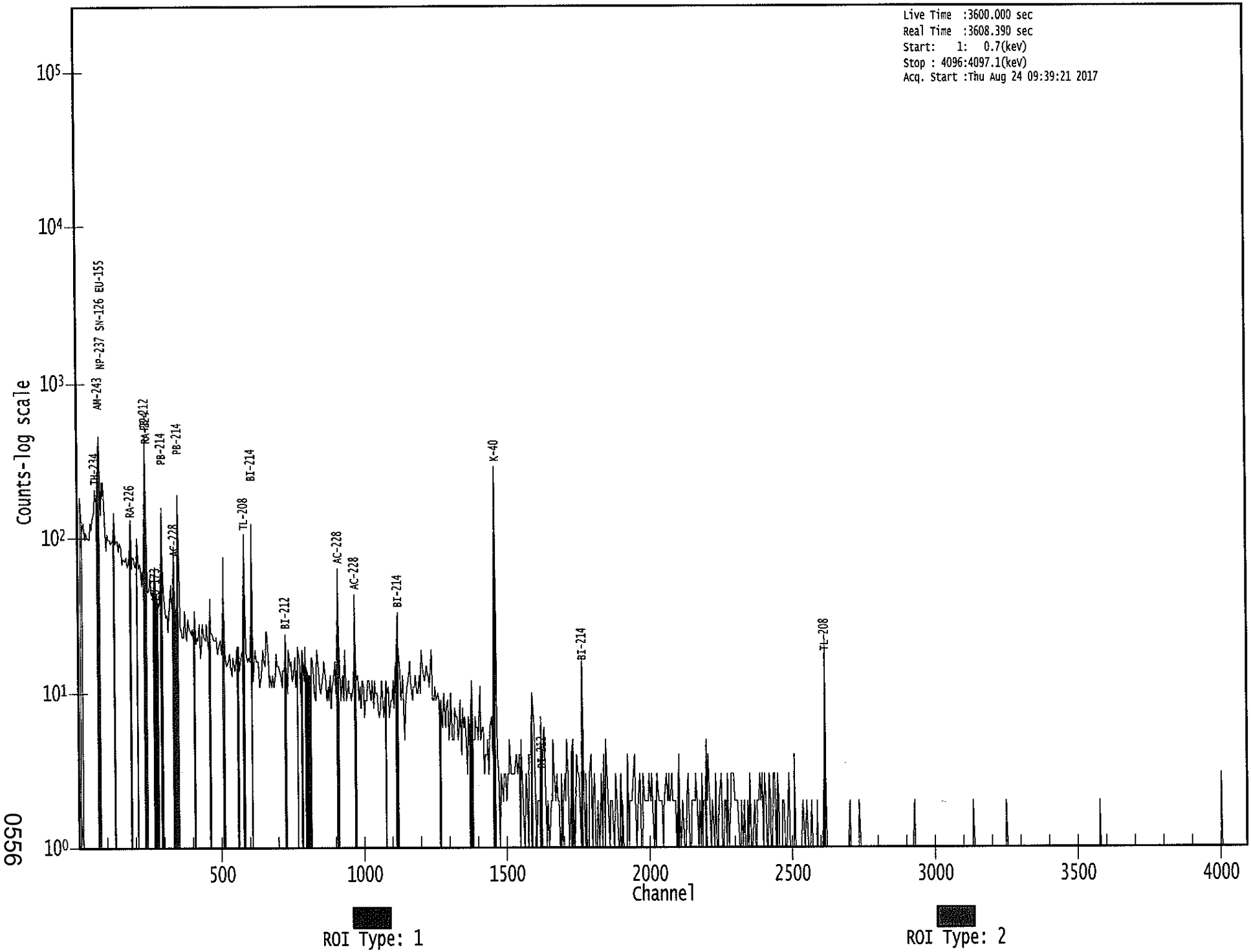
Channel								
3401:	0	0	0	0	0	0	0	0
3409:	0	0	0	0	0	0	0	0
3417:	0	0	0	0	1	0	0	0
3425:	0	0	0	0	0	0	0	0
3433:	0	0	0	0	0	0	0	0
3441:	0	0	0	0	0	0	0	0
3449:	0	0	0	0	0	1	0	0
3457:	0	0	0	0	0	0	0	0
3465:	0	0	0	0	0	0	0	0
3473:	0	1	1	0	0	0	0	0
3481:	0	0	0	0	0	0	0	0
3489:	0	0	1	0	0	0	0	0
3497:	0	0	0	0	1	0	0	0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

3825:	0	0	0	0	0	0	0	0

Sample Title: HTC-A08-BKGD01-1824-01

Channel								
3833:	0	0	0	0	0	0	0	1
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	1	0	0	0
3873:	1	0	1	0	0	0	0	0
3881:	0	1	0	0	0	0	0	0
3889:	0	0	0	0	0	0	0	0
3897:	0	0	1	0	0	0	0	0
3905:	0	0	0	0	0	0	0	0
3913:	0	0	0	0	0	0	0	0
3921:	0	0	0	0	0	0	0	0
3929:	0	0	0	0	0	0	0	0
3937:	0	0	0	0	0	0	1	0
3945:	0	0	0	0	0	0	0	0
3953:	0	0	0	0	0	0	0	0
3961:	0	0	0	0	0	0	0	0
3969:	0	0	0	0	0	0	0	1
3977:	0	0	0	0	0	0	0	0
3985:	1	0	0	0	0	0	0	0
3993:	0	0	0	0	0	0	0	0
4001:	0	0	3	0	0	0	0	0
4009:	0	0	0	1	0	0	0	0
4017:	0	0	0	0	0	0	0	0
4025:	0	0	0	1	0	0	0	0
4033:	0	0	0	0	0	0	0	0
4041:	0	0	0	0	0	1	0	0
4049:	0	0	0	0	0	0	0	0
4057:	0	0	0	0	0	0	1	0
4065:	0	0	0	0	0	0	0	1
4073:	0	0	0	1	0	0	0	0
4081:	0	0	0	0	0	0	0	0
4089:	0	0	0	0	1	0	0	0

0000055884.CNF



0556

Apex-Gamma

8/24

Analysis Report for 1707091-09

HTC-A08-BKGD01-2430-01

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 1707091-09
Sample Description	: HTC-A08-BKGD01-2430-01
Sample Type	: SOIL
Sample Size	: 6.479E+02 grams
Facility	: Countroom
Sample Taken On	: 5/15/2017 12:55:18PM
Acquisition Started	: 8/24/2017 9:40:15AM
Procedure	: GAS-1602 pCi
Operator	: Administrator
Detector Name	: GE2
Geometry	: GAS-1602
Live Time	: 3600.0 seconds
Real Time	: 3601.2 seconds
Dead Time	: 0.03 %
Peak Locate Threshold	: 2.50
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 29 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 8/19/2017
Efficiency Calibration Used Done On	: 1/14/2017
Efficiency Calibration Description	:
Sample Number	: 55886

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

Analysis Report for 1707091-09

HTC-A08-BKGD01-2430-01

PEAK LOCATE REPORT

Peak Locate Performed on : 8/24/2017 10:40:59AM
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	46.92	47.27	0.0000	0.00
2	76.03	76.34	0.0000	0.00
3	87.91	88.21	0.0000	0.00
4	92.63	92.93	0.0000	0.00
5	155.18	155.41	0.0000	0.00
6	185.79	185.99	0.0000	0.00
7	208.72	208.89	0.0000	0.00
8	238.65	238.78	0.0000	0.00
9	241.66	241.79	0.0000	0.00
10	270.79	270.90	0.0000	0.00
11	277.96	278.05	0.0000	0.00
12	295.10	295.17	0.0000	0.00
13	300.18	300.26	0.0000	0.00
14	328.82	328.87	0.0000	0.00
15	338.14	338.17	0.0000	0.00
16	351.89	351.90	0.0000	0.00
17	463.06	462.96	0.0000	0.00
18	511.12	510.97	0.0000	0.00
19	537.78	537.61	0.0000	0.00
20	545.10	544.92	0.0000	0.00
21	583.42	583.20	0.0000	0.00
22	609.33	609.09	0.0000	0.00
23	727.40	727.04	0.0000	0.00
24	795.45	795.02	0.0000	0.00
25	826.60	826.15	0.0000	0.00
26	860.88	860.39	0.0000	0.00
27	888.98	888.46	0.0000	0.00
28	911.46	910.93	0.0000	0.00
29	934.02	933.46	0.0000	0.00
30	969.75	969.15	0.0000	0.00
31	989.07	988.46	0.0000	0.00
32	1018.68	1018.05	0.0000	0.00
33	1120.85	1120.12	0.0000	0.00
34	1236.61	1235.78	0.0000	0.00
35	1241.10	1240.26	0.0000	0.00
36	1330.35	1329.43	0.0000	0.00
37	1377.77	1376.82	0.0000	0.00
38	1403.06	1402.09	0.0000	0.00
39	1409.08	1408.10	0.0000	0.00
40	1461.08	1460.05	0.0000	0.00
41	1502.25	1501.19	0.0000	0.00
42	1510.03	1508.97	0.0000	0.00

Analysis Report for 1707091-09

HTC-A08-BKGD01-2430-01

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
43	1531.57	1530.49	0.0000	0.00
44	1589.97	1588.84	0.0000	0.00
45	1611.06	1609.91	0.0000	0.00
46	1671.18	1669.99	0.0000	0.00
47	1676.40	1675.20	0.0000	0.00
48	1729.60	1728.36	0.0000	0.00
49	1764.90	1763.63	0.0000	0.00
50	1817.09	1815.78	0.0000	0.00
51	1828.57	1827.25	0.0000	0.00
52	2156.21	2154.64	0.0000	0.00
53	2204.89	2203.29	0.0000	0.00
54	2385.49	2383.77	0.0000	0.00
55	2614.87	2613.00	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1707091-09

HTC-A08-BKGD01-2430-01

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 8/24/2017 10:40:59AM

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	46.92	45 -	50	47.27	1.31E+02	69.12	8.62E+02	1.19
	2	76.03	72 -	83	76.34	9.63E+02	165.63	2.90E+03	3.95
M	3	87.91	83 -	96	88.21	1.44E+02	60.07	7.16E+02	1.21
m	4	92.63	83 -	96	92.93	1.77E+02	61.84	6.33E+02	1.21
	5	155.18	152 -	159	155.41	9.60E+01	76.81	9.18E+02	5.38
	6	185.79	183 -	190	185.99	2.24E+02	76.71	8.29E+02	1.64
	7	208.72	205 -	212	208.89	1.35E+02	72.94	7.90E+02	1.95
M	8	238.65	236 -	246	238.78	8.45E+02	72.04	4.39E+02	1.53
m	9	241.66	236 -	246	241.79	2.33E+02	84.65	5.31E+02	2.28
	10	270.79	267 -	274	270.90	5.04E+01	60.46	5.67E+02	1.84
	11	277.96	276 -	281	278.05	5.07E+01	42.20	3.17E+02	1.80
M	12	295.10	292 -	303	295.17	2.29E+02	43.54	2.68E+02	1.49
m	13	300.18	292 -	303	300.26	3.94E+01	40.26	3.20E+02	1.57
	14	328.82	325 -	332	328.87	5.33E+01	53.81	4.45E+02	1.94
	15	338.14	334 -	340	338.17	1.77E+02	50.19	3.29E+02	1.92
	16	351.89	348 -	355	351.90	4.17E+02	64.37	4.14E+02	1.24
	17	463.06	460 -	466	462.96	5.19E+01	37.03	2.14E+02	1.21
	18	511.12	507 -	516	510.97	1.68E+02	50.55	2.54E+02	2.39
	19	537.78	533 -	541	537.61	3.49E+01	34.77	1.60E+02	6.34
	20	545.10	542 -	548	544.92	3.51E+01	28.65	1.26E+02	3.96
	21	583.42	579 -	587	583.20	2.68E+02	53.51	2.77E+02	1.71
	22	609.33	604 -	612	609.09	2.98E+02	52.66	2.44E+02	1.86
	23	727.40	723 -	733	727.04	6.72E+01	43.45	2.20E+02	2.44
	24	795.45	792 -	798	795.02	2.41E+01	29.01	1.34E+02	1.20
	25	826.60	821 -	832	826.15	3.87E+01	38.68	1.67E+02	5.19
	26	860.88	855 -	864	860.39	3.84E+01	34.19	1.45E+02	1.92
	27	888.98	886 -	892	888.46	2.34E+01	20.89	6.11E+01	3.67
	28	911.46	907 -	916	910.93	2.18E+02	41.73	1.22E+02	2.13
	29	934.02	929 -	937	933.46	2.68E+01	25.63	8.24E+01	3.06
	30	969.75	965 -	975	969.15	7.79E+01	48.15	2.32E+02	2.23
	31	989.07	985 -	992	988.46	2.90E+01	21.73	5.80E+01	4.89
	32	1018.68	1012 -	1024	1018.05	3.46E+01	35.65	1.23E+02	7.73
	33	1120.85	1115 -	1124	1120.12	6.78E+01	38.18	1.68E+02	2.76
M	34	1236.61	1231 -	1243	1235.78	2.19E+01	25.02	9.74E+01	2.45
m	35	1241.10	1231 -	1243	1240.26	2.21E+01	24.78	6.86E+01	2.97
	36	1330.35	1322 -	1336	1329.43	3.19E+01	31.22	8.62E+01	12.07
	37	1377.77	1372 -	1380	1376.82	1.68E+01	18.93	4.44E+01	2.66
M	38	1403.06	1396 -	1414	1402.09	1.79E+01	16.61	2.77E+01	3.43
m	39	1409.08	1396 -	1414	1408.10	2.05E+01	17.20	1.16E+01	3.44
	40	1461.08	1454 -	1464	1460.05	9.41E+02	63.38	3.60E+01	2.35

Analysis Report for 1707091-09

HTC-A08-BKGD01-2430-01

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
	41	1502.25	1499 -	1504	1501.19	9.25E+00	11.96	2.15E+01	3.46
	42	1510.03	1505 -	1513	1508.97	2.22E+01	16.17	2.57E+01	1.68
	43	1531.57	1527 -	1533	1530.49	1.13E+01	8.02	3.46E+00	2.77
	44	1589.97	1582 -	1597	1588.84	3.97E+01	19.90	2.27E+01	4.91
	45	1611.06	1607 -	1614	1609.91	9.59E+00	10.58	1.28E+01	3.92
M	46	1671.18	1666 -	1678	1669.99	1.16E+01	8.97	9.92E+00	3.05
m	47	1676.40	1666 -	1678	1675.20	1.02E+01	8.28	2.50E+00	3.06
	48	1729.60	1724 -	1732	1728.36	1.20E+01	12.85	1.80E+01	1.37
	49	1764.90	1759 -	1767	1763.63	6.26E+01	20.63	2.68E+01	3.09
	50	1817.09	1812 -	1820	1815.78	7.38E+00	10.43	9.25E+00	0.92
	51	1828.57	1823 -	1830	1827.25	6.94E+00	7.21	4.11E+00	5.36
	52	2156.21	2150 -	2159	2154.64	1.14E+01	9.00	5.21E+00	6.94
	53	2204.89	2198 -	2208	2203.29	1.50E+01	15.00	2.20E+01	4.00
	54	2385.49	2380 -	2387	2383.77	8.83E+00	8.94	6.33E+00	2.00
	55	2614.87	2607 -	2620	2613.00	9.10E+01	22.14	1.40E+01	2.88

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 : 8/24/2017 10:40:59AM

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	46.92	45 -	50	1.31E+02	69.12	8.62E+02	5.36E+01
	2	76.03	72 -	83	9.63E+02	165.63	2.90E+03	1.26E+02
M	3	87.91	83 -	96	1.44E+02	60.07	7.16E+02	4.40E+01
m	4	92.63	83 -	96	1.77E+02	61.84	6.33E+02	4.14E+01
	5	155.18	152 -	159	9.60E+01	76.81	9.18E+02	6.10E+01
	6	185.79	183 -	190	2.24E+02	76.71	8.29E+02	5.80E+01
	7	208.72	205 -	212	1.35E+02	72.94	7.90E+02	5.68E+01
M	8	238.65	236 -	246	8.45E+02	72.04	4.39E+02	3.44E+01
m	9	241.66	236 -	246	2.33E+02	84.65	5.31E+02	3.79E+01
	10	270.79	267 -	274	5.04E+01	60.46	5.67E+02	4.83E+01
	11	277.96	276 -	281	5.07E+01	42.20	3.17E+02	3.27E+01
M	12	295.10	292 -	303	2.29E+02	43.54	2.68E+02	2.69E+01
m	13	300.18	292 -	303	3.94E+01	40.26	3.20E+02	2.94E+01

Analysis Report for 1707091-09

HTC-A08-BKGD01-2430-01

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	14	328.82	325 -	332	5.33E+01	53.81	4.45E+02	4.26E+01
	15	338.14	334 -	340	1.77E+02	50.19	3.29E+02	3.50E+01
	16	351.89	348 -	355	4.17E+02	64.37	4.14E+02	4.09E+01
	17	463.06	460 -	466	5.19E+01	37.03	2.14E+02	2.80E+01
	18	511.12	507 -	516	1.68E+02	50.55	2.54E+02	3.57E+01
	19	537.78	533 -	541	3.49E+01	34.77	1.60E+02	2.69E+01
	20	545.10	542 -	548	3.51E+01	28.65	1.26E+02	2.14E+01
	21	583.42	579 -	587	2.68E+02	53.51	2.77E+02	3.48E+01
	22	609.33	604 -	612	2.98E+02	52.66	2.44E+02	3.27E+01
	23	727.40	723 -	733	6.72E+01	43.45	2.20E+02	3.31E+01
	24	795.45	792 -	798	2.41E+01	29.01	1.34E+02	2.24E+01
	25	826.60	821 -	832	3.87E+01	38.68	1.67E+02	3.01E+01
	26	860.88	855 -	864	3.84E+01	34.19	1.45E+02	2.62E+01
	27	888.98	886 -	892	2.34E+01	20.89	6.11E+01	1.52E+01
	28	911.46	907 -	916	2.18E+02	41.73	1.22E+02	2.42E+01
	29	934.02	929 -	937	2.68E+01	25.63	8.24E+01	1.93E+01
	30	969.75	965 -	975	7.79E+01	48.15	2.32E+02	3.68E+01
	31	989.07	985 -	992	2.90E+01	21.73	5.80E+01	1.55E+01
	32	1018.68	1012 -	1024	3.46E+01	35.65	1.23E+02	2.77E+01
	33	1120.85	1115 -	1124	6.78E+01	38.18	1.68E+02	2.83E+01
M	34	1236.61	1231 -	1243	2.19E+01	25.02	9.74E+01	1.62E+01
m	35	1241.10	1231 -	1243	2.21E+01	24.78	6.86E+01	1.36E+01
	36	1330.35	1322 -	1336	3.19E+01	31.22	8.62E+01	2.39E+01
	37	1377.77	1372 -	1380	1.68E+01	18.93	4.44E+01	1.40E+01
M	38	1403.06	1396 -	1414	1.79E+01	16.61	2.77E+01	8.65E+00
m	39	1409.08	1396 -	1414	2.05E+01	17.20	1.16E+01	5.59E+00
	40	1461.08	1454 -	1464	9.41E+02	63.38	3.60E+01	1.31E+01
	41	1502.25	1499 -	1504	9.25E+00	11.96	2.15E+01	8.46E+00
	42	1510.03	1505 -	1513	2.22E+01	16.17	2.57E+01	1.08E+01
	43	1531.57	1527 -	1533	1.13E+01	8.02	3.46E+00	3.60E+00
	44	1589.97	1582 -	1597	3.97E+01	19.90	2.27E+01	1.27E+01
	45	1611.06	1607 -	1614	9.59E+00	10.58	1.28E+01	7.05E+00
M	46	1671.18	1666 -	1678	1.16E+01	8.97	9.92E+00	5.18E+00
m	47	1676.40	1666 -	1678	1.02E+01	8.28	2.50E+00	2.60E+00
	48	1729.60	1724 -	1732	1.20E+01	12.85	1.80E+01	8.89E+00
	49	1764.90	1759 -	1767	6.26E+01	20.63	2.68E+01	1.09E+01
	50	1817.09	1812 -	1820	7.38E+00	10.43	9.25E+00	7.32E+00
	51	1828.57	1823 -	1830	6.94E+00	7.21	4.11E+00	4.05E+00
	52	2156.21	2150 -	2159	1.14E+01	9.00	5.21E+00	4.89E+00
	53	2204.89	2198 -	2208	1.50E+01	15.00	2.20E+01	1.06E+01
	54	2385.49	2380 -	2387	8.83E+00	8.94	6.33E+00	5.49E+00
	55	2614.87	2607 -	2620	9.10E+01	22.14	1.40E+01	9.23E+00

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

Analysis Report for 1707091-09

HTC-A08-BKGD01-2430-01

PEAK WITH NID REPORT

Peak Analysis Performed on : 8/24/2017 10:40:59AM

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	46.92	45 -	50	47.27	1.31E+02	69.12	8.62E+02	PB-210
	2	76.03	72 -	83	76.34	9.63E+02	165.63	2.90E+03	.....
M	3	87.91	83 -	96	88.21	1.44E+02	60.07	7.16E+02	CD-109
									SN-126
									LU-176
m	4	92.63	83 -	96	92.93	1.77E+02	61.84	6.33E+02	GA-67
	5	155.18	152 -	159	155.41	9.60E+01	76.81	9.18E+02	.....
	6	185.79	183 -	190	185.99	2.24E+02	76.71	8.29E+02	RA-226
	7	208.72	205 -	212	208.89	1.35E+02	72.94	7.90E+02	GA-67
M	8	238.65	236 -	246	238.78	8.45E+02	72.04	4.39E+02	PB-212
m	9	241.66	236 -	246	241.79	2.33E+02	84.65	5.31E+02	RA-224
	10	270.79	267 -	274	270.90	5.04E+01	60.46	5.67E+02	.....
	11	277.96	276 -	281	278.05	5.07E+01	42.20	3.17E+02	CM-243
									NP-239
M	12	295.10	292 -	303	295.17	2.29E+02	43.54	2.68E+02	PB-214
m	13	300.18	292 -	303	300.26	3.94E+01	40.26	3.20E+02	GA-67
									PB-212
									BI-210M
	14	328.82	325 -	332	328.87	5.33E+01	53.81	4.45E+02	LA-140
	15	338.14	334 -	340	338.17	1.77E+02	50.19	3.29E+02	AC-228
	16	351.89	348 -	355	351.90	4.17E+02	64.37	4.14E+02	PB-214
	17	463.06	460 -	466	462.96	5.19E+01	37.03	2.14E+02	SB-125
	18	511.12	507 -	516	510.97	1.68E+02	50.55	2.54E+02	.....
	19	537.78	533 -	541	537.61	3.49E+01	34.77	1.60E+02	BA-140
	20	545.10	542 -	548	544.92	3.51E+01	28.65	1.26E+02	.....
	21	583.42	579 -	587	583.20	2.68E+02	53.51	2.77E+02	TL-208
	22	609.33	604 -	612	609.09	2.98E+02	52.66	2.44E+02	BI-214
	23	727.40	723 -	733	727.04	6.72E+01	43.45	2.20E+02	BI-212
	24	795.45	792 -	798	795.02	2.41E+01	29.01	1.34E+02	CS-134
	25	826.60	821 -	832	826.15	3.87E+01	38.68	1.67E+02	.....
	26	860.88	855 -	864	860.39	3.84E+01	34.19	1.45E+02	TL-208
	27	888.98	886 -	892	888.46	2.34E+01	20.89	6.11E+01	SC-46
	28	911.46	907 -	916	910.93	2.18E+02	41.73	1.22E+02	TL-204
									AC-228
	29	934.02	929 -	937	933.46	2.68E+01	25.63	8.24E+01	.....
	30	969.75	965 -	975	969.15	7.79E+01	48.15	2.32E+02	AC-228
	31	989.07	985 -	992	988.46	2.90E+01	21.73	5.80E+01	.....
	32	1018.68	1012 -	1024	1018.05	3.46E+01	35.65	1.23E+02	.....

Analysis Report for 1707091-09

HTC-A08-BKGD01-2430-01

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	33	1120.85	1115 -	1124	1120.12	6.78E+01	38.18	1.68E+02	SC-46 TA-182 BI-214
M	34	1236.61	1231 -	1243	1235.78	2.19E+01	25.02	9.74E+01	.....
m	35	1241.10	1231 -	1243	1240.26	2.21E+01	24.78	6.86E+01	.....
	36	1330.35	1322 -	1336	1329.43	3.19E+01	31.22	8.62E+01	.....
	37	1377.77	1372 -	1380	1376.82	1.68E+01	18.93	4.44E+01	.....
M	38	1403.06	1396 -	1414	1402.09	1.79E+01	16.61	2.77E+01	.....
m	39	1409.08	1396 -	1414	1408.10	2.05E+01	17.20	1.16E+01	.....
	40	1461.08	1454 -	1464	1460.05	9.41E+02	63.38	3.60E+01	K-40
	41	1502.25	1499 -	1504	1501.19	9.25E+00	11.96	2.15E+01	.....
	42	1510.03	1505 -	1513	1508.97	2.22E+01	16.17	2.57E+01	.....
	43	1531.57	1527 -	1533	1530.49	1.13E+01	8.02	3.46E+00	.....
	44	1589.97	1582 -	1597	1588.84	3.97E+01	19.90	2.27E+01	.....
	45	1611.06	1607 -	1614	1609.91	9.59E+00	10.58	1.28E+01	.....
M	46	1671.18	1666 -	1678	1669.99	1.16E+01	8.97	9.92E+00	.....
m	47	1676.40	1666 -	1678	1675.20	1.02E+01	8.28	2.50E+00	.....
	48	1729.60	1724 -	1732	1728.36	1.20E+01	12.85	1.80E+01	.....
	49	1764.90	1759 -	1767	1763.63	6.26E+01	20.63	2.68E+01	BI-214
	50	1817.09	1812 -	1820	1815.78	7.38E+00	10.43	9.25E+00	.....
	51	1828.57	1823 -	1830	1827.25	6.94E+00	7.21	4.11E+00	.....
	52	2156.21	2150 -	2159	2154.64	1.14E+01	9.00	5.21E+00	.....
	53	2204.89	2198 -	2208	2203.29	1.50E+01	15.00	2.20E+01	BI-214
	54	2385.49	2380 -	2387	2383.77	8.83E+00	8.94	6.33E+00	.....
	55	2614.87	2607 -	2620	2613.00	9.10E+01	22.14	1.40E+01	TL-208

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

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 8/24/2017 10:40:59AM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	46.92	1.31E+02	69.12	1.61E-02	1.67E-03
	2	76.03	9.63E+02	165.63	2.63E-02	2.11E-03
M	3	87.91	1.44E+02	60.07	2.70E-02	2.42E-03
m	4	92.63	1.77E+02	61.84	2.70E-02	2.34E-03
	5	155.18	9.60E+01	76.81	2.26E-02	1.66E-03

Analysis Report for 1707091-09

HTC-A08-BKGD01-2430-01

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	6	185.79	2.24E+02	76.71	2.03E-02	1.53E-03
	7	208.72	1.35E+02	72.94	1.89E-02	1.43E-03
M	8	238.65	8.45E+02	72.04	1.72E-02	1.30E-03
m	9	241.66	2.33E+02	84.65	1.71E-02	1.28E-03
	10	270.79	5.04E+01	60.46	1.58E-02	1.15E-03
	11	277.96	5.07E+01	42.20	1.55E-02	1.12E-03
M	12	295.10	2.29E+02	43.54	1.48E-02	1.10E-03
m	13	300.18	3.94E+01	40.26	1.47E-02	1.09E-03
	14	328.82	5.33E+01	53.81	1.37E-02	1.05E-03
	15	338.14	1.77E+02	50.19	1.35E-02	1.04E-03
	16	351.89	4.17E+02	64.37	1.31E-02	1.02E-03
	17	463.06	5.19E+01	37.03	1.06E-02	9.07E-04
	18	511.12	1.68E+02	50.55	9.87E-03	8.65E-04
	19	537.78	3.49E+01	34.77	9.49E-03	8.42E-04
	20	545.10	3.51E+01	28.65	9.39E-03	8.35E-04
	21	583.42	2.68E+02	53.51	8.90E-03	8.02E-04
	22	609.33	2.98E+02	52.66	8.60E-03	7.80E-04
	23	727.40	6.72E+01	43.45	7.46E-03	6.71E-04
	24	795.45	2.41E+01	29.01	6.94E-03	6.05E-04
	25	826.60	3.87E+01	38.68	6.73E-03	5.75E-04
	26	860.88	3.84E+01	34.19	6.51E-03	5.42E-04
	27	888.98	2.34E+01	20.89	6.34E-03	5.15E-04
	28	911.46	2.18E+02	41.73	6.21E-03	5.01E-04
	29	934.02	2.68E+01	25.63	6.09E-03	4.94E-04
	30	969.75	7.79E+01	48.15	5.90E-03	4.81E-04
	31	989.07	2.90E+01	21.73	5.81E-03	4.74E-04
	32	1018.68	3.46E+01	35.65	5.67E-03	4.64E-04
	33	1120.85	6.78E+01	38.18	5.24E-03	4.28E-04
M	34	1236.61	2.19E+01	25.02	4.84E-03	4.16E-04
m	35	1241.10	2.21E+01	24.78	4.83E-03	4.16E-04
	36	1330.35	3.19E+01	31.22	4.58E-03	4.25E-04
	37	1377.77	1.68E+01	18.93	4.45E-03	4.12E-04
M	38	1403.06	1.79E+01	16.61	4.39E-03	4.04E-04
m	39	1409.08	2.05E+01	17.20	4.38E-03	4.03E-04
	40	1461.08	9.41E+02	63.38	4.26E-03	3.88E-04
	41	1502.25	9.25E+00	11.96	4.18E-03	3.76E-04
	42	1510.03	2.22E+01	16.17	4.16E-03	3.73E-04
	43	1531.57	1.13E+01	8.02	4.12E-03	3.67E-04
	44	1589.97	3.97E+01	19.90	4.01E-03	3.50E-04
	45	1611.06	9.59E+00	10.58	3.98E-03	3.44E-04
M	46	1671.18	1.16E+01	8.97	3.88E-03	3.27E-04
m	47	1676.40	1.02E+01	8.28	3.87E-03	3.25E-04
	48	1729.60	1.20E+01	12.85	3.79E-03	3.10E-04
	49	1764.90	6.26E+01	20.63	3.75E-03	3.00E-04
	50	1817.09	7.38E+00	10.43	3.68E-03	2.85E-04
	51	1828.57	6.94E+00	7.21	3.67E-03	2.81E-04
	52	2156.21	1.14E+01	9.00	3.37E-03	2.79E-04
	53	2204.89	1.50E+01	15.00	3.34E-03	2.79E-04
	54	2385.49	8.83E+00	8.94	3.25E-03	2.79E-04
	55	2614.87	9.10E+01	22.14	3.20E-03	2.79E-04

Analysis Report for 1707091-09

HTC-A08-BKGD01-2430-01

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 : 8/24/2017 10:40:59AM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000055574.CNF

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	1	46.92	1.31E+02	69.12	3.74E+01	5.77E+00	9.38E+01	6.94E+01
	2	76.03	9.63E+02	165.63			9.63E+02	1.66E+02
M	3	87.91	1.44E+02	60.07			1.44E+02	6.01E+01
m	4	92.63	1.77E+02	61.84	4.88E+01	1.30E+00	1.29E+02	6.19E+01
	5	155.18	9.60E+01	76.81			9.60E+01	7.68E+01
	6	185.79	2.24E+02	76.71	3.48E+01	7.32E+00	1.90E+02	7.71E+01
	7	208.72	1.35E+02	72.94			1.35E+02	7.29E+01
M	8	238.65	8.45E+02	72.04	7.09E+00	6.85E+00	8.38E+02	7.24E+01
m	9	241.66	2.33E+02	84.65			2.33E+02	8.46E+01
	10	270.79	5.04E+01	60.46			5.04E+01	6.05E+01
	11	277.96	5.07E+01	42.20			5.07E+01	4.22E+01
M	12	295.10	2.29E+02	43.54			2.29E+02	4.35E+01
m	13	300.18	3.94E+01	40.26			3.94E+01	4.03E+01
	14	328.82	5.33E+01	53.81			5.33E+01	5.38E+01
	15	338.14	1.77E+02	50.19			1.77E+02	5.02E+01
	16	351.89	4.17E+02	64.37	1.04E+01	5.08E+00	4.07E+02	6.46E+01
	17	463.06	5.19E+01	37.03			5.19E+01	3.70E+01
	18	511.12	1.68E+02	50.55	7.08E+01	4.94E+00	9.74E+01	5.08E+01
	19	537.78	3.49E+01	34.77			3.49E+01	3.48E+01
	20	545.10	3.51E+01	28.65			3.51E+01	2.86E+01
	21	583.42	2.68E+02	53.51	5.65E+00	3.57E+00	2.63E+02	5.36E+01
	22	609.33	2.98E+02	52.66	1.07E+01	3.96E+00	2.87E+02	5.28E+01
	23	727.40	6.72E+01	43.45			6.72E+01	4.34E+01
	24	795.45	2.41E+01	29.01			2.41E+01	2.90E+01
	25	826.60	3.87E+01	38.68			3.87E+01	3.87E+01
	26	860.88	3.84E+01	34.19			3.84E+01	3.42E+01
	27	888.98	2.34E+01	20.89			2.34E+01	2.09E+01
	28	911.46	2.18E+02	41.73	2.63E+00	2.49E+00	2.15E+02	4.18E+01
	29	934.02	2.68E+01	25.63			2.68E+01	2.56E+01
	30	969.75	7.79E+01	48.15			7.79E+01	4.82E+01
	31	989.07	2.90E+01	21.73			2.90E+01	2.17E+01
	32	1018.68	3.46E+01	35.65			3.46E+01	3.57E+01
	33	1120.85	6.78E+01	38.18	2.45E+00	2.38E+00	6.53E+01	3.83E+01
M	34	1236.61	2.19E+01	25.02			2.19E+01	2.50E+01
m	35	1241.10	2.21E+01	24.78			2.21E+01	2.48E+01

Analysis Report for 1707091-09

HTC-A08-BKGD01-2430-01

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	36	1330.35	3.19E+01	31.22			3.19E+01	3.12E+01
	37	1377.77	1.68E+01	18.93			1.68E+01	1.89E+01
M	38	1403.06	1.79E+01	16.61			1.79E+01	1.66E+01
m	39	1409.08	2.05E+01	17.20			2.05E+01	1.72E+01
	40	1461.08	9.41E+02	63.38	5.90E+00	2.63E+00	9.35E+02	6.34E+01
	41	1502.25	9.25E+00	11.96			9.25E+00	1.20E+01
	42	1510.03	2.22E+01	16.17			2.22E+01	1.62E+01
	43	1531.57	1.13E+01	8.02			1.13E+01	8.02E+00
	44	1589.97	3.97E+01	19.90			3.97E+01	1.99E+01
	45	1611.06	9.59E+00	10.58			9.59E+00	1.06E+01
M	46	1671.18	1.16E+01	8.97			1.16E+01	8.97E+00
m	47	1676.40	1.02E+01	8.28			1.02E+01	8.28E+00
	48	1729.60	1.20E+01	12.85			1.20E+01	1.28E+01
	49	1764.90	6.26E+01	20.63	3.33E+00	1.73E+00	5.92E+01	2.07E+01
	50	1817.09	7.38E+00	10.43			7.38E+00	1.04E+01
	51	1828.57	6.94E+00	7.21			6.94E+00	7.21E+00
	52	2156.21	1.14E+01	9.00			1.14E+01	9.00E+00
	53	2204.89	1.50E+01	15.00			1.50E+01	1.50E+01
	54	2385.49	8.83E+00	8.94			8.83E+00	8.94E+00
	55	2614.87	9.10E+01	22.14	4.77E+00	1.52E+00	8.62E+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 : 8/24/2017 10:40:59AM

Ref. Peak Energy : 0.00 Reference Date :
Peak Ratio : 0.00 Uncertainty : 0.00
Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000055574.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	46.92	1.31E+02	69.12	3.74E+01	5.77E+00	9.38E+01	6.94E+01
	2	76.03	9.63E+02	165.63			9.63E+02	1.66E+02
M	3	87.91	1.44E+02	60.07			1.44E+02	6.01E+01
m	4	92.63	1.77E+02	61.84	4.88E+01	1.30E+00	1.29E+02	6.19E+01
	5	155.18	9.60E+01	76.81			9.60E+01	7.68E+01
	6	185.79	2.24E+02	76.71	3.48E+01	7.32E+00	1.90E+02	7.71E+01
	7	208.72	1.35E+02	72.94			1.35E+02	7.29E+01
M	8	238.65	8.45E+02	72.04	7.09E+00	6.85E+00	8.38E+02	7.24E+01

Analysis Report for 1707091-09

HTC-A08-BKGD01-2430-01

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
m	9	241.66	2.33E+02	84.65			2.33E+02	8.46E+01
	10	270.79	5.04E+01	60.46			5.04E+01	6.05E+01
	11	277.96	5.07E+01	42.20			5.07E+01	4.22E+01
M	12	295.10	2.29E+02	43.54			2.29E+02	4.35E+01
m	13	300.18	3.94E+01	40.26			3.94E+01	4.03E+01
	14	328.82	5.33E+01	53.81			5.33E+01	5.38E+01
	15	338.14	1.77E+02	50.19			1.77E+02	5.02E+01
	16	351.89	4.17E+02	64.37	1.04E+01	5.08E+00	4.07E+02	6.46E+01
	17	463.06	5.19E+01	37.03			5.19E+01	3.70E+01
	18	511.12	1.68E+02	50.55	7.08E+01	4.94E+00	9.74E+01	5.08E+01
	19	537.78	3.49E+01	34.77			3.49E+01	3.48E+01
	20	545.10	3.51E+01	28.65			3.51E+01	2.86E+01
	21	583.42	2.68E+02	53.51	5.65E+00	3.57E+00	2.63E+02	5.36E+01
	22	609.33	2.98E+02	52.66	1.07E+01	3.96E+00	2.87E+02	5.28E+01
	23	727.40	6.72E+01	43.45			6.72E+01	4.34E+01
	24	795.45	2.41E+01	29.01			2.41E+01	2.90E+01
	25	826.60	3.87E+01	38.68			3.87E+01	3.87E+01
	26	860.88	3.84E+01	34.19			3.84E+01	3.42E+01
	27	888.98	2.34E+01	20.89			2.34E+01	2.09E+01
	28	911.46	2.18E+02	41.73	2.63E+00	2.49E+00	2.15E+02	4.18E+01
	29	934.02	2.68E+01	25.63			2.68E+01	2.56E+01
	30	969.75	7.79E+01	48.15			7.79E+01	4.82E+01
	31	989.07	2.90E+01	21.73			2.90E+01	2.17E+01
	32	1018.68	3.46E+01	35.65			3.46E+01	3.57E+01
	33	1120.85	6.78E+01	38.18	2.45E+00	2.38E+00	6.53E+01	3.83E+01
M	34	1236.61	2.19E+01	25.02			2.19E+01	2.50E+01
m	35	1241.10	2.21E+01	24.78			2.21E+01	2.48E+01
	36	1330.35	3.19E+01	31.22			3.19E+01	3.12E+01
	37	1377.77	1.68E+01	18.93			1.68E+01	1.89E+01
M	38	1403.06	1.79E+01	16.61			1.79E+01	1.66E+01
m	39	1409.08	2.05E+01	17.20			2.05E+01	1.72E+01
	40	1461.08	9.41E+02	63.38	5.90E+00	2.63E+00	9.35E+02	6.34E+01
	41	1502.25	9.25E+00	11.96			9.25E+00	1.20E+01
	42	1510.03	2.22E+01	16.17			2.22E+01	1.62E+01
	43	1531.57	1.13E+01	8.02			1.13E+01	8.02E+00
	44	1589.97	3.97E+01	19.90			3.97E+01	1.99E+01
	45	1611.06	9.59E+00	10.58			9.59E+00	1.06E+01
M	46	1671.18	1.16E+01	8.97			1.16E+01	8.97E+00
m	47	1676.40	1.02E+01	8.28			1.02E+01	8.28E+00
	48	1729.60	1.20E+01	12.85			1.20E+01	1.28E+01
	49	1764.90	6.26E+01	20.63	3.33E+00	1.73E+00	5.92E+01	2.07E+01
	50	1817.09	7.38E+00	10.43			7.38E+00	1.04E+01
	51	1828.57	6.94E+00	7.21			6.94E+00	7.21E+00
	52	2156.21	1.14E+01	9.00			1.14E+01	9.00E+00
	53	2204.89	1.50E+01	15.00			1.50E+01	1.50E+01
	54	2385.49	8.83E+00	8.94			8.83E+00	8.94E+00
	55	2614.87	9.10E+01	22.14	4.77E+00	1.52E+00	8.62E+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

Analysis Report for 1707091-09

HTC-A08-BKGD01-2430-01

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	0.989	1460.81	*	10.67	2.38E+01	2.75E+00
SC-46	0.978	889.25	*	99.98	9.87E-02	8.84E-02
		1120.51	*	99.99	3.33E-01	1.97E-01
CD-109	0.997	88.03	*	3.72	1.93E+00	8.32E-01
SN-126	0.982	87.57	*	37.00	1.67E-01	7.13E-02
TL-208	0.988	583.14	*	30.22	1.13E+00	2.52E-01
		860.37	*	4.48	1.53E+00	1.37E+00
		2614.66	*	35.85	8.72E-01	2.37E-01
PB-210	0.972	46.50	*	4.25	1.60E+00	1.20E+00
BI-212	0.761	727.17	*	11.80	8.84E-01	5.77E-01
		1620.62		2.75		
PB-212	1.000	238.63	*	44.60	1.26E+00	1.45E-01
		300.09	*	3.41	9.14E-01	9.35E-01
BI-214	0.981	609.31	*	46.30	8.36E-01	1.71E-01
		1120.29	*	15.10	9.57E-01	5.66E-01
		1764.49	*	15.80	1.16E+00	4.16E-01
		2204.22	*	4.98	1.04E+00	1.05E+00
PB-214	0.999	295.21	*	19.19	9.30E-01	1.90E-01
		351.92	*	37.19	9.70E-01	1.72E-01
RA-224	0.929	240.98	*	3.95	4.00E+00	1.48E+00
RA-226	0.972	186.21	*	3.28	3.30E+00	6.18E+00
AC-228	0.968	338.32	*	11.40	1.34E+00	3.93E-01
		911.07	*	27.70	1.45E+00	3.05E-01
		969.11	*	16.60	9.21E-01	5.75E-01

* = Energy line found in the spectrum.
- = Manually added nuclide.
? = Manually edited nuclide.
Energy Tolerance : 1.000 keV
Nuclide confidence index threshold = 0.30
Errors quoted at 2.000sigma

Analysis Report for 1707091-09

HTC-A08-BKGD01-2430-01

UNIDENTIFIED PEAKS

Peak Locate Performed on : 8/24/2017 10:40:59AM
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	76.03	2.67540E-01	8.60		
m	4	92.63	3.57291E-02	24.04	Tol.	GA-67
	5	155.18	2.66782E-02	39.99		
	7	208.72	3.75157E-02	27.00	Tol.	GA-67
	10	270.79	1.39916E-02	60.02		
	11	277.96	1.40763E-02	41.64	Tol.	NP-239 CM-243
	14	328.82	1.48158E-02	50.45	Sum	
	17	463.06	1.44078E-02	35.69	Tol.	SB-125
	18	511.12	2.70556E-02	26.07		
	19	537.78	9.68961E-03	49.84	Sum	
	20	545.10	9.76190E-03	40.76		
	24	795.45	6.70482E-03	60.10	Sum	
	25	826.60	1.07582E-02	49.93		
	29	934.02	7.44281E-03	47.82		
	31	989.07	8.05077E-03	37.48		
	32	1018.68	9.60214E-03	51.57		
M	34	1236.61	6.08839E-03	57.09		
m	35	1241.10	6.14695E-03	56.00	Sum	
	36	1330.35	8.86111E-03	48.94		
	37	1377.77	4.67236E-03	56.28		
M	38	1403.06	4.98408E-03	46.30		
m	39	1409.08	5.69292E-03	41.97		
	41	1502.25	2.56944E-03	64.64		
	42	1510.03	6.15873E-03	36.47		
	43	1531.57	3.13034E-03	35.56		
	44	1589.97	1.10185E-02	25.08		
	45	1611.06	2.66493E-03	55.16		
M	46	1671.18	3.21164E-03	38.80		
m	47	1676.40	2.82130E-03	40.74		
	48	1729.60	3.33333E-03	53.52	Sum	
	50	1817.09	2.04861E-03	70.70		
	51	1828.57	1.92901E-03	51.92		
	52	2156.21	3.16468E-03	39.50		
	54	2385.49	2.45370E-03	50.63		

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 1707091-09

HTC-A08-BKGD01-2430-01

NUCLIDE IDENTIFICATION REPORT

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

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.98	1460.81	*	10.67	2.38E+01	2.75E+00
SC-46	0.97	889.25	*	99.98	9.87E-02	8.84E-02
		1120.51	*	99.99	3.33E-01	1.97E-01
CD-109	0.99	88.03	*	3.72	1.93E+00	8.32E-01
SN-126	0.98	87.57	*	37.00	1.67E-01	7.13E-02
TL-208	0.98	583.14	*	30.22	1.13E+00	2.52E-01
		860.37	*	4.48	1.53E+00	1.37E+00
		2614.66	*	35.85	8.72E-01	2.37E-01
PB-210	0.97	46.50	*	4.25	1.60E+00	1.20E+00
BI-212	0.76	727.17	*	11.80	8.84E-01	5.77E-01
		1620.62		2.75		
PB-212	1.00	238.63	*	44.60	1.26E+00	1.45E-01
		300.09	*	3.41	9.14E-01	9.35E-01
BI-214	0.98	609.31	*	46.30	8.36E-01	1.71E-01
		1120.29	*	15.10	9.57E-01	5.66E-01
		1764.49	*	15.80	1.16E+00	4.16E-01
		2204.22	*	4.98	1.04E+00	1.05E+00
PB-214	0.99	295.21	*	19.19	9.30E-01	1.90E-01
		351.92	*	37.19	9.70E-01	1.72E-01
RA-224	0.92	240.98	*	3.95	4.00E+00	1.48E+00
RA-226	0.97	186.21	*	3.28	3.30E+00	6.18E+00
AC-228	0.96	338.32	*	11.40	1.34E+00	3.93E-01
		911.07	*	27.70	1.45E+00	3.05E-01
		969.11	*	16.60	9.21E-01	5.75E-01

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

Analysis Report for 1707091-09

HTC-A08-BKGD01-2430-01

INTERFERENCE CORRECTED REPORT

	Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
	K-40	0.989	2.38E+01	2.75E+00	
	SC-46	0.978	8.70E-02	8.11E-02	
?	CD-109	0.997	1.93E+00	8.32E-01	
?	SN-126	0.982	1.67E-01	7.13E-02	
	TL-208	0.988	1.00E+00	1.71E-01	
	PB-210	0.972	1.60E+00	1.20E+00	
	BI-212	0.761	8.84E-01	5.77E-01	
	PB-212	1.000	1.25E+00	1.43E-01	
	BI-214	0.981	8.74E-01	1.52E-01	
	PB-214	0.999	9.52E-01	1.27E-01	
	RA-224	0.929	4.00E+00	1.48E+00	
	RA-226	0.972	3.30E+00	6.18E+00	
	AC-228	0.968	1.34E+00	2.22E-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 1707091-09

HTC-A08-BKGD01-2430-01

UNIDENTIFIED PEAKS

Peak Locate Performed on : 8/24/2017 10:40:59AM
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	76.03	2.67540E-01	8.60		
m	4	92.63	3.57291E-02	24.04	Tol.	GA-67
	5	155.18	2.66782E-02	39.99		
	7	208.72	3.75157E-02	27.00	Tol.	GA-67
	10	270.79	1.39916E-02	60.02		
	11	277.96	1.40763E-02	41.64	Tol.	NP-239 CM-243
	14	328.82	1.48158E-02	50.45	Sum	
	17	463.06	1.44078E-02	35.69	Tol.	SB-125
	18	511.12	2.70556E-02	26.07		
	19	537.78	9.68961E-03	49.84	Sum	
	20	545.10	9.76190E-03	40.76		
	24	795.45	6.70482E-03	60.10	Sum	
	25	826.60	1.07582E-02	49.93		
	29	934.02	7.44281E-03	47.82		
	31	989.07	8.05077E-03	37.48		
	32	1018.68	9.60214E-03	51.57		
M	34	1236.61	6.08839E-03	57.09		
m	35	1241.10	6.14695E-03	56.00	Sum	
	36	1330.35	8.86111E-03	48.94		
	37	1377.77	4.67236E-03	56.28		
M	38	1403.06	4.98408E-03	46.30		
m	39	1409.08	5.69292E-03	41.97		
	41	1502.25	2.56944E-03	64.64		
	42	1510.03	6.15873E-03	36.47		
	43	1531.57	3.13034E-03	35.56		
	44	1589.97	1.10185E-02	25.08		
	45	1611.06	2.66493E-03	55.16		
M	46	1671.18	3.21164E-03	38.80		
m	47	1676.40	2.82130E-03	40.74		
	48	1729.60	3.33333E-03	53.52	Sum	
	50	1817.09	2.04861E-03	70.70		
	51	1828.57	1.92901E-03	51.92		
	52	2156.21	3.16468E-03	39.50		
	54	2385.49	2.45370E-03	50.63		

Analysis Report for 1707091-09

HTC-A08-BKGD01-2430-01

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	-2.73E-01	1.82E+00	1.82E+00
+		NA-22	1274.54		99.94	3.68E-02	9.13E-02	9.13E-02
+	@	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	9.58E-03	6.52E-02	6.52E-02
+		K-40	1460.81	*	10.67	2.38E+01	7.75E-01	7.75E-01
+	@	AR-41	1293.64		99.16	1.00E+26	1.00E+26	1.00E+26
+		TI-44	67.88		94.40	-1.78E-03	4.55E-02	4.55E-02
			78.34		96.00	4.21E-02		5.30E-02
+		SC-46	889.25	*	99.98	9.87E-02	1.40E-01	1.40E-01
			1120.51	*	99.99	3.33E-01		3.04E-01
+		V-48	983.52		99.98	2.50E+00	5.64E+00	5.64E+00
			1312.10		97.50	1.09E+00		6.73E+00
+		CR-51	320.08		9.83	-4.11E+00	6.03E+00	6.03E+00
+		MN-54	834.83		99.97	2.07E-02	8.74E-02	8.74E-02
+		CO-56	846.75		99.96	6.41E-02	1.71E-01	1.71E-01
			1037.75		14.03	3.15E-01		1.44E+00
			1238.25		67.00	2.02E-01		3.96E-01
			1771.40		15.51	-3.43E-01		1.01E+00
			2598.48		16.90	2.60E-01		6.83E-01
+		CO-57	122.06		85.51	1.52E-02	5.01E-02	5.01E-02
			136.48		10.60	-1.65E-01		5.20E-01
+		CO-58	810.76		99.40	-1.37E-02	1.57E-01	1.57E-01
+		FE-59	1099.22		56.50	6.30E-02	7.04E-01	7.04E-01
			1291.56		43.20	-2.84E-01		7.62E-01
+		CO-60	1173.22		100.00	-3.45E-02	8.35E-02	9.29E-02
			1332.49		100.00	4.20E-02		8.35E-02
+		ZN-65	1115.52		50.75	8.66E-03	2.27E-01	2.27E-01
+		GA-67	93.31		35.70	5.99E+08	2.56E+08	2.56E+08
			208.95		2.24	4.85E+09		5.13E+09
			300.22		16.00	4.68E+08		6.94E+08
+		SE-75	121.11		16.70	-1.29E-01	1.30E-01	3.47E-01

Analysis Report for 1707091-09

HTC-A08-BKGD01-2430-01

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	SE-75	136.00		59.20	-4.56E-03	1.30E-01	1.30E-01
		264.65		59.80	7.82E-03		1.44E-01
		279.53		25.20	-2.80E-01		3.35E-01
		400.65		11.40	1.51E-02		8.04E-01
+	RB-82	776.52		13.00	-2.59E+00	7.23E+00	7.23E+00
+	RB-83	520.41		46.00	1.41E-01	2.64E-01	2.64E-01
		529.64		30.30	-3.63E-02		3.34E-01
		552.65		16.40	5.40E-01		7.81E-01
+	KR-85	513.99		0.43	-1.95E+01	1.30E+01	1.30E+01
+	SR-85	513.99		99.27	-2.47E-01	1.64E-01	1.64E-01
+	Y-88	898.02		93.40	5.68E-02	1.11E-01	1.46E-01
		1836.01		99.38	-3.16E-02		1.11E-01
+	MO-93	263.06		56.72	-5.80E-02	6.00E-02	8.16E-02
		684.67		99.68	-2.07E-02		6.45E-02
		1477.11		99.08	5.28E-03		6.00E-02
+	NB-93M	16.57		9.43	0.00E+00	6.78E+00	6.78E+00
+	NB-94	702.63		100.00	-2.99E-02	6.77E-02	6.77E-02
		871.10		100.00	-1.82E-02		6.86E-02
+	NB-95	765.79		99.81	-8.34E-02	5.40E-01	5.40E-01
+	NB-95M	235.69		25.00	1.66E+07	7.19E+07	7.19E+07
+	ZR-95	724.18		43.70	0.00E+00	3.67E-01	5.53E-01
		756.72		55.30	-5.06E-02		3.67E-01
+	MO-99	181.06		6.20	2.47E+10	5.65E+10	8.12E+10
		739.58		12.80	-1.47E+10		5.65E+10
		778.00		4.50	-9.65E+10		1.42E+11
+	RU-103	497.08		89.00	-2.20E-01	2.96E-01	2.96E-01
+	RU-106	621.84		9.80	-4.21E-01	7.53E-01	7.53E-01
+	AG-108M	433.93		89.90	-2.15E-02	4.71E-02	4.71E-02
		614.37		90.40	6.14E-03		7.29E-02
		722.95		90.50	0.00E+00		7.84E-02
+	CD-109	88.03	*	3.72	1.93E+00	3.03E+00	3.03E+00
+	AG-110M	657.75		93.14	-7.75E-02	8.58E-02	8.58E-02
		677.61		10.53	1.08E-01		7.72E-01
		706.67		16.46	1.89E-01		5.94E-01
		763.93		21.98	-2.81E-01		4.28E-01
		884.67		71.63	-1.10E-02		1.26E-01
		1384.27		23.94	1.39E-01		3.32E-01
+	CD-113M	263.70		0.02	4.62E+01	2.10E+02	2.10E+02
+	SN-113	255.12		1.93	2.67E+00	1.45E-01	4.26E+00
		391.69		64.90	1.53E-03		1.45E-01
+	TE123M	159.00		84.10	1.14E-02	9.61E-02	9.61E-02
+	SB-124	602.71		97.87	-3.71E-02	2.07E-01	2.07E-01
		645.85		7.26	1.28E+00		3.03E+00
		722.78		11.10	4.08E-01		1.89E+00
		1691.02		49.00	-1.11E-01		3.56E-01
+	I-125	35.49		6.49	-4.31E+01	6.04E+00	6.04E+00
+	SB-125	176.33		6.89	-4.15E-01	1.81E-01	6.90E-01
		427.89		29.33	8.93E-02		1.81E-01

Analysis Report for 1707091-09

HTC-A08-BKGD01-2430-01

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	SB-125	463.38		10.35	5.65E-01	1.81E-01	6.24E-01
		600.56		17.80	-1.25E-01		3.81E-01
		635.90		11.32	-3.30E-02		5.27E-01
+	SB-126	414.70		83.30	-2.76E+00	1.63E+01	1.63E+01
		666.33		99.60	-1.60E+00		1.90E+01
		695.00		99.60	8.13E+00		1.98E+01
		720.50		53.80	1.42E+00		3.17E+01
+	SN-126	87.57	*	37.00	1.67E-01	2.62E-01	2.62E-01
+	SB-127	473.00		25.00	-3.64E+06	1.39E+07	1.51E+07
		685.20		35.70	-4.45E+06		1.39E+07
		783.80		14.70	1.49E+07		3.84E+07
+	I-129	29.78		57.00	6.60E-02	4.32E-01	4.32E-01
		33.60		13.20	8.44E+00		2.03E+00
		39.58		7.52	9.68E-01		1.27E+00
+	I-131	284.30		6.05	3.02E+02	3.47E+02	4.59E+03
		364.48		81.20	-2.00E+02		3.47E+02
		636.97		7.26	1.80E+02		4.63E+03
		722.89		1.80	0.00E+00		2.36E+04
+	TE-132	49.72		13.10	-1.67E+07	1.21E+08	7.96E+08
		228.16		88.00	5.07E+07		1.21E+08
+	BA-133	81.00		33.00	4.73E-02	8.31E-02	1.17E-01
		302.84		17.80	3.62E-02		2.96E-01
		356.01		60.00	-4.34E-03		8.31E-02
+	@ I-133	529.87		86.30	1.00E+26	1.00E+26	1.00E+26
+	XE-133	81.00		38.00	2.50E+04	6.16E+04	6.16E+04
+	CS-134	563.23		8.38	2.38E-01	7.52E-02	7.17E-01
		569.32		15.43	-2.51E-03		3.70E-01
		604.70		97.60	-5.72E-03		7.52E-02
		795.84		85.40	6.05E-02		1.01E-01
		801.93		8.73	1.11E-01		8.18E-01
+	CS-135	268.24		16.00	1.33E-02	3.28E-01	3.28E-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	-4.91E+01	1.34E+01	1.24E+02
		163.89		4.61	-7.08E+01		2.01E+02
		176.55		13.56	-4.00E+01		6.65E+01
		273.65		12.66	-1.01E+02		7.22E+01
		340.57		48.50	2.39E+00		2.33E+01
		818.50		99.70	3.24E+00		1.34E+01
		1048.07		79.60	-9.37E+00		1.94E+01
		1235.34		19.70	3.43E+01		1.09E+02
+	CS-137	661.65		85.12	4.62E-02	8.41E-02	8.41E-02
+	LA-138	788.74		34.00	1.33E-01	1.07E-01	2.27E-01
		1435.80		66.00	2.28E-02		1.07E-01
+	CE-139	165.85		80.35	-1.68E-03	9.37E-02	9.37E-02
+	BA-140	162.64		6.70	1.19E+02	4.75E+01	1.64E+02
		304.84		4.50	6.49E+01		2.55E+02
		423.70		3.20	-3.28E+01		3.49E+02

Analysis Report for 1707091-09

HTC-A08-BKGD01-2430-01

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	BA-140	437.55	2.00	-1.63E+02	4.75E+01	5.07E+02
		537.32	25.00	1.17E+01		4.75E+01
+	LA-140	328.77	20.50	3.72E+01	1.65E+01	6.50E+01
		487.03	45.50	-4.08E+00		2.47E+01
		815.85	23.50	3.05E+00		6.06E+01
		1596.49	95.49	1.08E+00		1.65E+01
+	CE-141	145.44	48.40	1.15E-01	7.96E-01	7.96E-01
+	@ 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	-8.32E-02	4.11E-01	4.11E-01
+	PM-144	476.78	42.00	-2.22E-02	8.36E-02	1.47E-01
		618.01	98.60	3.32E-02		8.36E-02
		696.49	99.49	6.08E-02		8.60E-02
+	PM-145	36.85	21.70	5.52E-02	2.67E-01	5.13E-01
		37.36	39.70	-2.48E-01		2.67E-01
		42.30	15.10	3.48E-02		4.33E-01
		72.40	2.31	-9.08E+00		2.04E+00
+	PM-146	453.90	39.94	-2.37E-02	1.14E-01	1.14E-01
		735.90	14.01	1.10E-01		5.07E-01
		747.13	13.10	2.19E-01		5.46E-01
+	ND-147	91.11	28.90	-1.27E+02	8.55E+01	8.55E+01
		531.02	13.10	-1.46E+01		2.02E+02
+	PM-149	285.90	3.10	-5.39E+13	8.09E+13	8.09E+13
+	EU-152	121.78	20.50	4.97E-02	1.64E-01	1.64E-01
		244.69	5.40	-1.77E+00		8.93E-01
		344.27	19.13	-9.25E-03		2.41E-01
		778.89	9.20	-4.37E-01		6.44E-01
		964.01	10.40	-4.76E-02		8.64E-01
		1085.78	7.22	9.61E-02		1.09E+00
		1112.02	9.60	3.92E-02		8.85E-01
		1407.95	14.94	2.24E-03		6.03E-01
+	GD-153	97.43	31.30	3.76E-02	1.42E-01	1.42E-01
		103.18	22.20	-4.46E-03		1.82E-01
+	EU-154	123.07	40.50	-2.45E-02	8.09E-02	8.09E-02
		723.30	19.70	0.00E+00		3.68E-01
		873.19	11.50	3.11E-01		6.35E-01
		996.32	10.30	-1.36E-01		6.96E-01
		1004.76	17.90	9.48E-02		4.19E-01
		1274.45	35.50	9.85E-02		2.44E-01
+	EU-155	86.50	30.90	1.97E-01	1.48E-01	1.48E-01
		105.30	20.70	5.29E-02		1.63E-01
+	EU-156	811.77	10.40	-1.94E+01	5.53E+01	5.53E+01
		1153.47	7.20	-5.10E+01		1.19E+02
		1230.71	8.90	1.82E+01		1.02E+02
+	HO-166M	184.41	72.60	1.42E-01	8.15E-02	8.15E-02
		280.45	29.60	2.47E-02		1.56E-01
		410.94	11.10	3.33E-02		4.56E-01
		711.69	54.10	-6.40E-03		1.23E-01

Analysis Report for 1707091-09

HTC-A08-BKGD01-2430-01

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	TM-171	66.72		0.14	-7.45E-01	3.38E+01	3.38E+01
+	HF-172	67.35		5.31	-3.51E-02	3.26E-01	8.98E-01
		125.81		11.30	3.43E-02		3.26E-01
+	LU-172	181.53		20.60	2.47E+03	4.58E+03	7.78E+03
		900.72		29.81	-9.01E+02		8.26E+03
		1093.66		62.50	4.12E+02		4.58E+03
+	LU-173	100.72		5.24	2.32E-02	2.87E-01	6.98E-01
		272.11		21.20	2.16E-01		2.87E-01
+	HF-175	343.40		84.00	3.30E-02	1.47E-01	1.47E-01
+	LU-176	88.34		13.30	1.75E-01	4.93E-02	3.35E-01
		201.83		86.00	6.25E-03		5.70E-02
		306.78		94.00	-2.53E-02		4.93E-02
+	HF-181	133.02		41.70	6.18E-02	3.05E-01	4.42E-01
		345.85		17.20	1.61E-01		1.39E+00
		482.03		82.80	1.44E-03		3.05E-01
+	TA-182	67.75		41.20	-7.51E-03	1.92E-01	1.92E-01
		1121.30		34.90	8.20E-01		6.44E-01
		1189.05		16.23	-8.22E-01		9.46E-01
		1221.41		26.98	2.09E-01		6.91E-01
		1231.02		11.44	2.61E-01		1.46E+00
+	IR-192	308.46		29.68	-1.00E-03	2.66E-01	4.02E-01
		468.07		48.10	1.07E-02		2.66E-01
+	HG-203	279.19		77.30	3.07E-01	2.89E-01	2.89E-01
+	TL-204	374.74		94.11	1.58E-02	5.55E-02	5.55E-02
		899.15		99.16	-5.71E-03		7.59E-02
		911.74		91.10	4.30E-01		1.66E-01
+	BI-207	569.67		97.72	-3.63E-04	5.36E-02	5.36E-02
		1063.62		74.90	-3.41E-02		9.84E-02
+	TL-208	583.14	*	30.22	1.13E+00	2.29E-01	3.14E-01
		860.37	*	4.48	1.53E+00		2.19E+00
		2614.66	*	35.85	8.72E-01		2.29E-01
+	BI-210M	262.00		45.00	2.05E-02	1.03E-01	1.03E-01
		300.00		23.00	1.58E-01		2.35E-01
+	PB-210	46.50	*	4.25	1.60E+00	1.92E+00	1.92E+00
+	PB-211	404.84		2.90	4.49E-02	1.71E+00	1.71E+00
		831.96		2.90	-3.86E-01		2.38E+00
+	BI-212	727.17	*	11.80	8.84E-01	9.06E-01	9.06E-01
		1620.62		2.75	4.43E-01		2.39E+00
+	PB-212	238.63	*	44.60	1.26E+00	1.96E-01	1.96E-01
		300.09	*	3.41	9.14E-01		2.86E+00
+	BI-214	609.31	*	46.30	8.36E-01	2.02E-01	2.02E-01
		1120.29	*	15.10	9.57E-01		8.75E-01
		1764.49	*	15.80	1.16E+00		4.99E-01
		2204.22	*	4.98	1.04E+00		1.66E+00
+	PB-214	295.21	*	19.19	9.30E-01	2.04E-01	4.98E-01
		351.92	*	37.19	9.70E-01		2.04E-01
+	RN-219	401.80		6.50	-1.99E-01	7.92E-01	7.92E-01
+	RA-223	323.87		3.88	3.38E-01	1.30E+00	1.30E+00

Analysis Report for 1707091-09

HTC-A08-BKGD01-2430-01

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	RA-224	240.98	*	3.95	4.00E+00	2.25E+00	2.25E+00
+	RA-225	40.00		31.00	2.57E+01	3.38E+01	3.38E+01
+	RA-226	186.21	*	3.28	3.30E+00	2.10E+00	2.10E+00
+	TH-227	50.10		8.40	-1.23E-02	5.86E-01	5.86E-01
		236.00		11.50	1.39E-01		6.05E-01
		256.20		6.30	-3.59E-01		6.75E-01
+	AC-228	338.32	*	11.40	1.34E+00	3.48E-01	5.49E-01
		911.07	*	27.70	1.45E+00		3.48E-01
		969.11	*	16.60	9.21E-01		9.04E-01
+	TH-230	48.44		16.90	-2.10E-01	3.16E-01	3.16E-01
		62.85		4.60	8.72E-01		1.06E+00
		67.67		0.37	-4.54E-01		1.16E+01
+	PA-231	283.67		1.60	1.90E-01	2.25E+00	2.89E+00
		302.67		2.30	2.75E-01		2.25E+00
+	TH-231	25.64		14.70	0.00E+00	1.20E-01	1.20E-01
		84.21		6.40	-7.61E-01		6.03E-01
+	PA-233	311.98		38.60	2.98E-02	1.64E+00	1.64E+00
+	PA-234	131.20		20.40	-2.10E-02	1.81E-01	1.81E-01
		733.99		8.80	-5.65E-02		7.88E-01
		946.00		12.00	4.17E-02		6.21E-01
+	PA-234M	1001.03		0.92	1.05E+00	8.29E+00	8.29E+00
+	TH-234	63.29		3.80	1.28E+00	1.29E+00	1.29E+00
+	U-235	143.76		10.50	-9.85E-02	4.21E-01	4.21E-01
		163.35		4.70	-3.41E-01		9.68E-01
		205.31		4.70	6.14E-02		1.08E+00
+	NP-237	86.50		12.60	4.64E-01	3.50E-01	3.50E-01
+	NP-239	106.10		22.70	3.66E+11	1.13E+12	1.13E+12
		228.18		10.70	1.57E+12		3.74E+12
		277.60		14.10	1.29E+12		2.71E+12
+	AM-241	59.54		35.90	2.00E-03	1.30E-01	1.30E-01
+	AM-243	74.67		66.00	-1.08E-01	9.03E-02	9.03E-02
+	CM-243	209.75		3.29	1.89E+00	3.49E-01	1.69E+00
		228.14		10.60	2.02E-01		4.83E-01
		277.60		14.00	1.67E-01		3.49E-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 1707091-09

HTC-A08-BKGD01-2430-01

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	1.82E+00	1.82E+00	-2.73E-01	8.54E-01
	NA-22	1274.54		99.94	9.13E-02	9.13E-02	3.68E-02	4.21E-02
@	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	6.52E-02	6.52E-02	9.58E-03	2.84E-02
+	K-40	1460.81	*	10.67	7.75E-01	7.75E-01	2.38E+01	3.53E-01
@	AR-41	1293.64		99.16	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	TI-44	67.88		94.40	4.55E-02	4.55E-02	-1.78E-03	2.21E-02
		78.34		96.00	5.30E-02		4.21E-02	2.59E-02
+	SC-46	889.25	*	99.98	1.40E-01	1.40E-01	9.87E-02	6.41E-02
		1120.51	*	99.99	3.04E-01		3.33E-01	1.45E-01
	V-48	983.52		99.98	5.64E+00	5.64E+00	2.50E+00	2.61E+00
		1312.10		97.50	6.73E+00		1.09E+00	3.09E+00
	CR-51	320.08		9.83	6.03E+00	6.03E+00	-4.11E+00	2.87E+00
	MN-54	834.83		99.97	8.74E-02	8.74E-02	2.07E-02	4.07E-02
	CO-56	846.75		99.96	1.71E-01	1.71E-01	6.41E-02	7.95E-02
		1037.75		14.03	1.44E+00		3.15E-01	6.69E-01
		1238.25		67.00	3.96E-01		2.02E-01	1.86E-01
		1771.40		15.51	1.01E+00		-3.43E-01	4.38E-01
		2598.48		16.90	6.83E-01		2.60E-01	2.71E-01
	CO-57	122.06		85.51	5.01E-02	5.01E-02	1.52E-02	2.41E-02
		136.48		10.60	5.20E-01		-1.65E-01	2.52E-01
	CO-58	810.76		99.40	1.57E-01	1.57E-01	-1.37E-02	7.23E-02
	FE-59	1099.22		56.50	7.04E-01	7.04E-01	6.30E-02	3.27E-01
		1291.56		43.20	7.62E-01		-2.84E-01	3.44E-01
	CO-60	1173.22		100.00	9.29E-02	8.35E-02	-3.45E-02	4.32E-02
		1332.49		100.00	8.35E-02		4.20E-02	3.82E-02
	ZN-65	1115.52		50.75	2.27E-01	2.27E-01	8.66E-03	1.06E-01
	GA-67	93.31		35.70	2.56E+08	2.56E+08	5.99E+08	1.25E+08
		208.95		2.24	5.13E+09		4.85E+09	2.49E+09
		300.22		16.00	6.94E+08		4.68E+08	3.33E+08
	SE-75	121.11		16.70	3.47E-01	1.30E-01	-1.29E-01	1.67E-01
		136.00		59.20	1.30E-01		-4.56E-03	6.32E-02
		264.65		59.80	1.44E-01		7.82E-03	6.93E-02
		279.53		25.20	3.35E-01		-2.80E-01	1.60E-01
		400.65		11.40	8.04E-01		1.51E-02	3.81E-01
	RB-82	776.52		13.00	7.23E+00	7.23E+00	-2.59E+00	3.35E+00
	RB-83	520.41		46.00	2.64E-01	2.64E-01	1.41E-01	1.24E-01
		529.64		30.30	3.34E-01		-3.63E-02	1.55E-01
		552.65		16.40	7.81E-01		5.40E-01	3.67E-01
	KR-85	513.99		0.43	1.30E+01	1.30E+01	-1.95E+01	6.10E+00
	SR-85	513.99		99.27	1.64E-01	1.64E-01	-2.47E-01	7.71E-02

Analysis Report for 1707091-09

HTC-A08-BKGD01-2430-01

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	Y-88	898.02		93.40	1.46E-01	1.11E-01	5.68E-02	6.80E-02
		1836.01		99.38	1.11E-01		-3.16E-02	4.74E-02
	MO-93	263.06		56.72	8.16E-02	6.00E-02	-5.80E-02	3.90E-02
		684.67		99.68	6.45E-02		-2.07E-02	3.02E-02
		1477.11		99.08	6.00E-02		5.28E-03	2.62E-02
	NB-93M	16.57		9.43	6.78E+00	6.78E+00	0.00E+00	0.00E+00
	NB-94	702.63		100.00	6.77E-02	6.77E-02	-2.99E-02	3.18E-02
		871.10		100.00	6.86E-02		-1.82E-02	3.19E-02
	NB-95	765.79		99.81	5.40E-01	5.40E-01	-8.34E-02	2.54E-01
	NB-95M	235.69		25.00	7.19E+07	7.19E+07	1.66E+07	3.50E+07
	ZR-95	724.18		43.70	5.53E-01	3.67E-01	0.00E+00	2.62E-01
		756.72		55.30	3.67E-01		-5.06E-02	1.72E-01
	MO-99	181.06		6.20	8.12E+10	5.65E+10	2.47E+10	3.92E+10
		739.58		12.80	5.65E+10		-1.47E+10	2.64E+10
		778.00		4.50	1.42E+11		-9.65E+10	6.57E+10
	RU-103	497.08		89.00	2.96E-01	2.96E-01	-2.20E-01	1.38E-01
	RU-106	621.84		9.80	7.53E-01	7.53E-01	-4.21E-01	3.54E-01
	AG-108M	433.93		89.90	4.71E-02	4.71E-02	-2.15E-02	2.20E-02
		614.37		90.40	7.29E-02		6.14E-03	3.44E-02
		722.95		90.50	7.84E-02		0.00E+00	3.69E-02
+	CD-109	88.03	*	3.72	3.03E+00	3.03E+00	1.93E+00	1.49E+00
	AG-110M	657.75		93.14	8.58E-02	8.58E-02	-7.75E-02	4.01E-02
		677.61		10.53	7.72E-01		1.08E-01	3.61E-01
		706.67		16.46	5.94E-01		1.89E-01	2.81E-01
		763.93		21.98	4.28E-01		-2.81E-01	2.01E-01
		884.67		71.63	1.26E-01		-1.10E-02	5.86E-02
		1384.27		23.94	3.32E-01		1.39E-01	1.46E-01
	CD-113M	263.70		0.02	2.10E+02	2.10E+02	4.62E+01	1.01E+02
	SN-113	255.12		1.93	4.26E+00	1.45E-01	2.67E+00	2.04E+00
		391.69		64.90	1.45E-01		1.53E-03	6.89E-02
	TE123M	159.00		84.10	9.61E-02	9.61E-02	1.14E-02	4.65E-02
	SB-124	602.71		97.87	2.07E-01	2.07E-01	-3.71E-02	9.78E-02
		645.85		7.26	3.03E+00		1.28E+00	1.43E+00
		722.78		11.10	1.89E+00		4.08E-01	8.84E-01
		1691.02		49.00	3.56E-01		-1.11E-01	1.51E-01
	I-125	35.49		6.49	6.04E+00	6.04E+00	-4.31E+01	2.92E+00
	SB-125	176.33		6.89	6.90E-01	1.81E-01	-4.15E-01	3.34E-01
		427.89		29.33	1.81E-01		8.93E-02	8.54E-02
		463.38		10.35	6.24E-01		5.65E-01	2.97E-01
		600.56		17.80	3.81E-01		-1.25E-01	1.80E-01
		635.90		11.32	5.27E-01		-3.30E-02	2.45E-01
	SB-126	414.70		83.30	1.63E+01	1.63E+01	-2.76E+00	7.71E+00
		666.33		99.60	1.90E+01		-1.60E+00	8.97E+00
		695.00		99.60	1.98E+01		8.13E+00	9.33E+00
		720.50		53.80	3.17E+01		1.42E+00	1.48E+01
+	SN-126	87.57	*	37.00	2.62E-01	2.62E-01	1.67E-01	1.29E-01
	SB-127	473.00		25.00	1.51E+07	1.39E+07	-3.64E+06	7.07E+06
		685.20		35.70	1.39E+07		-4.45E+06	6.50E+06
		783.80		14.70	3.84E+07		1.49E+07	1.80E+07
	I-129	29.78		57.00	4.32E-01	4.32E-01	6.60E-02	2.09E-01
		33.60		13.20	2.03E+00		8.44E+00	9.99E-01
		39.58		7.52	1.27E+00		9.68E-01	6.16E-01
	I-131	284.30		6.05	4.59E+03	3.47E+02	3.02E+02	2.19E+03

Analysis Report for 1707091-09

HTC-A08-BKGD01-2430-01

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
I-131	364.48	81.20	3.47E+02	3.47E+02	-2.00E+02	1.64E+02
	636.97	7.26	4.63E+03		1.80E+02	2.16E+03
	722.89	1.80	2.36E+04		0.00E+00	1.11E+04
TE-132	49.72	13.10	7.96E+08	1.21E+08	-1.67E+07	3.84E+08
	228.16	88.00	1.21E+08		5.07E+07	5.84E+07
BA-133	81.00	33.00	1.17E-01	8.31E-02	4.73E-02	5.64E-02
	302.84	17.80	2.96E-01		3.62E-02	1.42E-01
	356.01	60.00	8.31E-02		-4.34E-03	3.95E-02
@ I-133	529.87	86.30	1.00E+26	1.00E+26	1.00E+26	1.00E+20
XE-133	81.00	38.00	6.16E+04	6.16E+04	2.50E+04	2.98E+04
CS-134	563.23	8.38	7.17E-01	7.52E-02	2.38E-01	3.36E-01
	569.32	15.43	3.70E-01		-2.51E-03	1.73E-01
	604.70	97.60	7.52E-02		-5.72E-03	3.55E-02
	795.84	85.40	1.01E-01		6.05E-02	4.76E-02
	801.93	8.73	8.18E-01		1.11E-01	3.81E-01
CS-135	268.24	16.00	3.28E-01	3.28E-01	1.33E-02	1.58E-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	1.24E+02	1.34E+01	-4.91E+01	6.00E+01
	163.89	4.61	2.01E+02		-7.08E+01	9.72E+01
	176.55	13.56	6.65E+01		-4.00E+01	3.21E+01
	273.65	12.66	7.22E+01		-1.01E+02	3.45E+01
	340.57	48.50	2.33E+01		2.39E+00	1.12E+01
	818.50	99.70	1.34E+01		3.24E+00	6.22E+00
	1048.07	79.60	1.94E+01		-9.37E+00	8.96E+00
	1235.34	19.70	1.09E+02		3.43E+01	5.13E+01
CS-137	661.65	85.12	8.41E-02	8.41E-02	4.62E-02	3.98E-02
LA-138	788.74	34.00	2.27E-01	1.07E-01	1.33E-01	1.07E-01
	1435.80	66.00	1.07E-01		2.28E-02	4.82E-02
CE-139	165.85	80.35	9.37E-02	9.37E-02	-1.68E-03	4.54E-02
BA-140	162.64	6.70	1.64E+02	4.75E+01	1.19E+02	7.97E+01
	304.84	4.50	2.55E+02		6.49E+01	1.22E+02
	423.70	3.20	3.49E+02		-3.28E+01	1.64E+02
	437.55	2.00	5.07E+02		-1.63E+02	2.37E+02
	537.32	25.00	4.75E+01		1.17E+01	2.22E+01
LA-140	328.77	20.50	6.50E+01	1.65E+01	3.72E+01	3.12E+01
	487.03	45.50	2.47E+01		-4.08E+00	1.15E+01
	815.85	23.50	6.06E+01		3.05E+00	2.80E+01
	1596.49	95.49	1.65E+01		1.08E+00	7.28E+00
CE-141	145.44	48.40	7.96E-01	7.96E-01	1.15E-01	3.86E-01
@ CE-143	57.36	11.80	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	293.26	42.00	1.00E+26		1.00E+26	1.00E+20
@	664.55	5.20	1.00E+26		1.00E+26	1.00E+20
CE-144	133.54	10.80	4.11E-01	4.11E-01	-8.32E-02	1.98E-01
PM-144	476.78	42.00	1.47E-01	8.36E-02	-2.22E-02	6.93E-02
	618.01	98.60	8.36E-02		3.32E-02	3.95E-02
	696.49	99.49	8.60E-02		6.08E-02	4.05E-02
PM-145	36.85	21.70	5.13E-01	2.67E-01	5.52E-02	2.48E-01
	37.36	39.70	2.67E-01		-2.48E-01	1.29E-01
	42.30	15.10	4.33E-01		3.48E-02	2.08E-01
	72.40	2.31	2.04E+00		-9.08E+00	9.94E-01
PM-146	453.90	39.94	1.14E-01	1.14E-01	-2.37E-02	5.33E-02

Analysis Report for 1707091-09

HTC-A08-BKGD01-2430-01

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
PM-146	735.90	14.01	5.07E-01	1.14E-01	1.10E-01	2.38E-01
	747.13	13.10	5.46E-01		2.19E-01	2.56E-01
ND-147	91.11	28.90	8.55E+01	8.55E+01	-1.27E+02	4.16E+01
	531.02	13.10	2.02E+02		-1.46E+01	9.37E+01
PM-149	285.90	3.10	8.09E+13	8.09E+13	-5.39E+13	3.87E+13
EU-152	121.78	20.50	1.64E-01	1.64E-01	4.97E-02	7.87E-02
	244.69	5.40	8.93E-01		-1.77E+00	4.29E-01
	344.27	19.13	2.41E-01		-9.25E-03	1.14E-01
	778.89	9.20	6.44E-01		-4.37E-01	2.98E-01
	964.01	10.40	8.64E-01		-4.76E-02	4.06E-01
	1085.78	7.22	1.09E+00		9.61E-02	5.03E-01
	1112.02	9.60	8.85E-01		3.92E-02	4.11E-01
	1407.95	14.94	6.03E-01		2.24E-03	2.77E-01
GD-153	97.43	31.30	1.42E-01	1.42E-01	3.76E-02	6.87E-02
	103.18	22.20	1.82E-01		-4.46E-03	8.75E-02
EU-154	123.07	40.50	8.09E-02	8.09E-02	-2.45E-02	3.89E-02
	723.30	19.70	3.68E-01		0.00E+00	1.73E-01
	873.19	11.50	6.35E-01		3.11E-01	2.96E-01
	996.32	10.30	6.96E-01		-1.36E-01	3.21E-01
	1004.76	17.90	4.19E-01		9.48E-02	1.94E-01
	1274.45	35.50	2.44E-01		9.85E-02	1.12E-01
EU-155	86.50	30.90	1.48E-01	1.48E-01	1.97E-01	7.21E-02
	105.30	20.70	1.63E-01		5.29E-02	7.86E-02
EU-156	811.77	10.40	5.53E+01	5.53E+01	-1.94E+01	2.54E+01
	1153.47	7.20	1.19E+02		-5.10E+01	5.51E+01
	1230.71	8.90	1.02E+02		1.82E+01	4.74E+01
HO-166M	184.41	72.60	8.15E-02	8.15E-02	1.42E-01	3.97E-02
	280.45	29.60	1.56E-01		2.47E-02	7.44E-02
	410.94	11.10	4.56E-01		3.33E-02	2.16E-01
	711.69	54.10	1.23E-01		-6.40E-03	5.79E-02
TM-171	66.72	0.14	3.38E+01	3.38E+01	-7.45E-01	1.64E+01
HF-172	67.35	5.31	8.98E-01	3.26E-01	-3.51E-02	4.36E-01
	125.81	11.30	3.26E-01		3.43E-02	1.57E-01
LU-172	181.53	20.60	7.78E+03	4.58E+03	2.47E+03	3.77E+03
	900.72	29.81	8.26E+03		-9.01E+02	3.84E+03
	1093.66	62.50	4.58E+03		4.12E+02	2.13E+03
LU-173	100.72	5.24	6.98E-01	2.87E-01	2.32E-02	3.36E-01
	272.11	21.20	2.87E-01		2.16E-01	1.38E-01
HF-175	343.40	84.00	1.47E-01	1.47E-01	3.30E-02	6.99E-02
LU-176	88.34	13.30	3.35E-01	4.93E-02	1.75E-01	1.63E-01
	201.83	86.00	5.70E-02		6.25E-03	2.75E-02
	306.78	94.00	4.93E-02		-2.53E-02	2.35E-02
HF-181	133.02	41.70	4.42E-01	3.05E-01	6.18E-02	2.13E-01
	345.85	17.20	1.39E+00		1.61E-01	6.58E-01
	482.03	82.80	3.05E-01		1.44E-03	1.43E-01
TA-182	67.75	41.20	1.92E-01	1.92E-01	-7.51E-03	9.31E-02
	1121.30	34.90	6.44E-01		8.20E-01	3.06E-01
	1189.05	16.23	9.46E-01		-8.22E-01	4.37E-01
	1221.41	26.98	6.91E-01		2.09E-01	3.24E-01
	1231.02	11.44	1.46E+00		2.61E-01	6.80E-01
IR-192	308.46	29.68	4.02E-01	2.66E-01	-1.00E-03	1.91E-01
	468.07	48.10	2.66E-01		1.07E-02	1.25E-01
HG-203	279.19	77.30	2.89E-01	2.89E-01	3.07E-01	1.38E-01

Analysis Report for 1707091-09

HTC-A08-BKGD01-2430-01

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	TL-204	374.74		94.11	5.55E-02	5.55E-02	1.58E-02	2.63E-02
		899.15		99.16	7.59E-02		-5.71E-03	3.53E-02
		911.74		91.10	1.66E-01		4.30E-01	8.01E-02
	BI-207	569.67		97.72	5.36E-02	5.36E-02	-3.63E-04	2.50E-02
		1063.62		74.90	9.84E-02		-3.41E-02	4.54E-02
+	TL-208	583.14	*	30.22	3.14E-01	2.29E-01	1.13E+00	1.51E-01
		860.37	*	4.48	2.19E+00		1.53E+00	1.04E+00
		2614.66	*	35.85	2.29E-01		8.72E-01	1.01E-01
	BI-210M	262.00		45.00	1.03E-01	1.03E-01	2.05E-02	4.93E-02
		300.00		23.00	2.35E-01		1.58E-01	1.13E-01
+	PB-210	46.50	*	4.25	1.92E+00	1.92E+00	1.60E+00	9.35E-01
	PB-211	404.84		2.90	1.71E+00	1.71E+00	4.49E-02	8.09E-01
		831.96		2.90	2.38E+00		-3.86E-01	1.11E+00
+	BI-212	727.17	*	11.80	9.06E-01	9.06E-01	8.84E-01	4.35E-01
		1620.62		2.75	2.39E+00		4.43E-01	1.05E+00
+	PB-212	238.63	*	44.60	1.96E-01	1.96E-01	1.26E+00	9.58E-02
		300.09	*	3.41	2.86E+00		9.14E-01	1.40E+00
+	BI-214	609.31	*	46.30	2.02E-01	2.02E-01	8.36E-01	9.69E-02
		1120.29	*	15.10	8.75E-01		9.57E-01	4.18E-01
		1764.49	*	15.80	4.99E-01		1.16E+00	2.23E-01
		2204.22	*	4.98	1.66E+00		1.04E+00	7.36E-01
+	PB-214	295.21	*	19.19	4.98E-01	2.04E-01	9.30E-01	2.43E-01
		351.92	*	37.19	2.04E-01		9.70E-01	9.89E-02
	RN-219	401.80		6.50	7.92E-01	7.92E-01	-1.99E-01	3.75E-01
	RA-223	323.87		3.88	1.30E+00	1.30E+00	3.38E-01	6.23E-01
+	RA-224	240.98	*	3.95	2.25E+00	2.25E+00	4.00E+00	1.10E+00
	RA-225	40.00		31.00	3.38E+01	3.38E+01	2.57E+01	1.64E+01
+	RA-226	186.21	*	3.28	2.10E+00	2.10E+00	3.30E+00	1.03E+00
	TH-227	50.10		8.40	5.86E-01	5.86E-01	-1.23E-02	2.83E-01
		236.00		11.50	6.05E-01		1.39E-01	2.95E-01
		256.20		6.30	6.75E-01		-3.59E-01	3.23E-01
+	AC-228	338.32	*	11.40	5.49E-01	3.48E-01	1.34E+00	2.64E-01
		911.07	*	27.70	3.48E-01		1.45E+00	1.65E-01
		969.11	*	16.60	9.04E-01		9.21E-01	4.36E-01
	TH-230	48.44		16.90	3.16E-01	3.16E-01	-2.10E-01	1.52E-01
		62.85		4.60	1.06E+00		8.72E-01	5.16E-01
		67.67		0.37	1.16E+01		-4.54E-01	5.63E+00
	PA-231	283.67		1.60	2.89E+00	2.25E+00	1.90E-01	1.38E+00
		302.67		2.30	2.25E+00		2.75E-01	1.08E+00
	TH-231	25.64		14.70	1.20E-01	1.20E-01	0.00E+00	0.00E+00
		84.21		6.40	6.03E-01		-7.61E-01	2.93E-01
	PA-233	311.98		38.60	1.64E+00	1.64E+00	2.98E-02	7.83E-01
	PA-234	131.20		20.40	1.81E-01	1.81E-01	-2.10E-02	8.73E-02
		733.99		8.80	7.88E-01		-5.65E-02	3.70E-01
		946.00		12.00	6.21E-01		4.17E-02	2.89E-01
	PA-234M	1001.03		0.92	8.29E+00	8.29E+00	1.05E+00	3.85E+00
	TH-234	63.29		3.80	1.29E+00	1.29E+00	1.28E+00	6.25E-01
	U-235	143.76		10.50	4.21E-01	4.21E-01	-9.85E-02	2.04E-01
		163.35		4.70	9.68E-01		-3.41E-01	4.69E-01
		205.31		4.70	1.08E+00		6.14E-02	5.23E-01
	NP-237	86.50		12.60	3.50E-01	3.50E-01	4.64E-01	1.70E-01
	NP-239	106.10		22.70	1.13E+12	1.13E+12	3.66E+11	5.44E+11
		228.18		10.70	3.74E+12		1.57E+12	1.81E+12

Analysis Report for 1707091-09

HTC-A08-BKGD01-2430-01

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
NP-239	277.60	14.10	2.71E+12	1.13E+12	1.29E+12	1.30E+12
AM-241	59.54	35.90	1.30E-01	1.30E-01	2.00E-03	6.29E-02
AM-243	74.67	66.00	9.03E-02	9.03E-02	-1.08E-01	4.42E-02
CM-243	209.75	3.29	1.69E+00	3.49E-01	1.89E+00	8.17E-01
	228.14	10.60	4.83E-01		2.02E-01	2.33E-01
	277.60	14.00	3.49E-01		1.67E-01	1.67E-01

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

No Action Level results available for reporting purposes.

DATA REVIEW COMMENTS REPORT

Creation Date	Comment	User

No Data Review Comments Entered.

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

Sample Title: HTC-A08-BKGD01-2430-01

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	0	0	0	0	0	0
25:	0	0	0	0	51	97	145	167
33:	216	673	95	104	95	105	100	137
41:	113	88	72	62	55	77	164	91
49:	89	86	78	82	75	93	109	81
57:	98	123	130	116	110	116	133	185
65:	122	112	133	117	121	131	130	145
73:	152	176	412	213	411	373	108	113
81:	111	105	93	126	125	98	181	181
89:	97	195	118	112	225	156	87	64
97:	83	75	99	87	60	84	65	57
105:	73	90	74	78	79	81	80	94
113:	86	82	73	82	71	79	76	72
121:	81	61	82	65	74	84	63	74
129:	102	99	81	84	86	69	74	80
137:	68	59	61	77	76	78	59	66
145:	79	68	73	70	75	74	66	51
153:	79	69	81	78	75	70	52	61
161:	68	62	73	75	61	51	72	55
169:	57	67	68	50	60	62	56	38
177:	65	62	58	68	57	57	49	72
185:	89	165	102	61	52	49	53	48
193:	46	53	60	62	51	65	52	60
201:	54	54	67	52	58	68	57	54
209:	102	91	55	45	45	56	44	59
217:	55	57	55	43	51	51	44	48
225:	56	49	52	58	51	52	39	48
233:	48	48	59	39	63	268	561	107
241:	103	138	68	38	32	30	38	34
249:	41	30	48	37	37	33	28	37
257:	36	19	37	38	29	35	41	34
265:	30	46	38	33	42	62	54	30
273:	43	32	29	22	45	51	29	32
281:	30	24	43	28	31	31	31	36
289:	37	38	33	36	34	37	174	97
297:	30	30	31	56	52	30	31	32
305:	35	29	28	25	23	35	28	27
313:	25	29	32	25	27	39	32	14
321:	29	24	40	33	26	32	29	50
329:	45	32	33	29	24	29	26	27
337:	43	111	88	18	23	30	16	22
345:	23	22	23	24	27	23	101	329
353:	65	24	31	25	21	24	21	22
361:	21	23	22	19	24	23	33	16

369:	18	22	23	23	14	26	26	30

Sample Title: HTC-A08-BKGD01-2430-01

Channel								
377:	23	19	18	26	21	26	17	19
385:	18	22	16	33	26	22	27	17
393:	22	31	22	15	23	22	22	24
401:	24	22	22	23	28	14	18	20
409:	22	32	19	22	12	21	25	23
417:	15	20	28	16	14	17	28	13
425:	15	15	21	18	18	24	14	15
433:	12	15	16	9	19	13	11	17
441:	20	25	9	23	14	12	11	19
449:	17	9	21	14	19	9	11	15
457:	9	22	12	12	13	23	56	21
465:	15	19	17	11	19	18	13	17
473:	15	14	20	19	16	15	16	26
481:	16	9	13	12	12	18	16	14
489:	11	11	24	15	17	13	14	9
497:	16	9	12	17	22	15	11	15
505:	13	22	15	15	30	66	79	42
513:	14	17	12	5	13	27	17	10
521:	12	18	11	16	12	11	10	13
529:	13	11	8	15	9	17	9	15
537:	12	20	12	16	5	8	14	18
545:	10	22	16	10	12	20	16	18
553:	13	18	13	8	10	6	15	13
561:	9	13	22	17	15	9	13	9
569:	16	17	12	12	17	17	15	13
577:	11	13	12	10	17	58	161	89
585:	24	12	24	12	17	12	22	13
593:	13	15	15	19	20	9	16	10
601:	10	13	15	14	15	16	20	60
609:	168	105	12	10	15	14	13	14
617:	19	15	18	12	12	6	14	10
625:	9	13	15	6	11	9	12	7
633:	8	4	9	8	13	10	12	9
641:	10	11	15	11	15	16	7	17
649:	17	7	16	9	17	12	7	10
657:	9	10	9	15	16	20	15	16
665:	10	13	10	10	15	12	8	10
673:	12	12	9	12	7	7	10	14
681:	9	7	9	10	16	12	11	11
689:	15	13	10	10	12	13	20	9
697:	11	15	11	7	7	16	10	16
705:	15	15	17	13	12	11	13	12
713:	7	10	10	7	4	9	13	10
721:	10	10	6	13	11	26	38	30
729:	8	9	15	12	9	14	10	8
737:	12	13	12	9	10	7	10	13
745:	10	13	11	10	11	9	6	11
753:	8	15	12	15	7	11	5	10
761:	16	14	8	12	9	6	14	21
769:	20	6	13	14	8	12	9	7
777:	7	6	6	10	5	13	9	8
785:	18	17	13	11	8	7	15	7
793:	11	15	31	11	6	10	7	8

801:	6	7	13	9	8	6	9	10

Sample Title: HTC-A08-BKGD01-2430-01

Channel								
809:	9	3	8	5	2	8	6	11
817:	10	7	10	6	9	7	9	15
825:	13	14	8	16	9	7	9	6
833:	7	10	13	14	6	8	9	20
841:	7	7	6	13	12	11	12	5
849:	5	10	4	6	9	8	6	8
857:	11	8	9	21	17	10	14	7
865:	8	13	8	9	4	8	6	7
873:	13	11	11	7	7	5	7	7
881:	5	11	11	6	5	5	13	8
889:	12	9	5	2	6	10	5	9
897:	11	7	10	7	9	7	10	10
905:	12	7	7	13	13	70	98	43
913:	11	7	12	5	6	7	12	5
921:	5	6	11	9	7	7	10	6
929:	6	6	9	6	13	9	11	5
937:	3	4	7	5	7	8	5	10
945:	10	10	8	9	12	8	13	3
953:	5	9	8	6	7	8	11	3
961:	6	5	15	26	15	14	17	44
969:	44	22	8	7	11	6	6	4
977:	6	4	8	10	10	5	9	7
985:	2	7	14	10	8	6	10	1
993:	5	8	8	8	9	4	6	12
1001:	7	10	9	6	8	8	4	5
1009:	4	9	10	6	6	9	19	9
1017:	7	5	6	5	7	10	6	1
1025:	4	5	9	4	8	3	7	7
1033:	3	13	13	7	11	6	8	6
1041:	6	13	4	6	7	6	12	11
1049:	4	6	13	9	9	9	5	8
1057:	6	8	6	8	5	5	10	6
1065:	6	7	7	12	9	9	9	5
1073:	4	8	8	5	10	10	8	1
1081:	8	9	1	4	9	11	10	7
1089:	8	10	5	10	11	8	7	9
1097:	9	8	9	8	10	5	10	6
1105:	9	9	6	5	9	10	7	8
1113:	11	8	12	5	8	10	25	34
1121:	30	13	7	8	6	12	6	11
1129:	8	6	7	6	10	12	8	13
1137:	12	5	3	9	7	12	6	9
1145:	12	6	10	14	9	8	3	7
1153:	7	14	9	9	8	11	11	12
1161:	7	7	10	10	13	13	10	14
1169:	6	13	12	9	8	6	7	10
1177:	10	10	9	14	9	9	10	14
1185:	3	6	8	6	11	10	7	11
1193:	12	6	8	9	10	12	9	11
1201:	10	10	11	8	10	7	10	10
1209:	10	9	7	9	7	14	11	12
1217:	12	8	15	13	12	7	9	10
1225:	6	7	9	4	12	9	8	6

1233:	10	10	6	16	7	25	13	8

Sample Title: HTC-A08-BKGD01-2430-01

Channel								
1241:	14	5	5	3	10	10	9	11
1249:	11	8	10	7	5	4	12	6
1257:	9	3	7	8	6	3	4	7
1265:	5	8	11	8	6	4	7	5
1273:	7	9	5	6	8	5	4	8
1281:	9	17	4	4	8	6	9	4
1289:	4	8	4	4	2	3	5	4
1297:	3	6	5	5	8	5	8	5
1305:	4	6	7	11	5	4	8	3
1313:	6	5	6	3	4	3	6	2
1321:	9	0	10	8	4	2	6	5
1329:	6	2	8	4	7	8	4	1
1337:	2	7	4	2	1	3	5	3
1345:	2	6	1	2	3	2	6	4
1353:	2	3	7	2	1	3	5	1
1361:	5	2	1	4	2	4	0	5
1369:	2	3	4	2	3	3	3	11
1377:	6	7	3	1	3	4	3	3
1385:	2	3	1	1	3	4	2	0
1393:	3	3	2	2	4	1	3	1
1401:	9	6	5	4	7	4	5	9
1409:	4	2	4	5	1	0	0	2
1417:	3	4	3	4	0	1	4	4
1425:	3	3	3	3	2	3	3	2
1433:	1	4	2	0	4	4	6	2
1441:	2	5	3	1	0	2	5	4
1449:	2	3	3	3	4	2	3	4
1457:	16	66	176	363	272	50	7	0
1465:	0	2	4	1	3	0	1	2
1473:	2	1	2	1	1	2	4	1
1481:	2	3	1	1	1	3	1	2
1489:	0	2	1	4	2	1	5	5
1497:	2	2	1	5	5	3	4	2
1505:	2	1	5	10	5	4	4	3
1513:	1	1	4	0	1	2	3	2
1521:	1	2	2	0	0	0	0	1
1529:	1	4	4	3	0	1	2	1
1537:	0	1	2	0	1	2	1	2
1545:	1	0	2	1	0	3	1	2
1553:	1	0	2	2	4	0	5	0
1561:	2	0	2	4	1	1	2	3
1569:	1	3	0	1	1	2	2	1
1577:	0	2	3	3	0	2	2	1
1585:	5	5	6	9	1	3	5	2
1593:	4	3	1	2	0	1	1	0
1601:	0	1	0	1	0	1	0	3
1609:	2	4	4	2	1	0	2	1
1617:	3	1	2	2	2	2	3	2
1625:	3	2	0	3	3	3	4	1
1633:	1	0	1	1	1	4	3	0
1641:	2	2	0	3	1	1	0	2
1649:	2	0	1	0	2	2	1	1
1657:	0	1	1	2	2	1	0	3

1665:	1	1	1	2	1	5	3	1

Sample Title: HTC-A08-BKGD01-2430-01

Channel								
1673:	1	2	4	2	1	0	0	1
1681:	0	3	1	0	4	1	1	0
1689:	4	1	1	1	0	2	0	2
1697:	4	1	1	1	1	1	1	1
1705:	2	2	1	0	1	1	2	2
1713:	0	0	1	3	0	3	2	0
1721:	2	0	2	0	2	2	1	4
1729:	9	2	1	0	2	0	1	0
1737:	1	1	1	0	1	2	1	2
1745:	0	0	2	2	0	2	0	1
1753:	0	1	2	1	1	4	1	0
1761:	4	12	23	18	13	5	0	1
1769:	3	1	2	1	1	1	0	0
1777:	1	1	0	0	0	0	1	0
1785:	0	1	0	2	1	3	1	1
1793:	2	2	0	1	2	2	0	0
1801:	0	2	1	1	1	2	2	2
1809:	2	3	1	2	3	1	0	0
1817:	5	0	1	0	0	1	0	2
1825:	0	0	2	3	2	0	0	0
1833:	2	0	2	0	3	1	3	1
1841:	1	4	0	1	1	4	1	7
1849:	2	0	0	0	1	0	2	0
1857:	1	0	0	0	1	0	0	0
1865:	1	0	2	1	2	1	1	2
1873:	5	0	2	0	1	2	1	0
1881:	0	0	0	2	1	0	1	0
1889:	1	1	1	1	2	1	1	1
1897:	2	0	3	0	0	0	0	0
1905:	0	1	2	2	0	1	2	0
1913:	1	1	0	0	1	0	1	1
1921:	1	1	1	1	0	1	1	0
1929:	0	0	2	2	2	3	1	2
1937:	0	0	1	0	0	0	1	1
1945:	2	0	1	2	3	1	2	1
1953:	1	4	1	0	1	0	1	0
1961:	2	0	0	2	1	0	0	1
1969:	0	2	0	3	0	0	0	1
1977:	3	1	1	0	1	0	1	0
1985:	0	1	0	0	1	0	0	0
1993:	1	1	0	0	0	0	1	0
2001:	0	0	3	1	1	2	2	2
2009:	1	2	1	0	0	0	0	1
2017:	2	0	1	1	0	1	1	0
2025:	0	0	1	2	1	0	1	0
2033:	2	2	1	1	0	4	0	0
2041:	0	2	0	1	1	0	1	4
2049:	1	0	0	2	1	0	0	1
2057:	1	0	2	1	0	4	2	0
2065:	0	1	0	1	3	0	0	0
2073:	2	0	0	2	1	1	0	1
2081:	0	0	1	0	2	0	1	2
2089:	0	0	1	2	1	0	2	3

2097:	0	4	0	1	1	5	8	3

Sample Title: HTC-A08-BKGD01-2430-01

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

2529:	0	0	0	0	0	0	2	1

Sample Title: HTC-A08-BKGD01-2430-01

Channel								
2537:	1	0	1	0	0	0	0	0
2545:	1	0	0	0	0	0	0	0
2553:	0	1	0	0	0	0	0	0
2561:	1	2	1	0	1	2	0	0
2569:	0	0	0	0	0	1	0	0
2577:	1	0	0	0	1	0	0	0
2585:	0	0	0	0	0	0	0	0
2593:	0	0	0	1	1	0	1	0
2601:	1	1	0	0	0	1	0	2
2609:	2	2	6	23	29	18	10	3
2617:	1	1	1	0	1	0	1	0
2625:	0	0	0	0	0	0	0	1
2633:	0	0	0	1	0	0	0	0
2641:	0	0	0	1	2	1	0	0
2649:	0	1	0	0	0	0	0	0
2657:	0	0	1	0	0	1	1	0
2665:	0	0	2	0	1	0	0	0
2673:	0	1	0	0	0	0	0	0
2681:	0	0	0	0	2	0	0	0
2689:	0	1	0	0	0	0	0	1
2697:	0	0	1	0	0	0	0	1
2705:	1	1	0	0	0	0	0	0
2713:	1	0	0	1	0	0	0	0
2721:	0	2	0	1	0	0	0	1
2729:	0	0	0	2	0	0	0	1
2737:	0	0	0	0	0	0	1	1
2745:	1	1	1	1	0	0	0	0
2753:	0	1	1	0	0	0	0	0
2761:	1	0	0	1	0	0	0	0
2769:	0	0	0	0	0	0	1	0
2777:	1	1	0	0	0	0	0	1
2785:	0	1	0	0	0	0	1	1
2793:	0	0	0	0	1	0	1	0
2801:	0	0	0	0	0	1	1	0
2809:	0	0	0	2	0	1	0	0
2817:	0	0	0	0	0	0	0	0
2825:	0	0	0	3	0	0	0	0
2833:	0	0	1	0	0	0	0	0
2841:	0	0	0	0	1	0	1	0
2849:	0	1	1	0	0	0	0	0
2857:	0	0	0	0	0	0	0	0
2865:	0	0	1	0	1	1	1	0
2873:	0	0	1	0	0	0	0	0
2881:	0	0	1	2	0	0	0	0
2889:	0	1	0	0	0	0	1	0
2897:	0	0	0	0	0	0	1	0
2905:	0	0	0	0	0	1	0	0
2913:	0	0	0	0	0	0	1	0
2921:	0	0	0	1	0	0	0	0
2929:	0	0	0	0	0	0	1	0
2937:	0	0	0	0	0	0	0	0
2945:	0	0	0	0	1	0	1	0
2953:	1	0	0	1	0	1	0	0

2961:	0	0	0	0	0	0	0	0

Sample Title: HTC-A08-BKGD01-2430-01

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

3393:	0	1	0	0	1	0	0	1

Sample Title: HTC-A08-BKGD01-2430-01

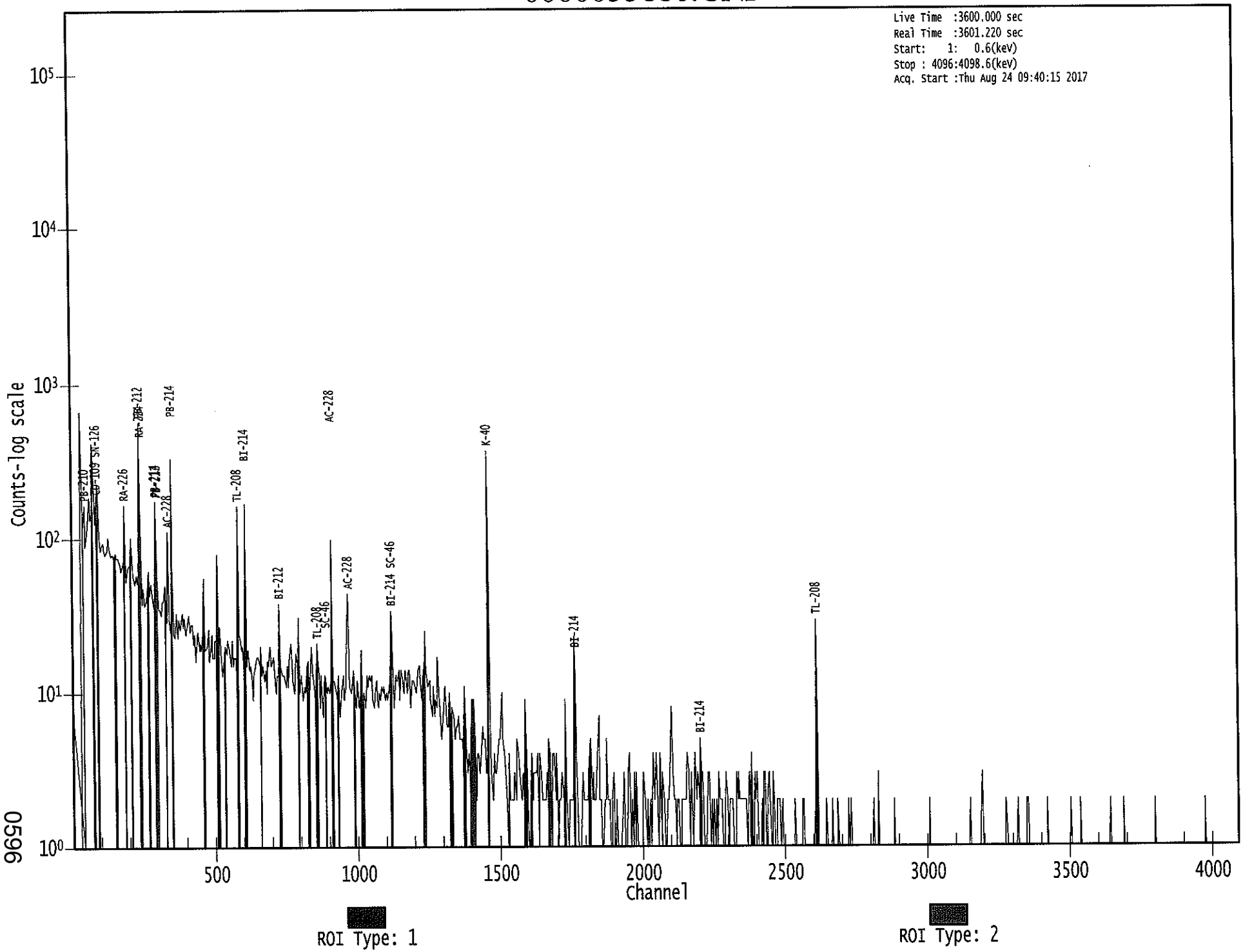
Channel								
3401:	0	0	0	0	0	0	0	0
3409:	0	0	0	0	0	0	0	0
3417:	0	0	0	0	2	0	0	0
3425:	0	0	0	0	0	0	0	1
3433:	0	0	0	0	0	0	1	0
3441:	0	0	0	0	0	0	0	0
3449:	0	1	0	0	0	0	0	1
3457:	1	0	0	1	1	0	0	0
3465:	0	0	0	1	0	0	0	0
3473:	0	1	0	0	0	0	0	0
3481:	0	0	0	1	0	1	0	0
3489:	0	0	0	0	0	0	0	0
3497:	0	0	0	0	0	0	0	2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

3825:	0	0	0	0	0	0	0	0

Sample Title: HTC-A08-BKGD01-2430-01

Channel								
3833:	0	1	0	0	0	0	0	0
3841:	0	0	0	0	1	1	0	0
3849:	0	0	0	0	0	1	0	0
3857:	0	0	0	0	0	0	0	1
3865:	0	1	0	0	0	0	1	0
3873:	0	0	0	0	0	0	1	0
3881:	0	0	0	1	0	0	0	0
3889:	0	0	1	0	0	0	0	0
3897:	0	0	0	0	0	0	0	0
3905:	1	0	0	0	0	0	0	0
3913:	0	0	0	0	0	0	0	0
3921:	0	0	0	0	0	0	0	0
3929:	0	0	0	0	0	0	1	0
3937:	0	0	0	0	0	1	0	0
3945:	0	0	0	0	0	0	0	0
3953:	0	0	0	0	1	0	0	0
3961:	1	0	1	1	1	0	0	0
3969:	0	0	0	0	0	0	2	1
3977:	0	0	0	0	0	0	0	0
3985:	0	0	0	0	0	1	0	0
3993:	1	0	0	0	0	0	1	0
4001:	0	0	1	0	0	1	0	1
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	1
4041:	0	0	0	0	0	0	0	0
4049:	0	0	0	0	0	0	1	0
4057:	0	0	0	0	0	0	0	0
4065:	0	1	0	0	0	0	1	0
4073:	0	1	0	0	0	0	0	0
4081:	0	1	0	0	0	0	1	0
4089:	0	0	0	0	0	1	0	0

0000055886.CNF



0596

Apex-Gamma

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Analysis Report for 1707091-10
HTC-A08-BKGD01-3036-01

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 1707091-10
Sample Description	: HTC-A08-BKGD01-3036-01
Sample Type	: SOIL
Sample Size	: 6.702E+02 grams
Facility	: Countroom
Sample Taken On	: 5/15/2017 12:55:50PM
Acquisition Started	: 8/24/2017 9:40:09AM
Procedure	: GAS-1602 pCi
Operator	: Administrator
Detector Name	: GE1
Geometry	: GAS-1602
Live Time	: 3600.0 seconds
Real Time	: 3601.6 seconds
Dead Time	: 0.04 %
Peak Locate Threshold	: 2.50
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 19 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 1/14/2017
Efficiency Calibration Used Done On	: 1/14/2017
Efficiency Calibration Description	:
Sample Number	: 55885

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

Analysis Report for 1707091-10

HTC-A08-BKGD01-3036-01

PEAK LOCATE REPORT

Peak Locate Performed on : 8/24/2017 10:40:26AM
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	46.90	0.0000	0.00
2	63.05	63.65	0.0000	0.00
3	75.80	76.39	0.0000	0.00
4	88.02	88.60	0.0000	0.00
5	92.73	93.31	0.0000	0.00
6	185.89	186.37	0.0000	0.00
7	202.85	203.32	0.0000	0.00
8	209.44	209.90	0.0000	0.00
9	238.62	239.04	0.0000	0.00
10	241.74	242.17	0.0000	0.00
11	270.03	270.43	0.0000	0.00
12	277.15	277.54	0.0000	0.00
13	295.19	295.56	0.0000	0.00
14	300.39	300.75	0.0000	0.00
15	328.45	328.79	0.0000	0.00
16	338.25	338.57	0.0000	0.00
17	351.92	352.23	0.0000	0.00
18	462.49	462.69	0.0000	0.00
19	511.21	511.36	0.0000	0.00
20	583.42	583.50	0.0000	0.00
21	609.54	609.59	0.0000	0.00
22	727.38	727.31	0.0000	0.00
23	767.53	767.42	0.0000	0.00
24	794.73	794.59	0.0000	0.00
25	860.58	860.38	0.0000	0.00
26	911.49	911.23	0.0000	0.00
27	935.09	934.82	0.0000	0.00
28	969.54	969.23	0.0000	0.00
29	1121.03	1120.57	0.0000	0.00
30	1239.24	1238.66	0.0000	0.00
31	1378.55	1377.83	0.0000	0.00
32	1426.09	1425.33	0.0000	0.00
33	1461.45	1460.66	0.0000	0.00
34	1466.11	1465.31	0.0000	0.00
35	1495.62	1494.79	0.0000	0.00
36	1534.69	1533.82	0.0000	0.00
37	1553.38	1552.50	0.0000	0.00
38	1581.10	1580.19	0.0000	0.00
39	1640.56	1639.59	0.0000	0.00
40	1680.18	1679.17	0.0000	0.00
41	1731.45	1730.39	0.0000	0.00
42	1765.22	1764.12	0.0000	0.00

Analysis Report for 1707091-10

HTC-A08-BKGD01-3036-01

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
43	1838.07	1836.91	0.0000	0.00
44	1847.60	1846.43	0.0000	0.00
45	1854.62	1853.44	0.0000	0.00
46	1975.20	1973.90	0.0000	0.00
47	2054.10	2052.73	0.0000	0.00
48	2104.85	2103.42	0.0000	0.00
49	2176.48	2174.99	0.0000	0.00
50	2188.70	2187.20	0.0000	0.00
51	2204.98	2203.47	0.0000	0.00
52	2339.21	2337.56	0.0000	0.00
53	2436.74	2435.00	0.0000	0.00
54	2575.07	2573.20	0.0000	0.00
55	2615.85	2613.94	0.0000	0.00
56	2662.80	2660.85	0.0000	0.00
57	3215.14	3212.67	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1707091-10

HTC-A08-BKGD01-3036-01

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 8/24/2017 10:40:26AM

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	44 -	49	46.90	9.80E+01	75.51	1.06E+03	1.45
	2	63.05	59 -	68	63.65	2.78E+02	144.17	2.82E+03	1.46
	3	75.80	71 -	80	76.39	1.38E+03	165.30	3.12E+03	3.98
m	4	88.02	83 -	97	88.60	3.11E+02	108.45	1.91E+03	2.44
m	5	92.73	83 -	97	93.31	4.50E+02	109.10	1.61E+03	2.45
	6	185.89	183 -	190	186.37	1.96E+02	87.20	1.14E+03	1.97
	7	202.85	201 -	206	203.32	8.59E+01	62.24	7.12E+02	3.62
	8	209.44	207 -	213	209.90	1.19E+02	72.37	8.62E+02	1.87
M	9	238.62	233 -	248	239.04	1.06E+03	81.43	4.98E+02	1.67
m	10	241.74	233 -	248	242.17	2.37E+02	81.31	4.44E+02	1.82
	11	270.03	266 -	274	270.43	7.95E+01	73.15	7.75E+02	2.05
	12	277.15	274 -	281	277.54	9.03E+01	61.97	5.79E+02	1.26
	13	295.19	292 -	299	295.56	2.03E+02	74.03	7.81E+02	1.77
	14	300.39	299 -	303	300.75	6.50E+01	42.64	3.32E+02	1.94
	15	328.45	323 -	334	328.79	1.08E+02	79.30	7.32E+02	1.84
	16	338.25	335 -	341	338.57	1.82E+02	56.71	4.53E+02	1.82
	17	351.92	347 -	356	352.23	5.20E+02	79.66	6.09E+02	1.94
	18	462.49	459 -	465	462.69	8.67E+01	41.15	2.45E+02	1.69
	19	511.21	507 -	517	511.36	1.82E+02	64.00	4.44E+02	2.36
	20	583.42	580 -	588	583.50	3.49E+02	57.13	2.86E+02	2.08
	21	609.54	605 -	615	609.59	3.67E+02	65.52	3.84E+02	2.10
	22	727.38	723 -	731	727.31	6.62E+01	40.14	2.08E+02	2.15
	23	767.53	763 -	770	767.42	3.88E+01	36.82	2.00E+02	1.37
	24	794.73	790 -	799	794.59	5.24E+01	36.50	1.61E+02	5.00
	25	860.58	856 -	865	860.38	7.05E+01	32.47	1.11E+02	2.79
	26	911.49	907 -	916	911.23	2.44E+02	47.41	1.86E+02	1.90
	27	935.09	930 -	940	934.82	5.53E+01	35.33	1.35E+02	2.15
	28	969.54	966 -	972	969.23	1.15E+02	43.02	2.41E+02	1.78
	29	1121.03	1116 -	1124	1120.57	7.68E+01	39.89	1.96E+02	2.12
	30	1239.24	1235 -	1243	1238.66	4.96E+01	40.05	2.07E+02	2.50
	31	1378.55	1372 -	1382	1377.83	2.55E+01	26.07	7.70E+01	2.24
	32	1426.09	1418 -	1433	1425.33	2.28E+01	25.53	5.64E+01	11.78
M	33	1461.45	1454 -	1475	1460.66	1.24E+03	71.26	2.22E+01	2.35
m	34	1466.11	1454 -	1475	1465.31	5.73E+01	69.91	1.63E+01	3.88
	35	1495.62	1490 -	1498	1494.79	1.81E+01	14.74	2.17E+01	2.15
	36	1534.69	1531 -	1536	1533.82	1.13E+01	9.33	7.40E+00	3.06
	37	1553.38	1549 -	1556	1552.50	1.08E+01	11.83	1.64E+01	1.22
	38	1581.10	1577 -	1582	1580.19	7.08E+00	9.38	1.18E+01	1.09
	39	1640.56	1637 -	1643	1639.59	1.23E+01	10.23	9.47E+00	3.26
	40	1680.18	1676 -	1682	1679.17	1.20E+01	6.93	0.00E+00	4.32

Analysis Report for 1707091-10

HTC-A08-BKGD01-3036-01

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
41	1731.45	1727 -	1733	1730.39	9.59E+00	11.19	1.28E+01	1.60
42	1765.22	1760 -	1768	1764.12	6.02E+01	20.43	2.75E+01	1.71
43	1838.07	1833 -	1839	1836.91	7.22E+00	6.95	3.56E+00	1.38
44	1847.60	1842 -	1850	1846.43	1.39E+01	9.18	4.25E+00	1.60
45	1854.62	1851 -	1855	1853.44	9.00E+00	6.00	0.00E+00	1.70
46	1975.20	1970 -	1977	1973.90	1.00E+01	6.32	0.00E+00	1.20
47	2054.10	2049 -	2056	2052.73	1.10E+01	6.63	0.00E+00	3.88
48	2104.85	2096 -	2108	2103.42	2.78E+01	19.68	3.24E+01	6.81
49	2176.48	2170 -	2180	2174.99	1.41E+01	9.91	5.82E+00	7.44
50	2188.70	2184 -	2189	2187.20	7.61E+00	6.71	2.78E+00	1.80
51	2204.98	2198 -	2207	2203.47	2.47E+01	14.25	1.46E+01	3.42
52	2339.21	2334 -	2339	2337.56	7.08E+00	9.38	1.18E+01	1.23
53	2436.74	2431 -	2439	2435.00	1.30E+01	7.21	0.00E+00	1.25
54	2575.07	2570 -	2575	2573.20	5.00E+00	4.47	0.00E+00	1.16
55	2615.85	2609 -	2621	2613.94	1.39E+02	26.81	1.80E+01	2.72
56	2662.80	2657 -	2663	2660.85	5.21E+00	6.34	3.57E+00	1.90
57	3215.14	3209 -	3215	3212.67	6.00E+00	4.90	0.00E+00	1.92

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

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 8/24/2017 10:40:26AM

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	44 -	49	9.80E+01	75.51	1.06E+03	5.99E+01
	2	63.05	59 -	68	2.78E+02	144.17	2.82E+03	1.15E+02
	3	75.80	71 -	80	1.38E+03	165.30	3.12E+03	1.21E+02
m	4	88.02	83 -	97	3.11E+02	108.45	1.91E+03	7.18E+01
m	5	92.73	83 -	97	4.50E+02	109.10	1.61E+03	6.60E+01
	6	185.89	183 -	190	1.96E+02	87.20	1.14E+03	6.79E+01
	7	202.85	201 -	206	8.59E+01	62.24	7.12E+02	4.88E+01
	8	209.44	207 -	213	1.19E+02	72.37	8.62E+02	5.67E+01
M	9	238.62	233 -	248	1.06E+03	81.43	4.98E+02	3.67E+01
m	10	241.74	233 -	248	2.37E+02	81.31	4.44E+02	3.47E+01
	11	270.03	266 -	274	7.95E+01	73.15	7.75E+02	5.83E+01

Analysis Report for 1707091-10

HTC-A08-BKGD01-3036-01

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	12	277.15	274 -	281	9.03E+01	61.97	5.79E+02	4.85E+01
	13	295.19	292 -	299	2.03E+02	74.03	7.81E+02	5.62E+01
	14	300.39	299 -	303	6.50E+01	42.64	3.32E+02	3.24E+01
	15	328.45	323 -	334	1.08E+02	79.30	7.32E+02	3.40E+01
	16	338.25	335 -	341	1.82E+02	56.71	4.53E+02	4.10E+01
	17	351.92	347 -	356	5.20E+02	79.66	6.09E+02	5.37E+01
	18	462.49	459 -	465	8.67E+01	41.15	2.45E+02	3.02E+01
	19	511.21	507 -	517	1.82E+02	64.00	4.44E+02	4.77E+01
	20	583.42	580 -	588	3.49E+02	57.13	2.86E+02	3.55E+01
	21	609.54	605 -	615	3.67E+02	65.52	3.84E+02	4.37E+01
	22	727.38	723 -	731	6.62E+01	40.14	2.08E+02	3.02E+01
	23	767.53	763 -	770	3.88E+01	36.82	2.00E+02	2.85E+01
	24	794.73	790 -	799	5.24E+01	36.50	1.61E+02	2.75E+01
	25	860.58	856 -	865	7.05E+01	32.47	1.11E+02	2.28E+01
	26	911.49	907 -	916	2.44E+02	47.41	1.86E+02	2.93E+01
	27	935.09	930 -	940	5.53E+01	35.33	1.35E+02	2.63E+01
	28	969.54	966 -	972	1.15E+02	43.02	2.41E+02	3.06E+01
	29	1121.03	1116 -	1124	7.68E+01	39.89	1.96E+02	2.95E+01
	30	1239.24	1235 -	1243	4.96E+01	40.05	2.07E+02	3.08E+01
	31	1378.55	1372 -	1382	2.55E+01	26.07	7.70E+01	1.98E+01
	32	1426.09	1418 -	1433	2.28E+01	25.53	5.64E+01	1.95E+01
M	33	1461.45	1454 -	1475	1.24E+03	71.26	2.22E+01	7.74E+00
m	34	1466.11	1454 -	1475	5.73E+01	69.91	1.63E+01	6.63E+00
	35	1495.62	1490 -	1498	1.81E+01	14.74	2.17E+01	9.89E+00
	36	1534.69	1531 -	1536	1.13E+01	9.33	7.40E+00	5.31E+00
	37	1553.38	1549 -	1556	1.08E+01	11.83	1.64E+01	8.09E+00
	38	1581.10	1577 -	1582	7.08E+00	9.38	1.18E+01	6.35E+00
	39	1640.56	1637 -	1643	1.23E+01	10.23	9.47E+00	6.13E+00
	40	1680.18	1676 -	1682	1.20E+01	6.93	0.00E+00	0.00E+00
	41	1731.45	1727 -	1733	9.59E+00	11.19	1.28E+01	7.66E+00
	42	1765.22	1760 -	1768	6.02E+01	20.43	2.75E+01	1.09E+01
	43	1838.07	1833 -	1839	7.22E+00	6.95	3.56E+00	3.62E+00
	44	1847.60	1842 -	1850	1.39E+01	9.18	4.25E+00	4.41E+00
	45	1854.62	1851 -	1855	9.00E+00	6.00	0.00E+00	0.00E+00
	46	1975.20	1970 -	1977	1.00E+01	6.32	0.00E+00	0.00E+00
	47	2054.10	2049 -	2056	1.10E+01	6.63	0.00E+00	0.00E+00
	48	2104.85	2096 -	2108	2.78E+01	19.68	3.24E+01	1.37E+01
	49	2176.48	2170 -	2180	1.41E+01	9.91	5.82E+00	5.32E+00
	50	2188.70	2184 -	2189	7.61E+00	6.71	2.78E+00	3.14E+00
	51	2204.98	2198 -	2207	2.47E+01	14.25	1.46E+01	8.39E+00
	52	2339.21	2334 -	2339	7.08E+00	9.38	1.18E+01	6.35E+00
	53	2436.74	2431 -	2439	1.30E+01	7.21	0.00E+00	0.00E+00
	54	2575.07	2570 -	2575	5.00E+00	4.47	0.00E+00	0.00E+00
	55	2615.85	2609 -	2621	1.39E+02	26.81	1.80E+01	1.05E+01
	56	2662.80	2657 -	2663	5.21E+00	6.34	3.57E+00	3.62E+00
	57	3215.14	3209 -	3215	6.00E+00	4.90	0.00E+00	0.00E+00

Analysis Report for 1707091-10

HTC-A08-BKGD01-3036-01

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 : 8/24/2017 10:40:26AM

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	44 -	49	46.90	9.80E+01	75.51	1.06E+03	PB-210
	2	63.05	59 -	68	63.65	2.78E+02	144.17	2.82E+03	TH-230
									TH-234
	3	75.80	71 -	80	76.39	1.38E+03	165.30	3.12E+03	.....
m	4	88.02	83 -	97	88.60	3.11E+02	108.45	1.91E+03	CD-109
									LU-176
									SN-126
m	5	92.73	83 -	97	93.31	4.50E+02	109.10	1.61E+03	GA-67
	6	185.89	183 -	190	186.37	1.96E+02	87.20	1.14E+03	RA-226
	7	202.85	201 -	206	203.32	8.59E+01	62.24	7.12E+02	.....
	8	209.44	207 -	213	209.90	1.19E+02	72.37	8.62E+02	CM-243
									GA-67
M	9	238.62	233 -	248	239.04	1.06E+03	81.43	4.98E+02	PB-212
m	10	241.74	233 -	248	242.17	2.37E+02	81.31	4.44E+02	RA-224
	11	270.03	266 -	274	270.43	7.95E+01	73.15	7.75E+02	.....
	12	277.15	274 -	281	277.54	9.03E+01	61.97	5.79E+02	CM-243
									NP-239
	13	295.19	292 -	299	295.56	2.03E+02	74.03	7.81E+02	PB-214
	14	300.39	299 -	303	300.75	6.50E+01	42.64	3.32E+02	GA-67
									PB-212
									BI-210M
	15	328.45	323 -	334	328.79	1.08E+02	79.30	7.32E+02	LA-140
	16	338.25	335 -	341	338.57	1.82E+02	56.71	4.53E+02	AC-228
	17	351.92	347 -	356	352.23	5.20E+02	79.66	6.09E+02	PB-214
	18	462.49	459 -	465	462.69	8.67E+01	41.15	2.45E+02	SB-125
	19	511.21	507 -	517	511.36	1.82E+02	64.00	4.44E+02	.....
	20	583.42	580 -	588	583.50	3.49E+02	57.13	2.86E+02	TL-208
	21	609.54	605 -	615	609.59	3.67E+02	65.52	3.84E+02	BI-214
	22	727.38	723 -	731	727.31	6.62E+01	40.14	2.08E+02	BI-212
	23	767.53	763 -	770	767.42	3.88E+01	36.82	2.00E+02	.....

Analysis Report for 1707091-10

HTC-A08-BKGD01-3036-01

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	24	794.73	790 -	799	794.59	5.24E+01	36.50	1.61E+02	.....
	25	860.58	856 -	865	860.38	7.05E+01	32.47	1.11E+02	TL-208
	26	911.49	907 -	916	911.23	2.44E+02	47.41	1.86E+02	TL-204 AC-228
	27	935.09	930 -	940	934.82	5.53E+01	35.33	1.35E+02	.....
	28	969.54	966 -	972	969.23	1.15E+02	43.02	2.41E+02	AC-228
	29	1121.03	1116 -	1124	1120.57	7.68E+01	39.89	1.96E+02	TA-182 SC-46 BI-214
	30	1239.24	1235 -	1243	1238.66	4.96E+01	40.05	2.07E+02	CO-56
	31	1378.55	1372 -	1382	1377.83	2.55E+01	26.07	7.70E+01	.....
	32	1426.09	1418 -	1433	1425.33	2.28E+01	25.53	5.64E+01	.....
M	33	1461.45	1454 -	1475	1460.66	1.24E+03	71.26	2.22E+01	K-40
m	34	1466.11	1454 -	1475	1465.31	5.73E+01	69.91	1.63E+01	.....
	35	1495.62	1490 -	1498	1494.79	1.81E+01	14.74	2.17E+01	.....
	36	1534.69	1531 -	1536	1533.82	1.13E+01	9.33	7.40E+00	.....
	37	1553.38	1549 -	1556	1552.50	1.08E+01	11.83	1.64E+01	.....
	38	1581.10	1577 -	1582	1580.19	7.08E+00	9.38	1.18E+01	.....
	39	1640.56	1637 -	1643	1639.59	1.23E+01	10.23	9.47E+00	.....
	40	1680.18	1676 -	1682	1679.17	1.20E+01	6.93	0.00E+00	.....
	41	1731.45	1727 -	1733	1730.39	9.59E+00	11.19	1.28E+01	.....
	42	1765.22	1760 -	1768	1764.12	6.02E+01	20.43	2.75E+01	BI-214
	43	1838.07	1833 -	1839	1836.91	7.22E+00	6.95	3.56E+00	.....
	44	1847.60	1842 -	1850	1846.43	1.39E+01	9.18	4.25E+00	.....
	45	1854.62	1851 -	1855	1853.44	9.00E+00	6.00	0.00E+00	.....
	46	1975.20	1970 -	1977	1973.90	1.00E+01	6.32	0.00E+00	.....
	47	2054.10	2049 -	2056	2052.73	1.10E+01	6.63	0.00E+00	.....
	48	2104.85	2096 -	2108	2103.42	2.78E+01	19.68	3.24E+01	.....
	49	2176.48	2170 -	2180	2174.99	1.41E+01	9.91	5.82E+00	.....
	50	2188.70	2184 -	2189	2187.20	7.61E+00	6.71	2.78E+00	.....
	51	2204.98	2198 -	2207	2203.47	2.47E+01	14.25	1.46E+01	BI-214
	52	2339.21	2334 -	2339	2337.56	7.08E+00	9.38	1.18E+01	.....
	53	2436.74	2431 -	2439	2435.00	1.30E+01	7.21	0.00E+00	.....
	54	2575.07	2570 -	2575	2573.20	5.00E+00	4.47	0.00E+00	.....
	55	2615.85	2609 -	2621	2613.94	1.39E+02	26.81	1.80E+01	.....
	56	2662.80	2657 -	2663	2660.85	5.21E+00	6.34	3.57E+00	.....
	57	3215.14	3209 -	3215	3212.67	6.00E+00	4.90	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 : 8/24/2017 10:40:26AM

Analysis Report for 1707091-10

HTC-A08-BKGD01-3036-01

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	46.28	9.80E+01	75.51	2.46E-02	2.22E-03
	2	63.05	2.78E+02	144.17	2.70E-02	2.25E-03
	3	75.80	1.38E+03	165.30	2.75E-02	2.39E-03
m	4	88.02	3.11E+02	108.45	2.74E-02	2.52E-03
m	5	92.73	4.50E+02	109.10	2.73E-02	2.44E-03
	6	185.89	1.96E+02	87.20	2.17E-02	1.68E-03
	7	202.85	8.59E+01	62.24	2.07E-02	1.63E-03
	8	209.44	1.19E+02	72.37	2.04E-02	1.61E-03
M	9	238.62	1.06E+03	81.43	1.89E-02	1.53E-03
m	10	241.74	2.37E+02	81.31	1.87E-02	1.52E-03
	11	270.03	7.95E+01	73.15	1.74E-02	1.43E-03
	12	277.15	9.03E+01	61.97	1.71E-02	1.41E-03
	13	295.19	2.03E+02	74.03	1.64E-02	1.37E-03
	14	300.39	6.50E+01	42.64	1.62E-02	1.36E-03
	15	328.45	1.08E+02	79.30	1.53E-02	1.29E-03
	16	338.25	1.82E+02	56.71	1.50E-02	1.27E-03
	17	351.92	5.20E+02	79.66	1.45E-02	1.24E-03
	18	462.49	8.67E+01	41.15	1.19E-02	1.10E-03
	19	511.21	1.82E+02	64.00	1.10E-02	1.07E-03
	20	583.42	3.49E+02	57.13	9.96E-03	1.02E-03
	21	609.54	3.67E+02	65.52	9.63E-03	1.01E-03
	22	727.38	6.62E+01	40.14	8.41E-03	8.68E-04
	23	767.53	3.88E+01	36.82	8.07E-03	8.04E-04
	24	794.73	5.24E+01	36.50	7.86E-03	7.61E-04
	25	860.58	7.05E+01	32.47	7.40E-03	6.56E-04
	26	911.49	2.44E+02	47.41	7.08E-03	5.91E-04
	27	935.09	5.53E+01	35.33	6.95E-03	5.82E-04
	28	969.54	1.15E+02	43.02	6.76E-03	5.69E-04
	29	1121.03	7.68E+01	39.89	6.07E-03	5.11E-04
	30	1239.24	4.96E+01	40.05	5.64E-03	4.76E-04
	31	1378.55	2.55E+01	26.07	5.22E-03	4.44E-04
	32	1426.09	2.28E+01	25.53	5.09E-03	4.33E-04
M	33	1461.45	1.24E+03	71.26	5.00E-03	4.25E-04
m	34	1466.11	5.73E+01	69.91	4.99E-03	4.24E-04
	35	1495.62	1.81E+01	14.74	4.92E-03	4.17E-04
	36	1534.69	1.13E+01	9.33	4.83E-03	4.08E-04
	37	1553.38	1.08E+01	11.83	4.79E-03	4.03E-04
	38	1581.10	7.08E+00	9.38	4.73E-03	3.97E-04
	39	1640.56	1.23E+01	10.23	4.61E-03	3.83E-04
	40	1680.18	1.20E+01	6.93	4.53E-03	3.74E-04
	41	1731.45	9.59E+00	11.19	4.43E-03	3.62E-04
	42	1765.22	6.02E+01	20.43	4.37E-03	3.54E-04
	43	1838.07	7.22E+00	6.95	4.25E-03	3.38E-04
	44	1847.60	1.39E+01	9.18	4.23E-03	3.38E-04
	45	1854.62	9.00E+00	6.00	4.22E-03	3.38E-04
	46	1975.20	1.00E+01	6.32	4.04E-03	3.38E-04
	47	2054.10	1.10E+01	6.63	3.93E-03	3.38E-04
	48	2104.85	2.78E+01	19.68	3.86E-03	3.38E-04
	49	2176.48	1.41E+01	9.91	3.77E-03	3.38E-04
	50	2188.70	7.61E+00	6.71	3.76E-03	3.38E-04

Analysis Report for 1707091-10

HTC-A08-BKGD01-3036-01

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
51	2204.98	2.47E+01	14.25	3.74E-03	3.38E-04
52	2339.21	7.08E+00	9.38	3.58E-03	3.38E-04
53	2436.74	1.30E+01	7.21	3.48E-03	3.38E-04
54	2575.07	5.00E+00	4.47	3.34E-03	3.38E-04
55	2615.85	1.39E+02	26.81	3.30E-03	3.38E-04
56	2662.80	5.21E+00	6.34	3.26E-03	3.38E-04
57	3215.14	6.00E+00	4.90	2.84E-03	3.38E-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 : 8/24/2017 10:40:26AM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000055573.CNF

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	1	46.28	9.80E+01	75.51	3.67E+01	8.40E+00	6.13E+01	7.60E+01
	2	63.05	2.78E+02	144.17	8.94E+01	1.41E+01	1.89E+02	1.45E+02
	3	75.80	1.38E+03	165.30			1.38E+03	1.65E+02
m	4	88.02	3.11E+02	108.45			3.11E+02	1.08E+02
m	5	92.73	4.50E+02	109.10	1.38E+02	1.72E+01	3.12E+02	1.10E+02
	6	185.89	1.96E+02	87.20	5.22E+01	7.59E+00	1.44E+02	8.75E+01
	7	202.85	8.59E+01	62.24			8.59E+01	6.22E+01
	8	209.44	1.19E+02	72.37			1.19E+02	7.24E+01
M	9	238.62	1.06E+03	81.43	2.13E+01	6.33E+00	1.04E+03	8.17E+01
m	10	241.74	2.37E+02	81.31			2.37E+02	8.13E+01
	11	270.03	7.95E+01	73.15	1.23E+00	4.98E+00	7.83E+01	7.33E+01
	12	277.15	9.03E+01	61.97			9.03E+01	6.20E+01
	13	295.19	2.03E+02	74.03			2.03E+02	7.40E+01
	14	300.39	6.50E+01	42.64			6.50E+01	4.26E+01
	15	328.45	1.08E+02	79.30			1.08E+02	7.93E+01
	16	338.25	1.82E+02	56.71			1.82E+02	5.67E+01
	17	351.92	5.20E+02	79.66	5.79E+00	4.49E+00	5.14E+02	7.98E+01
	18	462.49	8.67E+01	41.15			8.67E+01	4.12E+01
	19	511.21	1.82E+02	64.00	7.28E+01	5.30E+00	1.09E+02	6.42E+01
	20	583.42	3.49E+02	57.13	2.72E+00	3.05E+00	3.46E+02	5.72E+01
	21	609.54	3.67E+02	65.52	6.35E+00	4.02E+00	3.61E+02	6.56E+01
	22	727.38	6.62E+01	40.14			6.62E+01	4.01E+01
	23	767.53	3.88E+01	36.82			3.88E+01	3.68E+01

Analysis Report for 1707091-10

HTC-A08-BKGD01-3036-01

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	24	794.73	5.24E+01	36.50			5.24E+01	3.65E+01
	25	860.58	7.05E+01	32.47			7.05E+01	3.25E+01
	26	911.49	2.44E+02	47.41	5.31E+00	3.00E+00	2.39E+02	4.75E+01
	27	935.09	5.53E+01	35.33			5.53E+01	3.53E+01
	28	969.54	1.15E+02	43.02			1.15E+02	4.30E+01
	29	1121.03	7.68E+01	39.89			7.68E+01	3.99E+01
	30	1239.24	4.96E+01	40.05			4.96E+01	4.01E+01
	31	1378.55	2.55E+01	26.07			2.55E+01	2.61E+01
	32	1426.09	2.28E+01	25.53			2.28E+01	2.55E+01
M	33	1461.45	1.24E+03	71.26	8.09E+00	2.23E+00	1.23E+03	7.13E+01
m	34	1466.11	5.73E+01	69.91			5.73E+01	6.99E+01
	35	1495.62	1.81E+01	14.74			1.81E+01	1.47E+01
	36	1534.69	1.13E+01	9.33			1.13E+01	9.33E+00
	37	1553.38	1.08E+01	11.83			1.08E+01	1.18E+01
	38	1581.10	7.08E+00	9.38			7.08E+00	9.38E+00
	39	1640.56	1.23E+01	10.23			1.23E+01	1.02E+01
	40	1680.18	1.20E+01	6.93			1.20E+01	6.93E+00
	41	1731.45	9.59E+00	11.19			9.59E+00	1.12E+01
	42	1765.22	6.02E+01	20.43			6.02E+01	2.04E+01
	43	1838.07	7.22E+00	6.95			7.22E+00	6.95E+00
	44	1847.60	1.39E+01	9.18	1.22E+00	1.50E+00	1.27E+01	9.30E+00
	45	1854.62	9.00E+00	6.00			9.00E+00	6.00E+00
	46	1975.20	1.00E+01	6.32			1.00E+01	6.32E+00
	47	2054.10	1.10E+01	6.63			1.10E+01	6.63E+00
	48	2104.85	2.78E+01	19.68			2.78E+01	1.97E+01
	49	2176.48	1.41E+01	9.91			1.41E+01	9.91E+00
	50	2188.70	7.61E+00	6.71			7.61E+00	6.71E+00
	51	2204.98	2.47E+01	14.25			2.47E+01	1.42E+01
	52	2339.21	7.08E+00	9.38			7.08E+00	9.38E+00
	53	2436.74	1.30E+01	7.21			1.30E+01	7.21E+00
	54	2575.07	5.00E+00	4.47			5.00E+00	4.47E+00
	55	2615.85	1.39E+02	26.81	5.63E+00	1.38E+00	1.33E+02	2.68E+01
	56	2662.80	5.21E+00	6.34			5.21E+00	6.34E+00
	57	3215.14	6.00E+00	4.90			6.00E+00	4.90E+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 1707091-10

HTC-A08-BKGD01-3036-01

AREA CORRECTION REPORT
REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 8/24/2017 10:40:26AM

Ref. Peak Energy : 0.00 Reference Date :
Peak Ratio : 0.00 Uncertainty : 0.00
Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000055573.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	9.80E+01	75.51	3.67E+01	8.40E+00	6.13E+01	7.60E+01
	2	63.05	2.78E+02	144.17	8.94E+01	1.41E+01	1.89E+02	1.45E+02
	3	75.80	1.38E+03	165.30			1.38E+03	1.65E+02
m	4	88.02	3.11E+02	108.45			3.11E+02	1.08E+02
m	5	92.73	4.50E+02	109.10	1.38E+02	1.72E+01	3.12E+02	1.10E+02
	6	185.89	1.96E+02	87.20	5.22E+01	7.59E+00	1.44E+02	8.75E+01
	7	202.85	8.59E+01	62.24			8.59E+01	6.22E+01
	8	209.44	1.19E+02	72.37			1.19E+02	7.24E+01
M	9	238.62	1.06E+03	81.43	2.13E+01	6.33E+00	1.04E+03	8.17E+01
m	10	241.74	2.37E+02	81.31			2.37E+02	8.13E+01
	11	270.03	7.95E+01	73.15	1.23E+00	4.98E+00	7.83E+01	7.33E+01
	12	277.15	9.03E+01	61.97			9.03E+01	6.20E+01
	13	295.19	2.03E+02	74.03			2.03E+02	7.40E+01
	14	300.39	6.50E+01	42.64			6.50E+01	4.26E+01
	15	328.45	1.08E+02	79.30			1.08E+02	7.93E+01
	16	338.25	1.82E+02	56.71			1.82E+02	5.67E+01
	17	351.92	5.20E+02	79.66	5.79E+00	4.49E+00	5.14E+02	7.98E+01
	18	462.49	8.67E+01	41.15			8.67E+01	4.12E+01
	19	511.21	1.82E+02	64.00	7.28E+01	5.30E+00	1.09E+02	6.42E+01
	20	583.42	3.49E+02	57.13	2.72E+00	3.05E+00	3.46E+02	5.72E+01
	21	609.54	3.67E+02	65.52	6.35E+00	4.02E+00	3.61E+02	6.56E+01
	22	727.38	6.62E+01	40.14			6.62E+01	4.01E+01
	23	767.53	3.88E+01	36.82			3.88E+01	3.68E+01
	24	794.73	5.24E+01	36.50			5.24E+01	3.65E+01
	25	860.58	7.05E+01	32.47			7.05E+01	3.25E+01
	26	911.49	2.44E+02	47.41	5.31E+00	3.00E+00	2.39E+02	4.75E+01
	27	935.09	5.53E+01	35.33			5.53E+01	3.53E+01
	28	969.54	1.15E+02	43.02			1.15E+02	4.30E+01
	29	1121.03	7.68E+01	39.89			7.68E+01	3.99E+01
	30	1239.24	4.96E+01	40.05			4.96E+01	4.01E+01
	31	1378.55	2.55E+01	26.07			2.55E+01	2.61E+01
	32	1426.09	2.28E+01	25.53			2.28E+01	2.55E+01
M	33	1461.45	1.24E+03	71.26	8.09E+00	2.23E+00	1.23E+03	7.13E+01
m	34	1466.11	5.73E+01	69.91			5.73E+01	6.99E+01
	35	1495.62	1.81E+01	14.74			1.81E+01	1.47E+01
	36	1534.69	1.13E+01	9.33			1.13E+01	9.33E+00
	37	1553.38	1.08E+01	11.83			1.08E+01	1.18E+01
	38	1581.10	7.08E+00	9.38			7.08E+00	9.38E+00
	39	1640.56	1.23E+01	10.23			1.23E+01	1.02E+01
	40	1680.18	1.20E+01	6.93			1.20E+01	6.93E+00
	41	1731.45	9.59E+00	11.19			9.59E+00	1.12E+01

Analysis Report for 1707091-10

HTC-A08-BKGD01-3036-01

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
42	1765.22	6.02E+01	20.43			6.02E+01	2.04E+01
43	1838.07	7.22E+00	6.95			7.22E+00	6.95E+00
44	1847.60	1.39E+01	9.18	1.22E+00	1.50E+00	1.27E+01	9.30E+00
45	1854.62	9.00E+00	6.00			9.00E+00	6.00E+00
46	1975.20	1.00E+01	6.32			1.00E+01	6.32E+00
47	2054.10	1.10E+01	6.63			1.10E+01	6.63E+00
48	2104.85	2.78E+01	19.68			2.78E+01	1.97E+01
49	2176.48	1.41E+01	9.91			1.41E+01	9.91E+00
50	2188.70	7.61E+00	6.71			7.61E+00	6.71E+00
51	2204.98	2.47E+01	14.25			2.47E+01	1.42E+01
52	2339.21	7.08E+00	9.38			7.08E+00	9.38E+00
53	2436.74	1.30E+01	7.21			1.30E+01	7.21E+00
54	2575.07	5.00E+00	4.47			5.00E+00	4.47E+00
55	2615.85	1.39E+02	26.81	5.63E+00	1.38E+00	1.33E+02	2.68E+01
56	2662.80	5.21E+00	6.34			5.21E+00	6.34E+00
57	3215.14	6.00E+00	4.90			6.00E+00	4.90E+00

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

NUCLIDE IDENTIFICATION REPORT

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

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.936	1460.81	*	10.67	2.57E+01	2.70E+00
CD-109	1.000	88.03	*	3.72	3.97E+00	1.45E+00
SN-126	0.968	87.57	*	37.00	3.44E-01	1.24E-01
TL-208	0.391	583.14	*	30.22	1.29E+00	2.51E-01
		860.37	*	4.48	2.38E+00	1.12E+00
		2614.66		35.85		
PB-210	0.992	46.50	*	4.25	6.62E-01	8.23E-01
BI-212	0.758	727.17	*	11.80	7.47E-01	4.60E-01
		1620.62		2.75		
PB-212	0.999	238.63	*	44.60	1.38E+00	1.56E-01
		300.09	*	3.41	1.31E+00	8.69E-01
BI-214	0.958	609.31	*	46.30	9.06E-01	1.90E-01
		1120.29	*	15.10	9.38E-01	4.94E-01
		1764.49	*	15.80	9.77E-01	3.41E-01
		2204.22	*	4.98	1.49E+00	8.69E-01

Analysis Report for 1707091-10

HTC-A08-BKGD01-3036-01

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
PB-214	1.000	295.21	*	19.19	7.22E-01	2.70E-01
		351.92	*	37.19	1.06E+00	1.88E-01
RA-224	0.911	240.98	*	3.95	3.59E+00	1.27E+00
RA-226	0.983	186.21	*	3.28	2.26E+00	4.36E+00
AC-228	0.978	338.32	*	11.40	1.20E+00	3.86E-01
		911.07	*	27.70	1.36E+00	2.94E-01
		969.11	*	16.60	1.15E+00	4.40E-01
TH-234	0.991	63.29	*	3.80	2.06E+00	1.59E+00
CM-243	0.357	209.75	*	3.29	2.00E+00	1.23E+00
		228.14		10.60		
		277.60	*	14.00	4.24E-01	2.93E-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 : 8/24/2017 10:40:26AM
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	75.80	3.83081E-01	5.99		
m	5	92.73	8.66392E-02	17.70	Sum	
	7	202.85	2.38600E-02	36.23		
	11	270.03	2.17418E-02	46.84		
	15	328.45	3.00000E-02	36.71	Tol.	LA-140
	18	462.49	2.40936E-02	23.72	Sum	
	19	511.21	3.03135E-02	29.43		
	23	767.53	1.07674E-02	47.50		
	24	794.73	1.45426E-02	34.86	Sum	
	27	935.09	1.53692E-02	31.93	Sum	
	30	1239.24	1.37745E-02	40.39		
	31	1378.55	7.08333E-03	51.11		
	32	1426.09	6.33987E-03	55.94		
m	34	1466.11	1.59050E-02	61.05		
	35	1495.62	5.03831E-03	40.63	Sum	
	36	1534.69	3.13889E-03	41.27		
	37	1553.38	2.99708E-03	54.83	Sum	
	38	1581.10	1.96581E-03	66.28		

Analysis Report for 1707091-10

HTC-A08-BKGD01-3036-01

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
39	1640.56	3.40686E-03	41.72		
40	1680.18	3.33333E-03	28.87		
41	1731.45	2.66493E-03	58.33	Sum	
43	1838.07	2.00617E-03	48.09		
44	1847.60	3.51406E-03	36.76	Sum	
45	1854.62	2.50000E-03	33.33		
46	1975.20	2.77778E-03	31.62	Sum	
47	2054.10	3.05556E-03	30.15		
48	2104.85	7.72727E-03	35.37		
49	2176.48	3.91340E-03	35.18		
50	2188.70	2.11420E-03	44.07	Sum	
52	2339.21	1.96581E-03	66.28		
53	2436.74	3.61111E-03	27.74		
54	2575.07	1.38889E-03	44.72		
55	2615.85	3.70524E-02	10.06		
56	2662.80	1.44841E-03	60.84		
57	3215.14	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	0.93	1460.81	*	10.67	2.57E+01	2.70E+00
CD-109	1.00	88.03	*	3.72	3.97E+00	1.45E+00
SN-126	0.96	87.57	*	37.00	3.44E-01	1.24E-01
TL-208	0.39	583.14	*	30.22	1.29E+00	2.51E-01
		860.37	*	4.48	2.38E+00	1.12E+00
		2614.66		35.85		
PB-210	0.99	46.50	*	4.25	6.62E-01	8.23E-01
BI-212	0.75	727.17	*	11.80	7.47E-01	4.60E-01
		1620.62		2.75		
PB-212	0.99	238.63	*	44.60	1.38E+00	1.56E-01
		300.09	*	3.41	1.31E+00	8.69E-01

Analysis Report for 1707091-10

HTC-A08-BKGD01-3036-01

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
BI-214	0.95	609.31	*	46.30	9.06E-01	1.90E-01
		1120.29	*	15.10	9.38E-01	4.94E-01
		1764.49	*	15.80	9.77E-01	3.41E-01
		2204.22	*	4.98	1.49E+00	8.69E-01
PB-214	1.00	295.21	*	19.19	7.22E-01	2.70E-01
		351.92	*	37.19	1.06E+00	1.88E-01
RA-224	0.91	240.98	*	3.95	3.59E+00	1.27E+00
RA-226	0.98	186.21	*	3.28	2.26E+00	4.36E+00
AC-228	0.97	338.32	*	11.40	1.20E+00	3.86E-01
		911.07	*	27.70	1.36E+00	2.94E-01
		969.11	*	16.60	1.15E+00	4.40E-01
TH-234	0.99	63.29	*	3.80	2.06E+00	1.59E+00
CM-243	0.35	209.75	*	3.29	2.00E+00	1.23E+00
		228.14		10.60		
		277.60	*	14.00	4.24E-01	2.93E-01

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

INTERFERENCE CORRECTED REPORT

	Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
	K-40	0.936	2.57E+01	2.70E+00	
?	CD-109	1.000	3.97E+00	1.45E+00	
?	SN-126	0.968	3.44E-01	1.24E-01	
	TL-208	0.391	1.34E+00	2.45E-01	
	PB-210	0.992	6.62E-01	8.23E-01	
	BI-212	0.758	7.47E-01	4.60E-01	
	PB-212	0.999	1.38E+00	1.53E-01	
	BI-214	0.958	9.42E-01	1.55E-01	
	PB-214	1.000	9.52E-01	1.55E-01	
	RA-224	0.911	3.59E+00	1.27E+00	
	RA-226	0.983	2.26E+00	4.36E+00	
	AC-228	0.978	1.27E+00	2.07E-01	

Analysis Report for 1707091-10

HTC-A08-BKGD01-3036-01

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
TH-234	0.991	2.06E+00	1.59E+00	
CM-243	0.357	5.09E-01	2.85E-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 1707091-10

HTC-A08-BKGD01-3036-01

UNIDENTIFIED PEAKS

Peak Locate Performed on : 8/24/2017 10:40:26AM
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	75.80	3.83081E-01	5.99		
m	5	92.73	8.66392E-02	17.70	Sum	
	7	202.85	2.38600E-02	36.23		
	11	270.03	2.17418E-02	46.84		
	15	328.45	3.00000E-02	36.71	Tol.	LA-140
	18	462.49	2.40936E-02	23.72	Sum	
	19	511.21	3.03135E-02	29.43		
	23	767.53	1.07674E-02	47.50		
	24	794.73	1.45426E-02	34.86	Sum	
	27	935.09	1.53692E-02	31.93	Sum	
	30	1239.24	1.37745E-02	40.39		
	31	1378.55	7.08333E-03	51.11		
	32	1426.09	6.33987E-03	55.94		
m	34	1466.11	1.59050E-02	61.05		
	35	1495.62	5.03831E-03	40.63	Sum	
	36	1534.69	3.13889E-03	41.27		
	37	1553.38	2.99708E-03	54.83	Sum	
	38	1581.10	1.96581E-03	66.28		
	39	1640.56	3.40686E-03	41.72		
	40	1680.18	3.33333E-03	28.87		
	41	1731.45	2.66493E-03	58.33	Sum	
	43	1838.07	2.00617E-03	48.09		
	44	1847.60	3.51406E-03	36.76	Sum	
	45	1854.62	2.50000E-03	33.33		
	46	1975.20	2.77778E-03	31.62	Sum	
	47	2054.10	3.05556E-03	30.15		
	48	2104.85	7.72727E-03	35.37		
	49	2176.48	3.91340E-03	35.18		
	50	2188.70	2.11420E-03	44.07	Sum	
	52	2339.21	1.96581E-03	66.28		
	53	2436.74	3.61111E-03	27.74		
	54	2575.07	1.38889E-03	44.72		
	55	2615.85	3.70524E-02	10.06		
	56	2662.80	1.44841E-03	60.84		
	57	3215.14	1.66667E-03	40.82		

Analysis Report for 1707091-10

HTC-A08-BKGD01-3036-01

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	2.18E-01	2.02E+00	2.02E+00
+		NA-22	1274.54		99.94	-3.73E-02	7.25E-02	7.25E-02
+	@	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	-1.47E-03	4.14E-02	4.14E-02
+		K-40	1460.81	*	10.67	2.57E+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	-2.96E-02	5.72E-02	5.72E-02
			78.34		96.00	1.90E-01		7.93E-02
+		SC-46	889.25		99.98	-6.58E-02	1.46E-01	1.46E-01
			1120.51		99.99	3.42E-01		2.59E-01
+		V-48	983.52		99.98	2.05E+00	5.48E+00	5.48E+00
			1312.10		97.50	-3.64E-01		5.86E+00
+		CR-51	320.08		9.83	-9.42E-03	6.69E+00	6.69E+00
+		MN-54	834.83		99.97	-3.36E-03	8.01E-02	8.01E-02
+		CO-56	846.75		99.96	-5.48E-02	1.31E-01	1.60E-01
			1037.75		14.03	-3.58E-01		1.13E+00
			1238.25		67.00	2.37E-01		4.06E-01
			1771.40		15.51	6.70E-02		6.04E-01
			2598.48		16.90	0.00E+00		1.31E-01
+		CO-57	122.06		85.51	-2.13E-02	6.52E-02	6.52E-02
			136.48		10.60	1.05E-01		5.76E-01
+		CO-58	810.76		99.40	4.05E-02	1.70E-01	1.70E-01
+		FE-59	1099.22		56.50	5.41E-01	6.76E-01	6.76E-01
			1291.56		43.20	3.82E-01		8.52E-01
+		CO-60	1173.22		100.00	-5.67E-02	6.82E-02	8.56E-02
			1332.49		100.00	4.03E-02		6.82E-02
+		ZN-65	1115.52		50.75	1.54E-02	2.02E-01	2.02E-01
+		GA-67	93.31		35.70	7.38E+08	3.52E+08	3.52E+08
			208.95		2.24	5.34E+09		5.02E+09
			300.22		16.00	-1.45E+09		7.48E+08
+		SE-75	121.11		16.70	-4.38E-01	1.43E-01	4.44E-01

Analysis Report for 1707091-10

HTC-A08-BKGD01-3036-01

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	SE-75	136.00		59.20	2.60E-02	1.43E-01	1.43E-01
		264.65		59.80	-2.56E-02		1.62E-01
		279.53		25.20	-1.63E-02		3.94E-01
		400.65		11.40	2.02E-01		8.72E-01
+	RB-82	776.52		13.00	1.49E+00	7.83E+00	7.83E+00
+	RB-83	520.41		46.00	7.98E-02	2.91E-01	2.91E-01
		529.64		30.30	-3.18E-02		3.76E-01
		552.65		16.40	-5.05E-02		7.98E-01
+	KR-85	513.99		0.43	2.05E+01	1.92E+01	1.92E+01
+	SR-85	513.99		99.27	2.58E-01	2.42E-01	2.42E-01
+	Y-88	898.02		93.40	-2.31E-02	8.51E-02	1.20E-01
		1836.01		99.38	2.27E-02		8.51E-02
+	MO-93	263.06		56.72	2.67E-02	4.80E-02	9.87E-02
		684.67		99.68	-2.14E-02		5.85E-02
		1477.11		99.08	2.07E-02		4.80E-02
+	NB-93M	16.57		9.43	2.24E-02	5.16E-01	5.16E-01
+	NB-94	702.63		100.00	2.08E-02	6.01E-02	7.10E-02
		871.10		100.00	9.81E-03		6.01E-02
+	NB-95	765.79		99.81	3.30E-01	5.58E-01	5.58E-01
+	NB-95M	235.69		25.00	-4.77E+08	6.30E+07	6.30E+07
+	ZR-95	724.18		43.70	4.13E-02	3.73E-01	4.60E-01
		756.72		55.30	1.85E-01		3.73E-01
+	MO-99	181.06		6.20	1.45E+10	5.44E+10	8.32E+10
		739.58		12.80	-2.82E+09		5.44E+10
		778.00		4.50	-2.76E+10		1.50E+11
+	RU-103	497.08		89.00	6.37E-02	3.79E-01	3.79E-01
+	RU-106	621.84		9.80	-4.38E-01	6.61E-01	6.61E-01
+	AG-108M	433.93		89.90	-5.05E-02	5.84E-02	5.84E-02
		614.37		90.40	6.45E-03		8.40E-02
		722.95		90.50	6.48E-03		6.62E-02
+	CD-109	88.03	*	3.72	3.97E+00	3.86E+00	3.86E+00
+	AG-110M	657.75		93.14	-2.60E-02	8.37E-02	8.37E-02
		677.61		10.53	2.15E-01		7.77E-01
		706.67		16.46	1.01E-01		5.69E-01
		763.93		21.98	3.33E-04		4.00E-01
		884.67		71.63	6.47E-03		1.31E-01
		1384.27		23.94	-9.96E-02		3.20E-01
+	CD-113M	263.70		0.02	2.42E+00	2.39E+02	2.39E+02
+	SN-113	255.12		1.93	6.77E-01	1.61E-01	4.48E+00
		391.69		64.90	2.94E-02		1.61E-01
+	TE123M	159.00		84.10	-5.33E-02	9.57E-02	9.57E-02
+	SB-124	602.71		97.87	8.37E-02	2.02E-01	2.02E-01
		645.85		7.26	-3.33E-01		2.52E+00
		722.78		11.10	1.69E-01		1.72E+00
		1691.02		49.00	-1.62E-01		2.28E-01
+	I-125	35.49		6.49	9.87E-02	2.55E+00	2.55E+00
+	SB-125	176.33		6.89	5.90E-02	2.09E-01	7.35E-01
		427.89		29.33	9.05E-02		2.09E-01

Analysis Report for 1707091-10

HTC-A08-BKGD01-3036-01

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	SB-125	463.38		10.35	2.69E-02	2.09E-01	6.85E-01
		600.56		17.80	1.35E-02		3.66E-01
		635.90		11.32	-1.62E-02		5.78E-01
+	SB-126	414.70		83.30	-5.98E+00	1.64E+01	1.90E+01
		666.33		99.60	-8.53E+00		1.81E+01
		695.00		99.60	-1.01E+01		1.64E+01
		720.50		53.80	2.39E+00		3.17E+01
+	SN-126	87.57	*	37.00	3.44E-01	3.33E-01	3.33E-01
+	SB-127	473.00		25.00	-9.22E+05	1.24E+07	1.69E+07
		685.20		35.70	-4.54E+06		1.24E+07
		783.80		14.70	1.16E+07		3.29E+07
+	I-129	29.78		57.00	-3.65E-02	9.55E-02	9.55E-02
		33.60		13.20	-6.45E-02		3.96E-01
		39.58		7.52	-2.86E-01		6.52E-01
+	I-131	284.30		6.05	-2.18E+03	3.98E+02	4.87E+03
		364.48		81.20	2.70E+02		3.98E+02
		636.97		7.26	2.30E+01		5.07E+03
		722.89		1.80	1.95E+03		1.99E+04
+	TE-132	49.72		13.10	-1.07E+08	1.13E+08	7.50E+08
		228.16		88.00	-5.97E+06		1.13E+08
+	BA-133	81.00		33.00	-1.16E-02	1.26E-01	1.71E-01
		302.84		17.80	2.78E-02		3.28E-01
		356.01		60.00	6.01E-03		1.26E-01
+	@ I-133	529.87		86.30	1.00E+26	1.00E+26	1.00E+26
+	XE-133	81.00		38.00	-6.15E+03	9.06E+04	9.06E+04
+	CS-134	563.23		8.38	1.10E-01	7.17E-02	7.69E-01
		569.32		15.43	2.65E-01		4.26E-01
		604.70		97.60	-4.01E-03		7.17E-02
		795.84		85.40	3.44E-02		9.02E-02
		801.93		8.73	8.71E-02		7.80E-01
+	CS-135	268.24		16.00	4.93E-01	3.80E-01	3.80E-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	3.20E+01	1.31E+01	1.30E+02
		163.89		4.61	-6.64E+01		1.98E+02
		176.55		13.56	5.68E+00		7.08E+01
		273.65		12.66	-7.97E+01		9.30E+01
		340.57		48.50	7.36E+00		3.17E+01
		818.50		99.70	-5.76E+00		1.31E+01
		1048.07		79.60	-1.73E+00		1.76E+01
		1235.34		19.70	1.81E+01		1.14E+02
+	CS-137	661.65		85.12	8.23E-03	7.31E-02	7.31E-02
+	LA-138	788.74		34.00	4.45E-02	7.87E-02	1.86E-01
		1435.80		66.00	-1.51E-02		7.87E-02
+	CE-139	165.85		80.35	3.54E-03	9.77E-02	9.77E-02
+	BA-140	162.64		6.70	2.20E+01	5.02E+01	1.61E+02
		304.84		4.50	6.97E+01		2.74E+02
		423.70		3.20	1.96E+02		4.24E+02

Analysis Report for 1707091-10

HTC-A08-BKGD01-3036-01

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	BA-140	437.55	2.00	-1.21E+02	5.02E+01	6.51E+02
		537.32	25.00	3.41E+00		5.02E+01
+	LA-140	328.77	20.50	7.06E+01	1.54E+01	7.20E+01
		487.03	45.50	8.96E+00		2.90E+01
		815.85	23.50	2.18E+01		6.83E+01
		1596.49	95.49	3.19E+00		1.54E+01
+	CE-141	145.44	48.40	6.31E-01	8.47E-01	8.47E-01
+	@ CE-143	57.36	11.80	1.00E+26	1.00E+26	1.00E+26
	@	293.26	42.00	1.00E+26		1.00E+26
	@	664.55	5.20	1.00E+26		1.00E+26
+	CE-144	133.54	10.80	-1.46E-01	5.47E-01	5.47E-01
+	PM-144	476.78	42.00	6.38E-04	7.36E-02	1.63E-01
		618.01	98.60	-2.01E-02		7.51E-02
		696.49	99.49	-1.57E-02		7.36E-02
+	PM-145	36.85	21.70	-5.01E-02	1.32E-01	2.38E-01
		37.36	39.70	7.03E-02		1.32E-01
		42.30	15.10	-3.60E-02		3.17E-01
		72.40	2.31	1.86E+00		2.96E+00
+	PM-146	453.90	39.94	6.99E-02	1.47E-01	1.47E-01
		735.90	14.01	-2.83E-01		4.55E-01
		747.13	13.10	3.06E-01		5.16E-01
+	ND-147	91.11	28.90	2.59E+02	1.32E+02	1.32E+02
		531.02	13.10	3.69E+01		2.29E+02
+	PM-149	285.90	3.10	-5.84E+13	8.46E+13	8.46E+13
+	EU-152	121.78	20.50	-2.02E-01	2.05E-01	2.05E-01
		244.69	5.40	-5.23E-01		1.00E+00
		344.27	19.13	9.60E-02		3.18E-01
		778.89	9.20	-3.79E-01		6.40E-01
		964.01	10.40	4.56E-01		8.56E-01
		1085.78	7.22	-5.86E-01		9.81E-01
		1112.02	9.60	1.88E-01		8.28E-01
		1407.95	14.94	8.96E-02		4.41E-01
+	GD-153	97.43	31.30	1.27E-01	2.09E-01	2.09E-01
		103.18	22.20	1.83E-03		2.80E-01
+	EU-154	123.07	40.50	-1.81E-02	1.10E-01	1.10E-01
		723.30	19.70	3.04E-02		3.10E-01
		873.19	11.50	-2.34E-01		5.06E-01
		996.32	10.30	5.75E-02		6.89E-01
		1004.76	17.90	-3.93E-02		3.99E-01
		1274.45	35.50	-9.96E-02		1.94E-01
+	EU-155	86.50	30.90	2.92E-02	2.01E-01	2.01E-01
		105.30	20.70	5.53E-02		2.32E-01
+	EU-156	811.77	10.40	-2.27E+00	6.05E+01	6.05E+01
		1153.47	7.20	-1.20E+01		1.14E+02
		1230.71	8.90	1.35E+01		1.14E+02
+	HO-166M	184.41	72.60	1.07E-01	7.87E-02	7.87E-02
		280.45	29.60	-3.82E-02		1.83E-01
		410.94	11.10	2.57E-01		5.36E-01
		711.69	54.10	-4.64E-02		1.22E-01

Analysis Report for 1707091-10

HTC-A08-BKGD01-3036-01

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	TM-171	66.72		0.14	-4.82E+01	4.37E+01	4.37E+01
+	HF-172	67.35		5.31	-5.81E-01	4.51E-01	1.12E+00
		125.81		11.30	-3.01E-01		4.51E-01
+	LU-172	181.53		20.60	1.36E+03	3.92E+03	7.80E+03
		900.72		29.81	-7.64E+01		6.61E+03
		1093.66		62.50	2.41E+02		3.92E+03
+	LU-173	100.72		5.24	4.48E-01	3.30E-01	1.06E+00
		272.11		21.20	5.03E-02		3.30E-01
+	HF-175	343.40		84.00	5.85E-02	1.88E-01	1.88E-01
+	LU-176	88.34		13.30	1.12E-02	5.62E-02	4.68E-01
		201.83		86.00	-2.15E-02		5.62E-02
		306.78		94.00	1.74E-02		5.62E-02
+	HF-181	133.02		41.70	-1.54E-01	3.61E-01	5.76E-01
		345.85		17.20	2.65E-01		1.80E+00
		482.03		82.80	-6.42E-02		3.61E-01
+	TA-182	67.75		41.20	-1.24E-01	2.41E-01	2.41E-01
		1121.30		34.90	7.91E-01		5.96E-01
		1189.05		16.23	-2.82E-01		9.41E-01
		1221.41		26.98	-1.54E-01		6.05E-01
		1231.02		11.44	1.93E-01		1.64E+00
+	IR-192	308.46		29.68	6.97E-02	2.89E-01	4.61E-01
		468.07		48.10	-1.00E-01		2.89E-01
+	HG-203	279.19		77.30	-1.32E-02	3.21E-01	3.21E-01
+	TL-204	374.74		94.11	1.43E-02	5.84E-02	5.84E-02
		899.15		99.16	-1.00E-02		6.18E-02
		911.74		91.10	4.28E-01		1.53E-01
+	BI-207	569.67		97.72	1.79E-02	6.20E-02	6.20E-02
		1063.62		74.90	6.75E-03		9.23E-02
+	TL-208	583.14	*	30.22	1.29E+00	2.76E-01	2.76E-01
		860.37	*	4.48	2.38E+00		1.64E+00
		2614.66		35.85	1.17E+00		5.44E-01
+	BI-210M	262.00		45.00	7.29E-03	1.21E-01	1.21E-01
		300.00		23.00	-7.56E-01		2.61E-01
+	PB-210	46.50	*	4.25	6.62E-01	1.35E+00	1.35E+00
+	PB-211	404.84		2.90	-1.74E+00	1.85E+00	1.85E+00
		831.96		2.90	-1.52E+00		2.02E+00
+	BI-212	727.17	*	11.80	7.47E-01	7.12E-01	7.12E-01
		1620.62		2.75	-2.85E-01		1.76E+00
+	PB-212	238.63	*	44.60	1.38E+00	2.60E-01	2.60E-01
		300.09	*	3.41	1.31E+00		1.37E+00
+	BI-214	609.31	*	46.30	9.06E-01	2.28E-01	2.28E-01
		1120.29	*	15.10	9.38E-01		7.53E-01
		1764.49	*	15.80	9.77E-01		3.98E-01
		2204.22	*	4.98	1.49E+00		1.17E+00
+	PB-214	295.21	*	19.19	7.22E-01	2.29E-01	4.09E-01
		351.92	*	37.19	1.06E+00		2.29E-01
+	RN-219	401.80		6.50	-6.84E-02	8.41E-01	8.41E-01
+	RA-223	323.87		3.88	6.72E-02	1.39E+00	1.39E+00

Analysis Report for 1707091-10

HTC-A08-BKGD01-3036-01

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	RA-224	240.98	*	3.95	3.59E+00	2.94E+00	2.94E+00
+	RA-225	40.00		31.00	4.45E+00	1.79E+01	1.79E+01
+	RA-226	186.21	*	3.28	2.26E+00	2.22E+00	2.22E+00
+	TH-227	50.10		8.40	-9.85E-02	5.30E-01	5.61E-01
		236.00		11.50	-4.01E+00		5.30E-01
		256.20		6.30	-6.03E-04		8.76E-01
+	AC-228	338.32	*	11.40	1.20E+00	3.54E-01	5.57E-01
		911.07	*	27.70	1.36E+00		3.54E-01
		969.11	*	16.60	1.15E+00		6.39E-01
+	TH-230	48.44		16.90	8.81E-03	2.94E-01	2.94E-01
		62.85		4.60	2.09E+00		1.32E+00
		67.67		0.37	-7.52E+00		1.46E+01
+	PA-231	283.67		1.60	-1.05E+00	2.49E+00	3.03E+00
		302.67		2.30	2.11E-01		2.49E+00
+	TH-231	25.64		14.70	-2.68E+00	4.82E-01	4.82E-01
		84.21		6.40	-6.53E-01		8.90E-01
+	PA-233	311.98		38.60	1.24E-01	1.84E+00	1.84E+00
+	PA-234	131.20		20.40	-8.73E-04	2.31E-01	2.31E-01
		733.99		8.80	-7.84E-02		7.06E-01
		946.00		12.00	1.47E-01		5.53E-01
+	PA-234M	1001.03		0.92	3.05E+00	7.88E+00	7.88E+00
+	TH-234	63.29	*	3.80	2.06E+00	2.59E+00	2.59E+00
+	U-235	143.76		10.50	-4.71E-02	4.42E-01	4.42E-01
		163.35		4.70	-3.20E-01		9.55E-01
		205.31		4.70	-1.64E+00		1.04E+00
+	NP-237	86.50		12.60	6.90E-02	4.74E-01	4.74E-01
+	NP-239	106.10		22.70	7.19E+11	1.61E+12	1.61E+12
		228.18		10.70	-1.85E+11		3.48E+12
		277.60		14.10	3.73E+12		3.23E+12
+	AM-241	59.54		35.90	-1.49E-01	1.47E-01	1.47E-01
+	AM-243	74.67		66.00	-1.45E-01	1.19E-01	1.19E-01
+	CM-243	209.75	*	3.29	2.00E+00	4.50E-01	1.96E+00
		228.14		10.60	-2.39E-02		4.50E-01
		277.60	*	14.00	4.24E-01		4.69E-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 1707091-10

HTC-A08-BKGD01-3036-01

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	2.02E+00	2.02E+00	2.18E-01	9.64E-01
	NA-22	1274.54		99.94	7.25E-02	7.25E-02	-3.73E-02	3.33E-02
@	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	4.14E-02	4.14E-02	-1.47E-03	1.72E-02
+	K-40	1460.81	*	10.67	1.04E+00	1.04E+00	2.57E+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	5.72E-02	5.72E-02	-2.96E-02	2.80E-02
		78.34		96.00	7.93E-02		1.90E-01	3.91E-02
	SC-46	889.25		99.98	1.46E-01	1.46E-01	-6.58E-02	6.81E-02
		1120.51		99.99	2.59E-01		3.42E-01	1.24E-01
	V-48	983.52		99.98	5.48E+00	5.48E+00	2.05E+00	2.56E+00
		1312.10		97.50	5.86E+00		-3.64E-01	2.70E+00
	CR-51	320.08		9.83	6.69E+00	6.69E+00	-9.42E-03	3.22E+00
	MN-54	834.83		99.97	8.01E-02	8.01E-02	-3.36E-03	3.75E-02
	CO-56	846.75		99.96	1.60E-01	1.31E-01	-5.48E-02	7.52E-02
		1037.75		14.03	1.13E+00		-3.58E-01	5.25E-01
		1238.25		67.00	4.06E-01		2.37E-01	1.93E-01
		1771.40		15.51	6.04E-01		6.70E-02	2.48E-01
		2598.48		16.90	1.31E-01		0.00E+00	0.00E+00
	CO-57	122.06		85.51	6.52E-02	6.52E-02	-2.13E-02	3.17E-02
		136.48		10.60	5.76E-01		1.05E-01	2.81E-01
	CO-58	810.76		99.40	1.70E-01	1.70E-01	4.05E-02	7.98E-02
	FE-59	1099.22		56.50	6.76E-01	6.76E-01	5.41E-01	3.17E-01
		1291.56		43.20	8.52E-01		3.82E-01	3.95E-01
	CO-60	1173.22		100.00	8.56E-02	6.82E-02	-5.67E-02	4.01E-02
		1332.49		100.00	6.82E-02		4.03E-02	3.11E-02
	ZN-65	1115.52		50.75	2.02E-01	2.02E-01	1.54E-02	9.45E-02
	GA-67	93.31		35.70	3.52E+08	3.52E+08	7.38E+08	1.73E+08
		208.95		2.24	5.02E+09		5.34E+09	2.44E+09
		300.22		16.00	7.48E+08		-1.45E+09	3.62E+08
	SE-75	121.11		16.70	4.44E-01	1.43E-01	-4.38E-01	2.16E-01
		136.00		59.20	1.43E-01		2.60E-02	6.95E-02
		264.65		59.80	1.62E-01		-2.56E-02	7.83E-02
		279.53		25.20	3.94E-01		-1.63E-02	1.91E-01
		400.65		11.40	8.72E-01		2.02E-01	4.18E-01
	RB-82	776.52		13.00	7.83E+00	7.83E+00	1.49E+00	3.69E+00
	RB-83	520.41		46.00	2.91E-01	2.91E-01	7.98E-02	1.39E-01
		529.64		30.30	3.76E-01		-3.18E-02	1.78E-01
		552.65		16.40	7.98E-01		-5.05E-02	3.79E-01
	KR-85	513.99		0.43	1.92E+01	1.92E+01	2.05E+01	9.25E+00
	SR-85	513.99		99.27	2.42E-01	2.42E-01	2.58E-01	1.17E-01

Analysis Report for 1707091-10

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	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	Y-88	898.02		93.40	1.20E-01	8.51E-02	-2.31E-02	5.57E-02
		1836.01		99.38	8.51E-02		2.27E-02	3.56E-02
	MO-93	263.06		56.72	9.87E-02	4.80E-02	2.67E-02	4.78E-02
		684.67		99.68	5.85E-02		-2.14E-02	2.75E-02
		1477.11		99.08	4.80E-02		2.07E-02	2.09E-02
	NB-93M	16.57		9.43	5.16E-01	5.16E-01	2.24E-02	2.43E-01
	NB-94	702.63		100.00	7.10E-02	6.01E-02	2.08E-02	3.37E-02
		871.10		100.00	6.01E-02		9.81E-03	2.80E-02
	NB-95	765.79		99.81	5.58E-01	5.58E-01	3.30E-01	2.65E-01
	NB-95M	235.69		25.00	6.30E+07	6.30E+07	-4.77E+08	3.07E+07
	ZR-95	724.18		43.70	4.60E-01	3.73E-01	4.13E-02	2.18E-01
		756.72		55.30	3.73E-01		1.85E-01	1.76E-01
	MO-99	181.06		6.20	8.32E+10	5.44E+10	1.45E+10	4.04E+10
		739.58		12.80	5.44E+10		-2.82E+09	2.56E+10
		778.00		4.50	1.50E+11		-2.76E+10	7.02E+10
	RU-103	497.08		89.00	3.79E-01	3.79E-01	6.37E-02	1.81E-01
	RU-106	621.84		9.80	6.61E-01	6.61E-01	-4.38E-01	3.11E-01
	AG-108M	433.93		89.90	5.84E-02	5.84E-02	-5.05E-02	2.78E-02
		614.37		90.40	8.40E-02		6.45E-03	4.02E-02
		722.95		90.50	6.62E-02		6.48E-03	3.11E-02
+	CD-109	88.03	*	3.72	3.86E+00	3.86E+00	3.97E+00	1.91E+00
	AG-110M	657.75		93.14	8.37E-02	8.37E-02	-2.60E-02	3.95E-02
		677.61		10.53	7.77E-01		2.15E-01	3.67E-01
		706.67		16.46	5.69E-01		1.01E-01	2.70E-01
		763.93		21.98	4.00E-01		3.33E-04	1.89E-01
		884.67		71.63	1.31E-01		6.47E-03	6.16E-02
		1384.27		23.94	3.20E-01		-9.96E-02	1.44E-01
	CD-113M	263.70		0.02	2.39E+02	2.39E+02	2.42E+00	1.16E+02
	SN-113	255.12		1.93	4.48E+00	1.61E-01	6.77E-01	2.16E+00
		391.69		64.90	1.61E-01		2.94E-02	7.75E-02
	TE123M	159.00		84.10	9.57E-02	9.57E-02	-5.33E-02	4.65E-02
	SB-124	602.71		97.87	2.02E-01	2.02E-01	8.37E-02	9.59E-02
		645.85		7.26	2.52E+00		-3.33E-01	1.19E+00
		722.78		11.10	1.72E+00		1.69E-01	8.09E-01
		1691.02		49.00	2.28E-01		-1.62E-01	9.23E-02
	I-125	35.49		6.49	2.55E+00	2.55E+00	9.87E-02	1.24E+00
	SB-125	176.33		6.89	7.35E-01	2.09E-01	5.90E-02	3.57E-01
		427.89		29.33	2.09E-01		9.05E-02	9.99E-02
		463.38		10.35	6.85E-01		2.69E-02	3.29E-01
		600.56		17.80	3.66E-01		1.35E-02	1.73E-01
		635.90		11.32	5.78E-01		-1.62E-02	2.74E-01
	SB-126	414.70		83.30	1.90E+01	1.64E+01	-5.98E+00	9.13E+00
		666.33		99.60	1.81E+01		-8.53E+00	8.58E+00
		695.00		99.60	1.64E+01		-1.01E+01	7.70E+00
		720.50		53.80	3.17E+01		2.39E+00	1.49E+01
+	SN-126	87.57	*	37.00	3.33E-01	3.33E-01	3.44E-01	1.65E-01
	SB-127	473.00		25.00	1.69E+07	1.24E+07	-9.22E+05	8.07E+06
		685.20		35.70	1.24E+07		-4.54E+06	5.84E+06
		783.80		14.70	3.29E+07		1.16E+07	1.54E+07
	I-129	29.78		57.00	9.55E-02	9.55E-02	-3.65E-02	4.64E-02
		33.60		13.20	3.96E-01		-6.45E-02	1.92E-01
		39.58		7.52	6.52E-01		-2.86E-01	3.17E-01
	I-131	284.30		6.05	4.87E+03	3.98E+02	-2.18E+03	2.35E+03

Analysis Report for 1707091-10

HTC-A08-BKGD01-3036-01

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
I-131	364.48	81.20	3.98E+02	3.98E+02	2.70E+02	1.91E+02
	636.97	7.26	5.07E+03		2.30E+01	2.40E+03
	722.89	1.80	1.99E+04		1.95E+03	9.35E+03
TE-132	49.72	13.10	7.50E+08	1.13E+08	-1.07E+08	3.65E+08
	228.16	88.00	1.13E+08		-5.97E+06	5.44E+07
BA-133	81.00	33.00	1.71E-01	1.26E-01	-1.16E-02	8.40E-02
	302.84	17.80	3.28E-01		2.78E-02	1.59E-01
	356.01	60.00	1.26E-01		6.01E-03	6.13E-02
@ I-133	529.87	86.30	1.00E+26	1.00E+26	1.00E+26	1.00E+20
XE-133	81.00	38.00	9.06E+04	9.06E+04	-6.15E+03	4.44E+04
CS-134	563.23	8.38	7.69E-01	7.17E-02	1.10E-01	3.65E-01
	569.32	15.43	4.26E-01		2.65E-01	2.03E-01
	604.70	97.60	7.17E-02		-4.01E-03	3.41E-02
	795.84	85.40	9.02E-02		3.44E-02	4.26E-02
	801.93	8.73	7.80E-01		8.71E-02	3.66E-01
CS-135	268.24	16.00	3.80E-01	3.80E-01	4.93E-01	1.85E-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	1.30E+02	1.31E+01	3.20E+01	6.32E+01
	163.89	4.61	1.98E+02		-6.64E+01	9.62E+01
	176.55	13.56	7.08E+01		5.68E+00	3.44E+01
	273.65	12.66	9.30E+01		-7.97E+01	4.51E+01
	340.57	48.50	3.17E+01		7.36E+00	1.54E+01
	818.50	99.70	1.31E+01		-5.76E+00	6.14E+00
	1048.07	79.60	1.76E+01		-1.73E+00	8.20E+00
	1235.34	19.70	1.14E+02		1.81E+01	5.42E+01
CS-137	661.65	85.12	7.31E-02	7.31E-02	8.23E-03	3.46E-02
LA-138	788.74	34.00	1.86E-01	7.87E-02	4.45E-02	8.73E-02
	1435.80	66.00	7.87E-02		-1.51E-02	3.48E-02
CE-139	165.85	80.35	9.77E-02	9.77E-02	3.54E-03	4.75E-02
BA-140	162.64	6.70	1.61E+02	5.02E+01	2.20E+01	7.84E+01
	304.84	4.50	2.74E+02		6.97E+01	1.32E+02
	423.70	3.20	4.24E+02		1.96E+02	2.03E+02
	437.55	2.00	6.51E+02		-1.21E+02	3.11E+02
	537.32	25.00	5.02E+01		3.41E+00	2.37E+01
LA-140	328.77	20.50	7.20E+01	1.54E+01	7.06E+01	3.48E+01
	487.03	45.50	2.90E+01		8.96E+00	1.38E+01
	815.85	23.50	6.83E+01		2.18E+01	3.22E+01
	1596.49	95.49	1.54E+01		3.19E+00	6.88E+00
CE-141	145.44	48.40	8.47E-01	8.47E-01	6.31E-01	4.12E-01
@ CE-143	57.36	11.80	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	293.26	42.00	1.00E+26		1.00E+26	1.00E+20
@	664.55	5.20	1.00E+26		1.00E+26	1.00E+20
CE-144	133.54	10.80	5.47E-01	5.47E-01	-1.46E-01	2.66E-01
PM-144	476.78	42.00	1.63E-01	7.36E-02	6.38E-04	7.77E-02
	618.01	98.60	7.51E-02		-2.01E-02	3.56E-02
	696.49	99.49	7.36E-02		-1.57E-02	3.47E-02
PM-145	36.85	21.70	2.38E-01	1.32E-01	-5.01E-02	1.16E-01
	37.36	39.70	1.32E-01		7.03E-02	6.40E-02
	42.30	15.10	3.17E-01		-3.60E-02	1.54E-01
	72.40	2.31	2.96E+00		1.86E+00	1.46E+00
PM-146	453.90	39.94	1.47E-01	1.47E-01	6.99E-02	7.04E-02

Analysis Report for 1707091-10

HTC-A08-BKGD01-3036-01

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
PM-146	735.90	14.01	4.55E-01	1.47E-01	-2.83E-01	2.14E-01
	747.13	13.10	5.16E-01		3.06E-01	2.44E-01
ND-147	91.11	28.90	1.32E+02	1.32E+02	2.59E+02	6.48E+01
	531.02	13.10	2.29E+02		3.69E+01	1.08E+02
PM-149	285.90	3.10	8.46E+13	8.46E+13	-5.84E+13	4.07E+13
EU-152	121.78	20.50	2.05E-01	2.05E-01	-2.02E-01	9.95E-02
	244.69	5.40	1.00E+00		-5.23E-01	4.85E-01
	344.27	19.13	3.18E-01		9.60E-02	1.54E-01
	778.89	9.20	6.40E-01		-3.79E-01	2.99E-01
	964.01	10.40	8.56E-01		4.56E-01	4.06E-01
	1085.78	7.22	9.81E-01		-5.86E-01	4.56E-01
	1112.02	9.60	8.28E-01		1.88E-01	3.88E-01
	1407.95	14.94	4.41E-01		8.96E-02	2.01E-01
GD-153	97.43	31.30	2.09E-01	2.09E-01	1.27E-01	1.02E-01
	103.18	22.20	2.80E-01		1.83E-03	1.36E-01
EU-154	123.07	40.50	1.10E-01	1.10E-01	-1.81E-02	5.37E-02
	723.30	19.70	3.10E-01		3.04E-02	1.46E-01
	873.19	11.50	5.06E-01		-2.34E-01	2.35E-01
	996.32	10.30	6.89E-01		5.75E-02	3.22E-01
	1004.76	17.90	3.99E-01		-3.93E-02	1.86E-01
	1274.45	35.50	1.94E-01		-9.96E-02	8.90E-02
EU-155	86.50	30.90	2.01E-01	2.01E-01	2.92E-02	9.86E-02
	105.30	20.70	2.32E-01		5.53E-02	1.13E-01
EU-156	811.77	10.40	6.05E+01	6.05E+01	-2.27E+00	2.84E+01
	1153.47	7.20	1.14E+02		-1.20E+01	5.33E+01
	1230.71	8.90	1.14E+02		1.35E+01	5.41E+01
HO-166M	184.41	72.60	7.87E-02	7.87E-02	1.07E-01	3.84E-02
	280.45	29.60	1.83E-01		-3.82E-02	8.83E-02
	410.94	11.10	5.36E-01		2.57E-01	2.58E-01
	711.69	54.10	1.22E-01		-4.64E-02	5.77E-02
TM-171	66.72	0.14	4.37E+01	4.37E+01	-4.82E+01	2.14E+01
HF-172	67.35	5.31	1.12E+00	4.51E-01	-5.81E-01	5.50E-01
	125.81	11.30	4.51E-01		-3.01E-01	2.19E-01
LU-172	181.53	20.60	7.80E+03	3.92E+03	1.36E+03	3.78E+03
	900.72	29.81	6.61E+03		-7.64E+01	3.06E+03
	1093.66	62.50	3.92E+03		2.41E+02	1.83E+03
LU-173	100.72	5.24	1.06E+00	3.30E-01	4.48E-01	5.16E-01
	272.11	21.20	3.30E-01		5.03E-02	1.60E-01
HF-175	343.40	84.00	1.88E-01	1.88E-01	5.85E-02	9.05E-02
LU-176	88.34	13.30	4.68E-01	5.62E-02	1.12E-02	2.30E-01
	201.83	86.00	5.62E-02		-2.15E-02	2.73E-02
	306.78	94.00	5.62E-02		1.74E-02	2.71E-02
HF-181	133.02	41.70	5.76E-01	3.61E-01	-1.54E-01	2.80E-01
	345.85	17.20	1.80E+00		2.65E-01	8.67E-01
	482.03	82.80	3.61E-01		-6.42E-02	1.72E-01
TA-182	67.75	41.20	2.41E-01	2.41E-01	-1.24E-01	1.18E-01
	1121.30	34.90	5.96E-01		7.91E-01	2.85E-01
	1189.05	16.23	9.41E-01		-2.82E-01	4.41E-01
	1221.41	26.98	6.05E-01		-1.54E-01	2.84E-01
	1231.02	11.44	1.64E+00		1.93E-01	7.77E-01
IR-192	308.46	29.68	4.61E-01	2.89E-01	6.97E-02	2.22E-01
	468.07	48.10	2.89E-01		-1.00E-01	1.37E-01
HG-203	279.19	77.30	3.21E-01	3.21E-01	-1.32E-02	1.55E-01

Analysis Report for 1707091-10

HTC-A08-BKGD01-3036-01

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	TL-204	374.74		94.11	5.84E-02	5.84E-02	1.43E-02	2.80E-02
		899.15		99.16	6.18E-02		-1.00E-02	2.86E-02
		911.74		91.10	1.53E-01		4.28E-01	7.42E-02
	BI-207	569.67		97.72	6.20E-02	6.20E-02	1.79E-02	2.94E-02
		1063.62		74.90	9.23E-02		6.75E-03	4.29E-02
+	TL-208	583.14	*	30.22	2.76E-01	2.76E-01	1.29E+00	1.33E-01
		860.37	*	4.48	1.64E+00		2.38E+00	7.72E-01
		2614.66		35.85	5.44E-01		1.17E+00	2.59E-01
	BI-210M	262.00		45.00	1.21E-01	1.21E-01	7.29E-03	5.86E-02
		300.00		23.00	2.61E-01		-7.56E-01	1.26E-01
+	PB-210	46.50	*	4.25	1.35E+00	1.35E+00	6.62E-01	6.61E-01
	PB-211	404.84		2.90	1.85E+00	1.85E+00	-1.74E+00	8.84E-01
		831.96		2.90	2.02E+00		-1.52E+00	9.40E-01
+	BI-212	727.17	*	11.80	7.12E-01	7.12E-01	7.47E-01	3.41E-01
		1620.62		2.75	1.76E+00		-2.85E-01	7.63E-01
+	PB-212	238.63	*	44.60	2.60E-01	2.60E-01	1.38E+00	1.28E-01
		300.09	*	3.41	1.37E+00		1.31E+00	6.56E-01
+	BI-214	609.31	*	46.30	2.28E-01	2.28E-01	9.06E-01	1.11E-01
		1120.29	*	15.10	7.53E-01		9.38E-01	3.60E-01
		1764.49	*	15.80	3.98E-01		9.77E-01	1.77E-01
		2204.22	*	4.98	1.17E+00		1.49E+00	5.06E-01
+	PB-214	295.21	*	19.19	4.09E-01	2.29E-01	7.22E-01	2.00E-01
		351.92	*	37.19	2.29E-01		1.06E+00	1.12E-01
	RN-219	401.80		6.50	8.41E-01	8.41E-01	-6.84E-02	4.03E-01
	RA-223	323.87		3.88	1.39E+00	1.39E+00	6.72E-02	6.69E-01
+	RA-224	240.98	*	3.95	2.94E+00	2.94E+00	3.59E+00	1.45E+00
	RA-225	40.00		31.00	1.79E+01	1.79E+01	4.45E+00	8.71E+00
+	RA-226	186.21	*	3.28	2.22E+00	2.22E+00	2.26E+00	1.09E+00
	TH-227	50.10		8.40	5.61E-01	5.30E-01	-9.85E-02	2.73E-01
		236.00		11.50	5.30E-01		-4.01E+00	2.58E-01
		256.20		6.30	8.76E-01		-6.03E-04	4.25E-01
+	AC-228	338.32	*	11.40	5.57E-01	3.54E-01	1.20E+00	2.69E-01
		911.07	*	27.70	3.54E-01		1.36E+00	1.69E-01
		969.11	*	16.60	6.39E-01		1.15E+00	3.06E-01
	TH-230	48.44		16.90	2.94E-01	2.94E-01	8.81E-03	1.43E-01
		62.85		4.60	1.32E+00		2.09E+00	6.49E-01
		67.67		0.37	1.46E+01		-7.52E+00	7.12E+00
	PA-231	283.67		1.60	3.03E+00	2.49E+00	-1.05E+00	1.46E+00
		302.67		2.30	2.49E+00		2.11E-01	1.21E+00
	TH-231	25.64		14.70	4.82E-01	4.82E-01	-2.68E+00	2.35E-01
		84.21		6.40	8.90E-01		-6.53E-01	4.36E-01
	PA-233	311.98		38.60	1.84E+00	1.84E+00	1.24E-01	8.88E-01
	PA-234	131.20		20.40	2.31E-01	2.31E-01	-8.73E-04	1.13E-01
		733.99		8.80	7.06E-01		-7.84E-02	3.33E-01
		946.00		12.00	5.53E-01		1.47E-01	2.58E-01
	PA-234M	1001.03		0.92	7.88E+00	7.88E+00	3.05E+00	3.69E+00
+	TH-234	63.29	*	3.80	2.59E+00	2.59E+00	2.06E+00	1.28E+00
	U-235	143.76		10.50	4.42E-01	4.42E-01	-4.71E-02	2.15E-01
		163.35		4.70	9.55E-01		-3.20E-01	4.64E-01
		205.31		4.70	1.04E+00		-1.64E+00	5.07E-01
	NP-237	86.50		12.60	4.74E-01	4.74E-01	6.90E-02	2.33E-01
	NP-239	106.10		22.70	1.61E+12	1.61E+12	7.19E+11	7.83E+11
		228.18		10.70	3.48E+12		-1.85E+11	1.68E+12

Analysis Report for 1707091-10

HTC-A08-BKGD01-3036-01

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	NP-239	277.60		14.10	3.23E+12	1.61E+12	3.73E+12	1.57E+12
	AM-241	59.54		35.90	1.47E-01	1.47E-01	-1.49E-01	7.17E-02
	AM-243	74.67		66.00	1.19E-01	1.19E-01	-1.45E-01	5.85E-02
+	CM-243	209.75	*	3.29	1.96E+00	4.50E-01	2.00E+00	9.55E-01
		228.14		10.60	4.50E-01		-2.39E-02	2.17E-01
		277.60	*	14.00	4.69E-01		4.24E-01	2.28E-01

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

No Action Level results available for reporting purposes.

DATA REVIEW COMMENTS REPORT

Creation Date	Comment	User

No Data Review Comments Entered.

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

Sample Title: HTC-A08-BKGD01-3036-01

Elapsed Live time: 3600
Elapsed Real Time: 3602

Channel								
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	87	85	84	190	495	150
25:	85	95	85	78	72	70	63	86
33:	78	78	84	79	98	87	89	101
41:	77	83	95	82	98	104	152	112
49:	81	96	102	103	118	128	109	117
57:	117	134	112	146	131	170	199	284
65:	169	143	174	162	153	128	178	175
73:	173	235	465	322	462	566	212	149
81:	168	168	149	191	171	146	210	250
89:	175	215	181	162	307	267	129	122
97:	108	95	131	162	105	93	101	106
105:	119	127	86	95	109	99	88	102
113:	104	94	105	102	85	96	92	81
121:	77	88	72	79	114	88	106	95
129:	117	146	68	99	90	90	103	86
137:	93	95	104	82	106	94	63	99
145:	102	88	85	94	84	72	85	88
153:	74	94	93	99	92	86	82	71
161:	84	60	72	92	80	70	78	89
169:	91	91	64	58	74	66	75	82
177:	74	76	79	64	95	74	66	73
185:	90	166	149	74	71	76	68	78
193:	79	75	72	70	75	82	79	56
201:	49	83	88	74	83	65	64	68
209:	93	122	86	61	56	63	68	60
217:	59	61	72	56	52	65	60	59
225:	68	48	51	50	68	60	61	66
233:	53	58	68	57	65	220	681	261
241:	123	179	101	66	57	65	49	41
249:	37	51	52	44	50	41	64	49
257:	47	47	38	57	51	50	46	40
265:	42	43	46	47	42	83	76	57
273:	34	39	48	51	43	74	45	50
281:	30	42	23	27	39	31	37	36
289:	35	39	47	44	37	51	142	180
297:	52	45	43	60	67	39	22	33
305:	31	44	45	26	37	29	29	36
313:	32	37	44	30	36	30	33	34
321:	35	31	30	31	40	33	36	67
329:	57	29	48	42	30	31	30	27
337:	34	115	140	38	25	43	45	38
345:	35	36	31	42	35	37	86	282
353:	208	50	25	28	27	33	29	29
361:	29	30	29	22	23	30	30	35

369:	17	15	21	20	24	24	25	30

Sample Title: HTC-A08-BKGD01-3036-01

Channel								
377:	28	27	21	34	30	18	27	27
385:	26	30	24	29	29	33	28	26
393:	27	25	32	25	29	28	23	28
401:	24	29	27	23	22	21	27	18
409:	24	49	29	29	21	33	24	25
417:	20	27	20	22	28	24	23	22
425:	27	32	23	22	21	29	21	23
433:	17	27	15	24	16	23	36	22
441:	20	27	24	21	20	22	14	28
449:	17	21	24	22	21	25	22	24
457:	20	16	20	21	26	30	58	37
465:	17	17	25	19	14	21	22	17
473:	23	18	16	20	23	22	18	27
481:	20	22	17	24	19	21	24	14
489:	14	19	14	16	19	21	19	17
497:	19	20	16	26	24	14	17	14
505:	15	25	20	19	21	68	96	63
513:	30	25	19	21	22	15	27	19
521:	22	19	22	16	14	16	12	10
529:	17	16	16	12	14	15	13	12
537:	16	13	18	17	12	19	12	32
545:	16	25	12	18	17	14	18	13
553:	17	24	17	18	24	12	23	13
561:	19	17	31	8	18	14	17	13
569:	13	19	20	27	15	10	20	20
577:	21	14	19	14	15	48	169	159
585:	37	23	15	12	19	19	21	15
593:	17	16	11	19	18	13	12	21
601:	22	11	22	15	10	19	14	36
609:	162	178	57	13	24	23	23	20
617:	18	18	11	10	12	16	12	15
625:	8	17	13	12	15	17	11	26
633:	15	17	18	14	21	13	9	16
641:	11	13	11	14	13	8	13	15
649:	17	13	18	16	14	12	20	11
657:	8	13	10	13	19	22	13	14
665:	12	19	14	16	22	17	19	17
673:	16	14	16	10	12	15	17	16
681:	13	10	10	17	14	12	9	11
689:	19	9	8	12	15	15	10	14
697:	6	11	19	22	13	15	15	21
705:	22	17	14	18	8	23	20	14
713:	12	11	17	19	19	11	14	11
721:	13	12	6	13	9	19	35	42
729:	19	13	14	14	13	15	12	10
737:	10	17	9	18	18	12	7	15
745:	15	15	11	12	14	13	10	9
753:	11	16	15	12	16	18	14	14
761:	13	12	10	14	17	13	16	34
769:	21	14	14	19	15	16	19	12
777:	11	11	7	7	11	10	11	10
785:	12	12	14	16	6	8	9	16
793:	12	11	21	23	15	9	9	9

801:	13	8	10	11	16	8	15	8

Sample Title: HTC-A08-BKGD01-3036-01

Channel								
809:	12	6	7	10	17	17	8	7
817:	15	12	13	12	12	13	10	11
825:	7	18	12	16	6	7	8	7
833:	11	10	14	16	9	9	12	16
841:	16	13	15	9	13	10	11	14
849:	11	11	11	15	9	13	5	5
857:	10	9	17	19	28	13	14	6
865:	5	7	7	12	12	8	6	10
873:	8	6	7	10	9	9	13	8
881:	16	12	6	16	13	12	11	15
889:	11	8	5	5	10	12	6	9
897:	7	5	8	9	11	6	8	9
905:	7	7	5	7	21	34	125	86
913:	25	7	14	13	11	8	7	11
921:	8	4	9	9	7	11	9	7
929:	7	7	8	10	13	24	16	13
937:	11	7	6	8	3	6	11	7
945:	7	9	9	13	11	11	11	14
953:	9	7	11	9	7	5	4	11
961:	9	13	9	25	30	22	10	42
969:	87	51	18	6	16	17	11	9
977:	7	6	8	10	9	6	4	13
985:	15	11	7	9	12	12	6	14
993:	8	6	12	6	11	12	13	7
1001:	10	11	8	13	8	8	10	10
1009:	11	6	7	5	11	6	11	11
1017:	15	9	6	12	5	9	12	6
1025:	11	7	4	8	2	7	11	11
1033:	10	7	7	10	3	10	9	10
1041:	8	10	6	5	12	6	9	10
1049:	13	5	7	10	14	11	5	10
1057:	8	4	4	9	10	7	11	7
1065:	11	5	9	13	14	11	7	9
1073:	10	6	11	15	11	12	15	11
1081:	14	8	11	14	6	8	8	5
1089:	10	13	10	4	8	9	5	14
1097:	9	10	14	11	6	14	7	4
1105:	12	7	8	12	12	7	14	6
1113:	7	13	15	10	7	13	21	40
1121:	46	17	13	8	11	14	9	5
1129:	20	17	11	7	15	11	14	8
1137:	8	14	8	5	17	12	8	9
1145:	10	17	17	16	9	10	13	8
1153:	13	10	10	13	8	14	14	15
1161:	11	8	10	12	13	11	9	13
1169:	14	12	11	9	13	11	9	11
1177:	10	22	10	3	11	17	11	14
1185:	10	11	11	8	10	13	9	13
1193:	9	17	10	14	13	4	13	15
1201:	14	10	10	10	16	17	17	16
1209:	13	14	17	14	13	14	11	16
1217:	11	13	10	10	11	12	14	13
1225:	8	19	12	18	13	13	19	14

1233:	21	19	13	16	22	25	30	17

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Channel								
1241:	10	11	9	8	7	12	10	13
1249:	11	8	7	7	7	13	12	3
1257:	9	13	11	8	9	9	8	13
1265:	11	9	4	6	5	11	5	7
1273:	8	5	7	6	5	10	8	5
1281:	14	10	11	6	5	6	4	11
1289:	3	10	11	7	9	5	7	5
1297:	8	11	6	11	7	8	5	5
1305:	5	6	4	9	9	4	4	4
1313:	8	9	9	8	4	8	5	6
1321:	5	6	1	7	3	5	2	3
1329:	7	7	2	2	6	5	9	2
1337:	4	7	7	5	7	3	7	4
1345:	2	3	2	5	6	8	1	8
1353:	5	5	4	5	3	4	0	6
1361:	5	3	7	3	4	7	7	6
1369:	8	3	5	2	4	5	5	5
1377:	10	11	6	5	7	4	3	3
1385:	5	3	2	5	4	3	0	7
1393:	4	1	3	6	3	3	2	1
1401:	7	5	4	2	2	8	4	8
1409:	5	5	3	4	3	4	1	4
1417:	2	1	2	2	6	5	4	3
1425:	4	1	3	6	1	4	2	5
1433:	2	2	5	2	3	1	2	5
1441:	1	2	3	0	1	4	8	2
1449:	7	0	2	2	4	1	2	4
1457:	5	19	125	381	498	189	34	13
1465:	16	16	13	1	2	2	3	1
1473:	1	1	0	1	5	1	6	2
1481:	1	3	6	0	4	1	2	1
1489:	3	1	4	1	3	3	8	7
1497:	2	0	1	0	6	2	2	3
1505:	3	1	2	4	5	3	3	2
1513:	6	3	4	2	3	3	3	0
1521:	2	0	3	4	3	3	3	2
1529:	4	2	1	3	4	2	5	0
1537:	0	2	1	2	0	1	0	2
1545:	1	2	2	0	1	2	0	6
1553:	3	3	3	1	2	3	1	3
1561:	1	3	1	3	0	2	0	3
1569:	0	1	4	1	1	0	2	0
1577:	1	1	2	2	6	1	2	3
1585:	3	1	4	1	6	2	1	7
1593:	6	1	5	5	1	2	5	3
1601:	1	1	0	0	5	0	1	1
1609:	0	1	0	1	0	1	2	1
1617:	2	3	2	3	2	1	1	3
1625:	3	1	1	1	3	4	1	1
1633:	0	6	2	1	1	4	4	4
1641:	2	2	0	1	1	3	1	2
1649:	1	0	5	3	2	1	1	1
1657:	3	1	1	2	3	2	2	3

1665:	1	3	3	1	0	2	1	1

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Channel								
1673:	2	1	0	0	3	0	3	4
1681:	2	0	0	2	3	1	1	0
1689:	1	2	0	2	0	3	2	0
1697:	1	1	1	1	0	1	2	1
1705:	0	2	0	0	2	2	2	1
1713:	1	1	2	0	3	1	0	1
1721:	1	1	2	2	3	3	2	2
1729:	3	5	2	2	0	0	0	0
1737:	2	1	2	1	2	1	0	4
1745:	2	2	0	2	0	0	0	1
1753:	0	0	0	2	3	2	2	0
1761:	2	4	11	31	16	6	1	3
1769:	1	2	0	0	0	0	0	1
1777:	3	1	1	1	1	1	3	0
1785:	3	1	0	1	4	0	0	0
1793:	0	1	1	2	0	0	2	0
1801:	1	2	2	0	0	0	1	3
1809:	1	2	1	2	1	2	1	0
1817:	2	0	3	1	1	0	0	1
1825:	2	1	1	0	0	1	1	0
1833:	1	1	0	1	2	4	0	0
1841:	1	0	2	2	1	2	5	2
1849:	2	0	0	1	3	5	0	0
1857:	2	0	1	3	0	0	2	0
1865:	1	1	1	1	1	1	2	0
1873:	2	2	0	2	0	1	3	0
1881:	1	1	2	1	2	2	1	0
1889:	2	3	1	0	1	1	1	0
1897:	2	0	0	3	0	0	1	0
1905:	1	4	2	1	2	2	0	3
1913:	1	1	2	1	1	1	2	1
1921:	0	3	0	1	0	0	0	1
1929:	1	1	0	0	1	2	1	2
1937:	1	0	1	1	0	0	3	1
1945:	1	1	0	3	2	4	1	1
1953:	0	3	1	1	2	2	0	3
1961:	1	2	1	1	2	0	0	1
1969:	0	0	1	0	1	6	1	1
1977:	0	0	1	0	0	0	3	5
1985:	3	2	2	1	3	1	1	1
1993:	0	1	0	0	1	0	0	1
2001:	2	1	0	1	1	1	0	1
2009:	0	0	0	1	3	1	1	3
2017:	1	3	1	0	0	0	0	1
2025:	0	1	2	2	2	1	0	1
2033:	0	0	0	2	0	1	1	0
2041:	2	0	2	1	0	0	2	0
2049:	0	1	1	3	3	1	2	0
2057:	0	0	1	3	4	1	1	4
2065:	2	3	2	1	3	0	0	0
2073:	0	0	1	1	0	1	1	1
2081:	1	1	2	0	1	3	3	0
2089:	0	2	0	1	1	3	2	2

2097:	2	1	1	3	7	5	6	6

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

2529:	0	0	0	1	3	1	0	1

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Channel								
2537:	0	0	1	1	0	0	1	0
2545:	1	0	0	0	1	0	1	0
2553:	0	1	0	0	1	0	0	0
2561:	0	0	0	0	0	0	0	1
2569:	0	0	0	0	4	1	0	0
2577:	0	0	0	0	0	0	1	1
2585:	0	1	1	1	0	0	0	0
2593:	0	0	0	0	0	0	0	0
2601:	0	2	1	0	1	1	0	2
2609:	0	1	7	17	35	46	25	7
2617:	1	2	3	3	1	0	0	0
2625:	1	1	1	0	0	2	0	0
2633:	0	1	0	0	0	0	1	0
2641:	1	0	0	1	0	0	1	0
2649:	0	0	0	0	0	1	1	0
2657:	1	0	0	1	3	2	0	0
2665:	0	0	0	1	0	1	1	0
2673:	0	0	1	0	1	0	0	0
2681:	0	0	1	0	0	1	0	0
2689:	0	0	0	0	0	0	0	0
2697:	1	1	0	0	0	0	0	0
2705:	1	0	0	0	0	0	0	1
2713:	0	0	0	0	1	0	1	0
2721:	0	0	0	1	1	0	0	0
2729:	0	0	0	0	0	1	0	0
2737:	0	1	1	0	0	0	0	1
2745:	0	0	0	0	0	0	0	0
2753:	0	0	0	0	1	1	1	0
2761:	0	0	0	0	0	0	0	0
2769:	1	0	0	0	1	0	0	2
2777:	1	2	0	0	0	0	0	1
2785:	0	1	0	2	0	0	0	0
2793:	0	0	0	0	0	1	0	0
2801:	0	1	0	0	1	0	0	0
2809:	2	0	0	0	0	1	0	0
2817:	0	0	0	0	0	1	0	0
2825:	0	0	0	0	0	0	0	0
2833:	1	0	0	1	0	0	0	0
2841:	1	0	2	0	0	0	0	0
2849:	0	0	1	0	1	0	0	2
2857:	1	0	0	1	0	0	1	0
2865:	0	0	1	0	0	1	1	1
2873:	0	0	0	0	0	0	1	1
2881:	1	0	0	1	1	0	0	0
2889:	0	0	0	1	0	0	0	0
2897:	0	0	0	0	2	0	1	0
2905:	0	0	0	0	0	0	0	0
2913:	0	0	0	0	0	0	0	0
2921:	0	0	0	1	0	0	0	2
2929:	0	1	0	0	0	0	0	0
2937:	0	0	1	0	0	0	0	1
2945:	0	0	0	0	0	1	0	0
2953:	0	0	1	0	1	0	0	0

2961:	0	0	0	0	0	0	0	1

Sample Title: HTC-A08-BKGD01-3036-01

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

3393:	0	0	0	1	0	0	0	0

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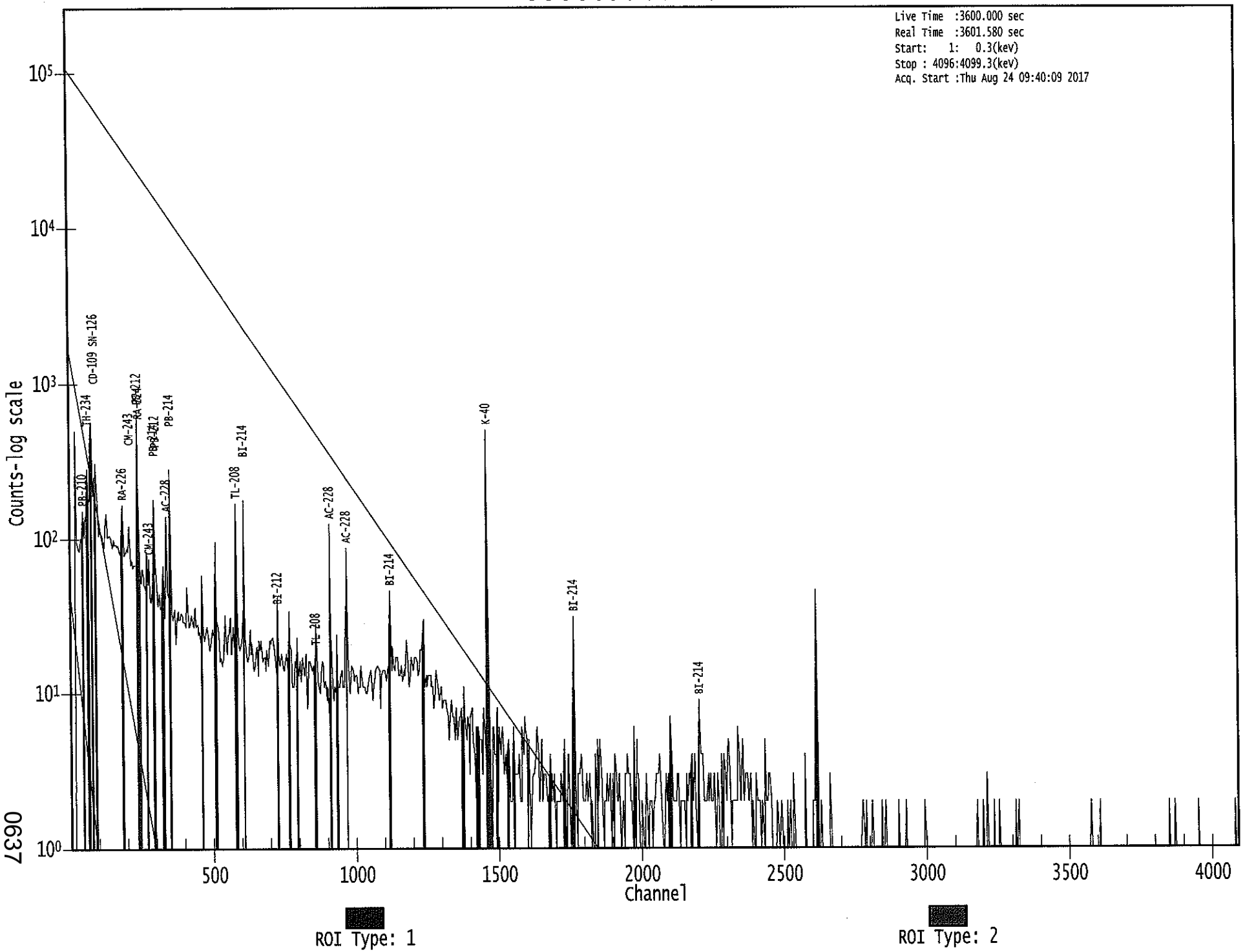
Channel								
3401:	0	0	0	0	1	0	0	0
3409:	0	0	0	1	0	1	0	1
3417:	0	0	0	0	0	0	0	0
3425:	0	0	0	0	0	0	0	0
3433:	0	0	0	1	0	0	0	0
3441:	0	0	0	0	1	0	1	1
3449:	0	0	1	0	0	0	0	0
3457:	0	0	0	1	0	1	0	0
3465:	1	0	0	0	0	0	0	0
3473:	0	0	0	0	0	0	0	0
3481:	0	1	0	0	0	0	1	0
3489:	0	0	0	0	0	1	0	0
3497:	1	0	1	0	0	1	0	0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

3825:	0	0	0	0	0	0	0	0

Sample Title: HTC-A08-BKGD01-3036-01

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

0000055885.CNF



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Apex-Gamma

Analysis Report for 1707091-11
HTC-A08-BKGD01-3642-01

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 1707091-11
Sample Description	: HTC-A08-BKGD01-3642-01
Sample Type	: SOIL
Sample Size	: 6.535E+02 grams
Facility	: Countroom
Sample Taken On	: 5/15/2017 12:56:18PM
Acquisition Started	: 8/24/2017 10:41:39AM
Procedure	: GAS-1602 pCi
Operator	: Administrator
Detector Name	: GE1
Geometry	: GAS-1602
Live Time	: 3600.0 seconds
Real Time	: 3601.6 seconds
Dead Time	: 0.04 %
Peak Locate Threshold	: 2.50
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 19 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 1/14/2017
Efficiency Calibration Used Done On	: 1/14/2017
Efficiency Calibration Description	:
Sample Number	: 55891

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

Analysis Report for 1707091-11

HTC-A08-BKGD01-3642-01

PEAK LOCATE REPORT

Peak Locate Performed on : 8/24/2017 11:41:43AM
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	46.37	46.99	0.0000	0.00
2	74.72	75.31	0.0000	0.00
3	77.15	77.74	0.0000	0.00
4	85.34	85.92	0.0000	0.00
5	88.50	89.08	0.0000	0.00
6	92.68	93.26	0.0000	0.00
7	185.76	186.24	0.0000	0.00
8	209.52	209.97	0.0000	0.00
9	235.07	235.49	0.0000	0.00
10	238.68	239.11	0.0000	0.00
11	241.77	242.19	0.0000	0.00
12	270.04	270.44	0.0000	0.00
13	278.65	279.04	0.0000	0.00
14	295.21	295.58	0.0000	0.00
15	299.96	300.32	0.0000	0.00
16	338.46	338.78	0.0000	0.00
17	351.95	352.26	0.0000	0.00
18	357.33	357.64	0.0000	0.00
19	375.52	375.80	0.0000	0.00
20	463.03	463.23	0.0000	0.00
21	511.44	511.59	0.0000	0.00
22	583.40	583.48	0.0000	0.00
23	605.95	606.00	0.0000	0.00
24	609.58	609.63	0.0000	0.00
25	682.06	682.04	0.0000	0.00
26	697.56	697.52	0.0000	0.00
27	722.06	722.00	0.0000	0.00
28	727.51	727.45	0.0000	0.00
29	769.34	769.23	0.0000	0.00
30	785.25	785.13	0.0000	0.00
31	794.11	793.97	0.0000	0.00
32	861.40	861.20	0.0000	0.00
33	867.41	867.20	0.0000	0.00
34	911.44	911.19	0.0000	0.00
35	969.74	969.43	0.0000	0.00
36	1121.38	1120.92	0.0000	0.00
37	1173.01	1172.49	0.0000	0.00
38	1239.60	1239.02	0.0000	0.00
39	1277.64	1277.02	0.0000	0.00
40	1281.92	1281.30	0.0000	0.00
41	1318.14	1317.48	0.0000	0.00
42	1402.34	1401.60	0.0000	0.00

Analysis Report for 1707091-11

HTC-A08-BKGD01-3642-01

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
43	1408.40	1407.66	0.0000	0.00
44	1461.64	1460.84	0.0000	0.00
45	1508.85	1508.01	0.0000	0.00
46	1538.02	1537.15	0.0000	0.00
47	1586.15	1585.23	0.0000	0.00
48	1589.92	1589.00	0.0000	0.00
49	1610.14	1609.20	0.0000	0.00
50	1622.21	1621.26	0.0000	0.00
51	1628.74	1627.78	0.0000	0.00
52	1631.74	1630.78	0.0000	0.00
53	1677.90	1676.90	0.0000	0.00
54	1729.22	1728.17	0.0000	0.00
55	1732.59	1731.52	0.0000	0.00
56	1741.17	1740.10	0.0000	0.00
57	1744.15	1743.08	0.0000	0.00
58	1753.27	1752.19	0.0000	0.00
59	1765.30	1764.21	0.0000	0.00
60	1847.95	1846.78	0.0000	0.00
61	2052.83	2051.46	0.0000	0.00
62	2086.86	2085.45	0.0000	0.00
63	2105.06	2103.64	0.0000	0.00
64	2205.33	2203.81	0.0000	0.00
65	2239.54	2237.99	0.0000	0.00
66	2258.01	2256.44	0.0000	0.00
67	2352.72	2351.06	0.0000	0.00
68	2615.84	2613.93	0.0000	0.00
69	3082.55	3080.20	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1707091-11

HTC-A08-BKGD01-3642-01

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 8/24/2017 11:41:43AM

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	46.37	43 -	51	46.99	1.88E+02	104.74	1.58E+03	1.92
M	2	74.72	71 -	81	75.31	4.17E+02	102.47	1.66E+03	1.81
m	3	77.15	71 -	81	77.74	7.77E+02	109.16	1.63E+03	1.82
M	4	85.34	83 -	97	85.92	2.89E+02	81.96	1.41E+03	2.43
m	5	88.50	83 -	97	89.08	3.19E+02	108.94	1.81E+03	2.44
m	6	92.68	83 -	97	93.26	3.79E+02	107.11	1.54E+03	2.45
	7	185.76	182 -	190	186.24	1.98E+02	99.10	1.39E+03	2.04
	8	209.52	207 -	213	209.97	6.47E+01	72.87	9.03E+02	1.47
M	9	235.07	233 -	252	235.49	5.79E+01	50.83	5.49E+02	2.38
m	10	238.68	233 -	252	239.11	1.07E+03	82.94	5.20E+02	1.58
m	11	241.77	233 -	252	242.19	3.24E+02	107.31	9.00E+02	2.94
	12	270.04	266 -	273	270.44	9.91E+01	64.50	6.26E+02	1.88
	13	278.65	275 -	284	279.04	1.12E+02	73.84	7.02E+02	3.27
M	14	295.21	292 -	304	295.58	3.28E+02	53.58	3.61E+02	1.83
m	15	299.96	292 -	304	300.32	1.25E+02	66.42	5.04E+02	2.74
	16	338.46	335 -	343	338.78	2.46E+02	64.68	4.96E+02	1.76
M	17	351.95	347 -	360	352.26	5.99E+02	61.51	2.75E+02	1.86
m	18	357.33	347 -	360	357.64	3.68E+01	40.83	2.61E+02	2.10
	19	375.52	374 -	379	375.80	3.55E+01	37.19	2.47E+02	2.48
	20	463.03	460 -	466	463.23	3.65E+01	40.69	2.77E+02	1.50
	21	511.44	508 -	516	511.59	1.41E+02	58.14	4.16E+02	1.57
	22	583.40	579 -	588	583.48	3.26E+02	55.89	2.60E+02	2.05
M	23	605.95	605 -	616	606.00	1.94E+01	13.00	4.46E+01	1.87
m	24	609.58	605 -	616	609.63	3.87E+02	48.75	1.60E+02	1.84
	25	682.06	678 -	685	682.04	3.10E+01	33.65	1.68E+02	3.56
	26	697.56	691 -	703	697.52	5.45E+01	48.06	2.43E+02	8.90
M	27	722.06	721 -	730	722.00	1.68E+01	13.60	4.51E+01	2.81
m	28	727.51	721 -	730	727.45	8.77E+01	36.22	1.77E+02	2.20
	29	769.34	765 -	773	769.23	5.96E+01	37.55	1.81E+02	1.53
	30	785.25	781 -	788	785.13	3.69E+01	30.92	1.32E+02	2.53
	31	794.11	790 -	797	793.97	3.90E+01	34.12	1.68E+02	1.41
M	32	861.40	855 -	872	861.20	6.33E+01	30.21	1.22E+02	2.18
m	33	867.41	855 -	872	867.20	1.69E+01	26.32	9.61E+01	2.18
	34	911.44	907 -	916	911.19	2.33E+02	49.13	2.15E+02	2.17
	35	969.74	966 -	974	969.43	1.09E+02	47.80	2.57E+02	2.02
	36	1121.38	1116 -	1127	1120.92	1.45E+02	45.43	1.83E+02	2.34
	37	1173.01	1169 -	1175	1172.49	2.60E+01	28.52	1.28E+02	2.91
	38	1239.60	1233 -	1245	1239.02	5.28E+01	49.13	2.56E+02	2.34
M	39	1277.64	1275 -	1285	1277.02	1.49E+01	11.68	2.70E+01	3.11
m	40	1281.92	1275 -	1285	1281.30	2.76E+01	24.00	7.20E+01	2.58

Analysis Report for 1707091-11

HTC-A08-BKGD01-3642-01

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
	41	1318.14	1314 -	1320	1317.48	1.81E+01	19.91	5.79E+01	1.97
	42	1402.34	1398 -	1404	1401.60	1.55E+01	15.83	3.30E+01	1.86
	43	1408.40	1405 -	1412	1407.66	1.78E+01	17.78	4.24E+01	1.46
	44	1461.64	1454 -	1467	1460.84	1.32E+03	80.39	1.33E+02	2.22
	45	1508.85	1506 -	1512	1508.01	1.22E+01	12.22	1.95E+01	1.75
	46	1538.02	1532 -	1540	1537.15	1.17E+01	12.69	1.66E+01	3.57
M	47	1586.15	1584 -	1598	1585.23	6.75E+00	6.48	4.36E+00	3.53
m	48	1589.92	1584 -	1598	1589.00	1.46E+01	14.49	2.25E+01	2.22
	49	1610.14	1606 -	1613	1609.20	9.00E+00	11.49	1.60E+01	1.24
	50	1622.21	1618 -	1625	1621.26	1.28E+01	12.00	1.43E+01	2.43
M	51	1628.74	1626 -	1634	1627.78	8.07E+00	4.95	3.00E+00	2.46
m	52	1631.74	1626 -	1634	1630.78	1.99E+01	10.79	7.00E+00	2.46
	53	1677.90	1673 -	1679	1676.90	8.75E+00	8.51	6.50E+00	1.87
M	54	1729.22	1725 -	1734	1728.17	1.81E+01	9.00	4.28E+00	2.74
m	55	1732.59	1725 -	1734	1731.52	9.35E+00	10.77	2.52E+00	2.74
M	56	1741.17	1739 -	1745	1740.10	7.06E+00	0.00	0.00E+00	2.49
m	57	1744.15	1739 -	1745	1743.08	9.46E+00	6.63	0.00E+00	2.49
	58	1753.27	1748 -	1756	1752.19	9.50E+00	9.82	9.00E+00	2.32
	59	1765.30	1757 -	1768	1764.21	7.20E+01	21.91	2.40E+01	2.54
	60	1847.95	1843 -	1850	1846.78	1.20E+01	10.95	1.20E+01	1.72
	61	2052.83	2049 -	2054	2051.46	5.29E+00	6.08	3.43E+00	2.15
	62	2086.86	2082 -	2088	2085.45	7.33E+00	6.95	3.33E+00	1.21
	63	2105.06	2100 -	2109	2103.64	1.30E+01	13.86	2.00E+01	2.92
	64	2205.33	2197 -	2211	2203.81	2.32E+01	17.46	2.16E+01	4.65
	65	2239.54	2234 -	2241	2237.99	1.01E+01	9.38	7.71E+00	2.16
	66	2258.01	2253 -	2259	2256.44	9.00E+00	6.00	0.00E+00	3.50
	67	2352.72	2347 -	2356	2351.06	1.70E+01	8.25	0.00E+00	5.32
	68	2615.84	2609 -	2620	2613.93	1.34E+02	25.06	9.74E+00	2.95
	69	3082.55	3076 -	3082	3080.20	5.00E+00	4.47	0.00E+00	2.75

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 : 8/24/2017 11:41:43AM

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

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level

Analysis Report for 1707091-11

HTC-A08-BKGD01-3642-01

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	1	46.37	43 -	51	1.88E+02	104.74	1.58E+03	8.31E+01
M	2	74.72	71 -	81	4.17E+02	102.47	1.66E+03	6.70E+01
m	3	77.15	71 -	81	7.77E+02	109.16	1.63E+03	6.63E+01
M	4	85.34	83 -	97	2.89E+02	81.96	1.41E+03	6.16E+01
m	5	88.50	83 -	97	3.19E+02	108.94	1.81E+03	6.99E+01
m	6	92.68	83 -	97	3.79E+02	107.11	1.54E+03	6.45E+01
	7	185.76	182 -	190	1.98E+02	99.10	1.39E+03	7.81E+01
	8	209.52	207 -	213	6.47E+01	72.87	9.03E+02	5.84E+01
M	9	235.07	233 -	252	5.79E+01	50.83	5.49E+02	3.85E+01
m	10	238.68	233 -	252	1.07E+03	82.94	5.20E+02	3.75E+01
m	11	241.77	233 -	252	3.24E+02	107.31	9.00E+02	4.93E+01
	12	270.04	266 -	273	9.91E+01	64.50	6.26E+02	5.04E+01
	13	278.65	275 -	284	1.12E+02	73.84	7.02E+02	5.81E+01
M	14	295.21	292 -	304	3.28E+02	53.58	3.61E+02	3.12E+01
m	15	299.96	292 -	304	1.25E+02	66.42	5.04E+02	3.69E+01
	16	338.46	335 -	343	2.46E+02	64.68	4.96E+02	4.65E+01
M	17	351.95	347 -	360	5.99E+02	61.51	2.75E+02	2.73E+01
m	18	357.33	347 -	360	3.68E+01	40.83	2.61E+02	2.66E+01
	19	375.52	374 -	379	3.55E+01	37.19	2.47E+02	2.90E+01
	20	463.03	460 -	466	3.65E+01	40.69	2.77E+02	3.19E+01
	21	511.44	508 -	516	1.41E+02	58.14	4.16E+02	4.36E+01
	22	583.40	579 -	588	3.26E+02	55.89	2.60E+02	3.51E+01
M	23	605.95	605 -	616	1.94E+01	13.00	4.46E+01	1.10E+01
m	24	609.58	605 -	616	3.87E+02	48.75	1.60E+02	2.08E+01
	25	682.06	678 -	685	3.10E+01	33.65	1.68E+02	2.61E+01
	26	697.56	691 -	703	5.45E+01	48.06	2.43E+02	3.76E+01
M	27	722.06	721 -	730	1.68E+01	13.60	4.51E+01	1.10E+01
m	28	727.51	721 -	730	8.77E+01	36.22	1.77E+02	2.18E+01
	29	769.34	765 -	773	5.96E+01	37.55	1.81E+02	2.81E+01
	30	785.25	781 -	788	3.69E+01	30.92	1.32E+02	2.34E+01
	31	794.11	790 -	797	3.90E+01	34.12	1.68E+02	2.61E+01
M	32	861.40	855 -	872	6.33E+01	30.21	1.22E+02	1.82E+01
m	33	867.41	855 -	872	1.69E+01	26.32	9.61E+01	1.61E+01
	34	911.44	907 -	916	2.33E+02	49.13	2.15E+02	3.16E+01
	35	969.74	966 -	974	1.09E+02	47.80	2.57E+02	3.54E+01
	36	1121.38	1116 -	1127	1.45E+02	45.43	1.83E+02	3.16E+01
	37	1173.01	1169 -	1175	2.60E+01	28.52	1.28E+02	2.19E+01
	38	1239.60	1233 -	1245	5.28E+01	49.13	2.56E+02	3.86E+01
M	39	1277.64	1275 -	1285	1.49E+01	11.68	2.70E+01	8.54E+00
m	40	1281.92	1275 -	1285	2.76E+01	24.00	7.20E+01	1.39E+01
	41	1318.14	1314 -	1320	1.81E+01	19.91	5.79E+01	1.48E+01
	42	1402.34	1398 -	1404	1.55E+01	15.83	3.30E+01	1.13E+01
	43	1408.40	1405 -	1412	1.78E+01	17.78	4.24E+01	1.29E+01
	44	1461.64	1454 -	1467	1.32E+03	80.39	1.33E+02	2.84E+01
	45	1508.85	1506 -	1512	1.22E+01	12.22	1.95E+01	8.23E+00
	46	1538.02	1532 -	1540	1.17E+01	12.69	1.66E+01	8.78E+00
M	47	1586.15	1584 -	1598	6.75E+00	6.48	4.36E+00	3.43E+00
m	48	1589.92	1584 -	1598	1.46E+01	14.49	2.25E+01	7.80E+00
	49	1610.14	1606 -	1613	9.00E+00	11.49	1.60E+01	8.05E+00
	50	1622.21	1618 -	1625	1.28E+01	12.00	1.43E+01	7.91E+00
M	51	1628.74	1626 -	1634	8.07E+00	4.95	3.00E+00	2.85E+00

Analysis Report for 1707091-11

HTC-A08-BKGD01-3642-01

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
m	52	1631.74	1626 -	1634	1.99E+01	10.79	7.00E+00	4.35E+00
	53	1677.90	1673 -	1679	8.75E+00	8.51	6.50E+00	5.03E+00
M	54	1729.22	1725 -	1734	1.81E+01	9.00	4.28E+00	3.40E+00
m	55	1732.59	1725 -	1734	9.35E+00	10.77	2.52E+00	2.61E+00
M	56	1741.17	1739 -	1745	7.06E+00	0.00	0.00E+00	0.00E+00
m	57	1744.15	1739 -	1745	9.46E+00	6.63	0.00E+00	0.00E+00
	58	1753.27	1748 -	1756	9.50E+00	9.82	9.00E+00	6.29E+00
	59	1765.30	1757 -	1768	7.20E+01	21.91	2.40E+01	1.14E+01
	60	1847.95	1843 -	1850	1.20E+01	10.95	1.20E+01	6.97E+00
	61	2052.83	2049 -	2054	5.29E+00	6.08	3.43E+00	3.27E+00
	62	2086.86	2082 -	2088	7.33E+00	6.95	3.33E+00	3.58E+00
	63	2105.06	2100 -	2109	1.30E+01	13.86	2.00E+01	9.73E+00
	64	2205.33	2197 -	2211	2.32E+01	17.46	2.16E+01	1.20E+01
	65	2239.54	2234 -	2241	1.01E+01	9.38	7.71E+00	5.66E+00
	66	2258.01	2253 -	2259	9.00E+00	6.00	0.00E+00	0.00E+00
	67	2352.72	2347 -	2356	1.70E+01	8.25	0.00E+00	0.00E+00
	68	2615.84	2609 -	2620	1.34E+02	25.06	9.74E+00	7.86E+00
	69	3082.55	3076 -	3082	5.00E+00	4.47	0.00E+00	0.00E+00

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

PEAK WITH NID REPORT

Peak Analysis Performed on : 8/24/2017 11:41:43AM

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	46.37	43 -	51	46.99	1.88E+02	104.74	1.58E+03	PB-210
M	2	74.72	71 -	81	75.31	4.17E+02	102.47	1.66E+03	AM-243
m	3	77.15	71 -	81	77.74	7.77E+02	109.16	1.63E+03	.....
M	4	85.34	83 -	97	85.92	2.89E+02	81.96	1.41E+03	.....
m	5	88.50	83 -	97	89.08	3.19E+02	108.94	1.81E+03	LU-176
									CD-109
									SN-126

Analysis Report for 1707091-11

HTC-A08-BKGD01-3642-01

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
m	6	92.68	83 -	97	93.26	3.79E+02	107.11	1.54E+03	GA-67
	7	185.76	182 -	190	186.24	1.98E+02	99.10	1.39E+03	RA-226
	8	209.52	207 -	213	209.97	6.47E+01	72.87	9.03E+02	CM-243
									GA-67
M	9	235.07	233 -	252	235.49	5.79E+01	50.83	5.49E+02	NB-95M
									TH-227
m	10	238.68	233 -	252	239.11	1.07E+03	82.94	5.20E+02	PB-212
m	11	241.77	233 -	252	242.19	3.24E+02	107.31	9.00E+02	RA-224
	12	270.04	266 -	273	270.44	9.91E+01	64.50	6.26E+02	.....
	13	278.65	275 -	284	279.04	1.12E+02	73.84	7.02E+02	HG-203
									SE-75
M	14	295.21	292 -	304	295.58	3.28E+02	53.58	3.61E+02	PB-214
m	15	299.96	292 -	304	300.32	1.25E+02	66.42	5.04E+02	BI-210M
									PB-212
									GA-67
	16	338.46	335 -	343	338.78	2.46E+02	64.68	4.96E+02	AC-228
M	17	351.95	347 -	360	352.26	5.99E+02	61.51	2.75E+02	PB-214
m	18	357.33	347 -	360	357.64	3.68E+01	40.83	2.61E+02	.....
	19	375.52	374 -	379	375.80	3.55E+01	37.19	2.47E+02	TL-204
	20	463.03	460 -	466	463.23	3.65E+01	40.69	2.77E+02	SB-125
	21	511.44	508 -	516	511.59	1.41E+02	58.14	4.16E+02	.....
	22	583.40	579 -	588	583.48	3.26E+02	55.89	2.60E+02	TL-208
M	23	605.95	605 -	616	606.00	1.94E+01	13.00	4.46E+01	.....
m	24	609.58	605 -	616	609.63	3.87E+02	48.75	1.60E+02	BI-214
	25	682.06	678 -	685	682.04	3.10E+01	33.65	1.68E+02	.....
	26	697.56	691 -	703	697.52	5.45E+01	48.06	2.43E+02	.....
M	27	722.06	721 -	730	722.00	1.68E+01	13.60	4.51E+01	SB-124
									I-131
									AG-108M
m	28	727.51	721 -	730	727.45	8.77E+01	36.22	1.77E+02	BI-212
	29	769.34	765 -	773	769.23	5.96E+01	37.55	1.81E+02	.....
	30	785.25	781 -	788	785.13	3.69E+01	30.92	1.32E+02	.....
	31	794.11	790 -	797	793.97	3.90E+01	34.12	1.68E+02	.....
M	32	861.40	855 -	872	861.20	6.33E+01	30.21	1.22E+02	.....
m	33	867.41	855 -	872	867.20	1.69E+01	26.32	9.61E+01	.....
	34	911.44	907 -	916	911.19	2.33E+02	49.13	2.15E+02	TL-204
									AC-228
	35	969.74	966 -	974	969.43	1.09E+02	47.80	2.57E+02	AC-228
	36	1121.38	1116 -	1127	1120.92	1.45E+02	45.43	1.83E+02	TA-182
									SC-46
	37	1173.01	1169 -	1175	1172.49	2.60E+01	28.52	1.28E+02	CO-60
	38	1239.60	1233 -	1245	1239.02	5.28E+01	49.13	2.56E+02	.....
M	39	1277.64	1275 -	1285	1277.02	1.49E+01	11.68	2.70E+01	.....
m	40	1281.92	1275 -	1285	1281.30	2.76E+01	24.00	7.20E+01	.....
	41	1318.14	1314 -	1320	1317.48	1.81E+01	19.91	5.79E+01	.....
	42	1402.34	1398 -	1404	1401.60	1.55E+01	15.83	3.30E+01	.....
	43	1408.40	1405 -	1412	1407.66	1.78E+01	17.78	4.24E+01	EU-152
	44	1461.64	1454 -	1467	1460.84	1.32E+03	80.39	1.33E+02	K-40
	45	1508.85	1506 -	1512	1508.01	1.22E+01	12.22	1.95E+01	.....
	46	1538.02	1532 -	1540	1537.15	1.17E+01	12.69	1.66E+01	.....
M	47	1586.15	1584 -	1598	1585.23	6.75E+00	6.48	4.36E+00	.....
m	48	1589.92	1584 -	1598	1589.00	1.46E+01	14.49	2.25E+01	.....
	49	1610.14	1606 -	1613	1609.20	9.00E+00	11.49	1.60E+01	.....
	50	1622.21	1618 -	1625	1621.26	1.28E+01	12.00	1.43E+01	.....

Analysis Report for 1707091-11

HTC-A08-BKGD01-3642-01

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
M	51	1628.74	1626 -	1634	1627.78	8.07E+00	4.95	3.00E+00	.....
m	52	1631.74	1626 -	1634	1630.78	1.99E+01	10.79	7.00E+00	.....
	53	1677.90	1673 -	1679	1676.90	8.75E+00	8.51	6.50E+00	I-135
M	54	1729.22	1725 -	1734	1728.17	1.81E+01	9.00	4.28E+00	.....
m	55	1732.59	1725 -	1734	1731.52	9.35E+00	10.77	2.52E+00	.....
M	56	1741.17	1739 -	1745	1740.10	7.06E+00	0.00	0.00E+00	.....
m	57	1744.15	1739 -	1745	1743.08	9.46E+00	6.63	0.00E+00	.....
	58	1753.27	1748 -	1756	1752.19	9.50E+00	9.82	9.00E+00	.....
	59	1765.30	1757 -	1768	1764.21	7.20E+01	21.91	2.40E+01	BI-214
	60	1847.95	1843 -	1850	1846.78	1.20E+01	10.95	1.20E+01	.....
	61	2052.83	2049 -	2054	2051.46	5.29E+00	6.08	3.43E+00	.....
	62	2086.86	2082 -	2088	2085.45	7.33E+00	6.95	3.33E+00	.....
	63	2105.06	2100 -	2109	2103.64	1.30E+01	13.86	2.00E+01	.....
	64	2205.33	2197 -	2211	2203.81	2.32E+01	17.46	2.16E+01	.....
	65	2239.54	2234 -	2241	2237.99	1.01E+01	9.38	7.71E+00	.....
	66	2258.01	2253 -	2259	2256.44	9.00E+00	6.00	0.00E+00	.....
	67	2352.72	2347 -	2356	2351.06	1.70E+01	8.25	0.00E+00	.....
	68	2615.84	2609 -	2620	2613.93	1.34E+02	25.06	9.74E+00	.....
	69	3082.55	3076 -	3082	3080.20	5.00E+00	4.47	0.00E+00	.....

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

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 8/24/2017 11:41:43AM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	46.37	1.88E+02	104.74	2.46E-02	2.22E-03
M	2	74.72	4.17E+02	102.47	2.75E-02	2.38E-03
m	3	77.15	7.77E+02	109.16	2.75E-02	2.40E-03
M	4	85.34	2.89E+02	81.96	2.75E-02	2.49E-03
m	5	88.50	3.19E+02	108.94	2.74E-02	2.51E-03
m	6	92.68	3.79E+02	107.11	2.73E-02	2.45E-03
	7	185.76	1.98E+02	99.10	2.17E-02	1.68E-03
	8	209.52	6.47E+01	72.87	2.04E-02	1.61E-03
M	9	235.07	5.79E+01	50.83	1.90E-02	1.54E-03
m	10	238.68	1.07E+03	82.94	1.89E-02	1.53E-03
m	11	241.77	3.24E+02	107.31	1.87E-02	1.52E-03

Analysis Report for 1707091-11

HTC-A08-BKGD01-3642-01

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	12	270.04	9.91E+01	64.50	1.74E-02	1.43E-03
	13	278.65	1.12E+02	73.84	1.71E-02	1.41E-03
M	14	295.21	3.28E+02	53.58	1.64E-02	1.37E-03
m	15	299.96	1.25E+02	66.42	1.63E-02	1.36E-03
	16	338.46	2.46E+02	64.68	1.50E-02	1.27E-03
M	17	351.95	5.99E+02	61.51	1.45E-02	1.24E-03
m	18	357.33	3.68E+01	40.83	1.44E-02	1.23E-03
	19	375.52	3.55E+01	37.19	1.39E-02	1.18E-03
	20	463.03	3.65E+01	40.69	1.19E-02	1.10E-03
	21	511.44	1.41E+02	58.14	1.10E-02	1.07E-03
	22	583.40	3.26E+02	55.89	9.96E-03	1.02E-03
M	23	605.95	1.94E+01	13.00	9.67E-03	1.01E-03
m	24	609.58	3.87E+02	48.75	9.63E-03	1.01E-03
	25	682.06	3.10E+01	33.65	8.83E-03	9.40E-04
	26	697.56	5.45E+01	48.06	8.68E-03	9.15E-04
M	27	722.06	1.68E+01	13.60	8.46E-03	8.76E-04
m	28	727.51	8.77E+01	36.22	8.41E-03	8.67E-04
	29	769.34	5.96E+01	37.55	8.06E-03	8.01E-04
	30	785.25	3.69E+01	30.92	7.93E-03	7.76E-04
	31	794.11	3.90E+01	34.12	7.86E-03	7.62E-04
M	32	861.40	6.33E+01	30.21	7.39E-03	6.55E-04
m	33	867.41	1.69E+01	26.32	7.35E-03	6.45E-04
	34	911.44	2.33E+02	49.13	7.08E-03	5.91E-04
	35	969.74	1.09E+02	47.80	6.76E-03	5.69E-04
	36	1121.38	1.45E+02	45.43	6.07E-03	5.11E-04
	37	1173.01	2.60E+01	28.52	5.87E-03	4.91E-04
	38	1239.60	5.28E+01	49.13	5.64E-03	4.76E-04
M	39	1277.64	1.49E+01	11.68	5.52E-03	4.67E-04
m	40	1281.92	2.76E+01	24.00	5.50E-03	4.66E-04
	41	1318.14	1.81E+01	19.91	5.39E-03	4.58E-04
	42	1402.34	1.55E+01	15.83	5.16E-03	4.38E-04
	43	1408.40	1.78E+01	17.78	5.14E-03	4.37E-04
	44	1461.64	1.32E+03	80.39	5.00E-03	4.25E-04
	45	1508.85	1.22E+01	12.22	4.89E-03	4.14E-04
	46	1538.02	1.17E+01	12.69	4.82E-03	4.07E-04
M	47	1586.15	6.75E+00	6.48	4.72E-03	3.96E-04
m	48	1589.92	1.46E+01	14.49	4.71E-03	3.95E-04
	49	1610.14	9.00E+00	11.49	4.67E-03	3.90E-04
	50	1622.21	1.28E+01	12.00	4.64E-03	3.87E-04
M	51	1628.74	8.07E+00	4.95	4.63E-03	3.86E-04
m	52	1631.74	1.99E+01	10.79	4.63E-03	3.85E-04
	53	1677.90	8.75E+00	8.51	4.53E-03	3.74E-04
M	54	1729.22	1.81E+01	9.00	4.44E-03	3.63E-04
m	55	1732.59	9.35E+00	10.77	4.43E-03	3.62E-04
M	56	1741.17	7.06E+00	0.00	4.42E-03	3.60E-04
m	57	1744.15	9.46E+00	6.63	4.41E-03	3.59E-04
	58	1753.27	9.50E+00	9.82	4.39E-03	3.57E-04
	59	1765.30	7.20E+01	21.91	4.37E-03	3.54E-04
	60	1847.95	1.20E+01	10.95	4.23E-03	3.38E-04
	61	2052.83	5.29E+00	6.08	3.93E-03	3.38E-04
	62	2086.86	7.33E+00	6.95	3.88E-03	3.38E-04
	63	2105.06	1.30E+01	13.86	3.86E-03	3.38E-04
	64	2205.33	2.32E+01	17.46	3.74E-03	3.38E-04

Analysis Report for 1707091-11

HTC-A08-BKGD01-3642-01

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
65	2239.54	1.01E+01	9.38	3.69E-03	3.38E-04
66	2258.01	9.00E+00	6.00	3.67E-03	3.38E-04
67	2352.72	1.70E+01	8.25	3.57E-03	3.38E-04
68	2615.84	1.34E+02	25.06	3.30E-03	3.38E-04
69	3082.55	5.00E+00	4.47	2.93E-03	3.38E-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 : 8/24/2017 11:41:43AM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000055573.CNF

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	1	46.37	1.88E+02	104.74	3.67E+01	8.40E+00	1.51E+02	1.05E+02
M	2	74.72	4.17E+02	102.47			4.17E+02	1.02E+02
m	3	77.15	7.77E+02	109.16	7.20E+00	1.47E+00	7.70E+02	1.09E+02
M	4	85.34	2.89E+02	81.96	7.20E+00	1.33E+00	2.82E+02	8.20E+01
m	5	88.50	3.19E+02	108.94			3.19E+02	1.09E+02
m	6	92.68	3.79E+02	107.11	1.38E+02	1.72E+01	2.41E+02	1.08E+02
	7	185.76	1.98E+02	99.10	5.22E+01	7.59E+00	1.46E+02	9.94E+01
	8	209.52	6.47E+01	72.87			6.47E+01	7.29E+01
M	9	235.07	5.79E+01	50.83			5.79E+01	5.08E+01
m	10	238.68	1.07E+03	82.94	2.13E+01	6.33E+00	1.05E+03	8.32E+01
m	11	241.77	3.24E+02	107.31			3.24E+02	1.07E+02
	12	270.04	9.91E+01	64.50	1.23E+00	4.98E+00	9.79E+01	6.47E+01
	13	278.65	1.12E+02	73.84			1.12E+02	7.38E+01
M	14	295.21	3.28E+02	53.58			3.28E+02	5.36E+01
m	15	299.96	1.25E+02	66.42			1.25E+02	6.64E+01
	16	338.46	2.46E+02	64.68			2.46E+02	6.47E+01
M	17	351.95	5.99E+02	61.51	5.79E+00	4.49E+00	5.93E+02	6.17E+01
m	18	357.33	3.68E+01	40.83			3.68E+01	4.08E+01
	19	375.52	3.55E+01	37.19			3.55E+01	3.72E+01
	20	463.03	3.65E+01	40.69			3.65E+01	4.07E+01
	21	511.44	1.41E+02	58.14	7.28E+01	5.30E+00	6.84E+01	5.84E+01
	22	583.40	3.26E+02	55.89	2.72E+00	3.05E+00	3.23E+02	5.60E+01
M	23	605.95	1.94E+01	13.00			1.94E+01	1.30E+01
m	24	609.58	3.87E+02	48.75	6.35E+00	4.02E+00	3.81E+02	4.89E+01
	25	682.06	3.10E+01	33.65			3.10E+01	3.36E+01

Analysis Report for 1707091-11

HTC-A08-BKGD01-3642-01

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	26	697.56	5.45E+01	48.06			5.45E+01	4.81E+01
M	27	722.06	1.68E+01	13.60			1.68E+01	1.36E+01
m	28	727.51	8.77E+01	36.22			8.77E+01	3.62E+01
	29	769.34	5.96E+01	37.55			5.96E+01	3.75E+01
	30	785.25	3.69E+01	30.92			3.69E+01	3.09E+01
	31	794.11	3.90E+01	34.12			3.90E+01	3.41E+01
M	32	861.40	6.33E+01	30.21			6.33E+01	3.02E+01
m	33	867.41	1.69E+01	26.32			1.69E+01	2.63E+01
	34	911.44	2.33E+02	49.13	5.31E+00	3.00E+00	2.28E+02	4.92E+01
	35	969.74	1.09E+02	47.80			1.09E+02	4.78E+01
	36	1121.38	1.45E+02	45.43			1.45E+02	4.54E+01
	37	1173.01	2.60E+01	28.52			2.60E+01	2.85E+01
	38	1239.60	5.28E+01	49.13			5.28E+01	4.91E+01
M	39	1277.64	1.49E+01	11.68			1.49E+01	1.17E+01
m	40	1281.92	2.76E+01	24.00			2.76E+01	2.40E+01
	41	1318.14	1.81E+01	19.91			1.81E+01	1.99E+01
	42	1402.34	1.55E+01	15.83			1.55E+01	1.58E+01
	43	1408.40	1.78E+01	17.78			1.78E+01	1.78E+01
	44	1461.64	1.32E+03	80.39	8.09E+00	2.23E+00	1.31E+03	8.04E+01
	45	1508.85	1.22E+01	12.22			1.22E+01	1.22E+01
	46	1538.02	1.17E+01	12.69			1.17E+01	1.27E+01
M	47	1586.15	6.75E+00	6.48			6.75E+00	6.48E+00
m	48	1589.92	1.46E+01	14.49			1.46E+01	1.45E+01
	49	1610.14	9.00E+00	11.49			9.00E+00	1.15E+01
	50	1622.21	1.28E+01	12.00			1.28E+01	1.20E+01
M	51	1628.74	8.07E+00	4.95			8.07E+00	4.95E+00
m	52	1631.74	1.99E+01	10.79			1.99E+01	1.08E+01
	53	1677.90	8.75E+00	8.51			8.75E+00	8.51E+00
M	54	1729.22	1.81E+01	9.00			1.81E+01	9.00E+00
m	55	1732.59	9.35E+00	10.77			9.35E+00	1.08E+01
M	56	1741.17	7.06E+00	0.00			7.06E+00	0.00E+00
m	57	1744.15	9.46E+00	6.63			9.46E+00	6.63E+00
	58	1753.27	9.50E+00	9.82			9.50E+00	9.82E+00
	59	1765.30	7.20E+01	21.91			7.20E+01	2.19E+01
	60	1847.95	1.20E+01	10.95	1.22E+00	1.50E+00	1.08E+01	1.11E+01
	61	2052.83	5.29E+00	6.08			5.29E+00	6.08E+00
	62	2086.86	7.33E+00	6.95			7.33E+00	6.95E+00
	63	2105.06	1.30E+01	13.86			1.30E+01	1.39E+01
	64	2205.33	2.32E+01	17.46			2.32E+01	1.75E+01
	65	2239.54	1.01E+01	9.38			1.01E+01	9.38E+00
	66	2258.01	9.00E+00	6.00	1.04E+00	1.04E+00	7.96E+00	6.09E+00
	67	2352.72	1.70E+01	8.25			1.70E+01	8.25E+00
	68	2615.84	1.34E+02	25.06	5.63E+00	1.38E+00	1.29E+02	2.51E+01
	69	3082.55	5.00E+00	4.47			5.00E+00	4.47E+00

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

Analysis Report for 1707091-11

HTC-A08-BKGD01-3642-01

AREA CORRECTION REPORT
REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 8/24/2017 11:41:43AM

Ref. Peak Energy : 0.00 Reference Date :
Peak Ratio : 0.00 Uncertainty : 0.00
Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000055573.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	46.37	1.88E+02	104.74	3.67E+01	8.40E+00	1.51E+02	1.05E+02
M	2	74.72	4.17E+02	102.47			4.17E+02	1.02E+02
m	3	77.15	7.77E+02	109.16	7.20E+00	1.47E+00	7.70E+02	1.09E+02
M	4	85.34	2.89E+02	81.96	7.20E+00	1.33E+00	2.82E+02	8.20E+01
m	5	88.50	3.19E+02	108.94			3.19E+02	1.09E+02
m	6	92.68	3.79E+02	107.11	1.38E+02	1.72E+01	2.41E+02	1.08E+02
	7	185.76	1.98E+02	99.10	5.22E+01	7.59E+00	1.46E+02	9.94E+01
	8	209.52	6.47E+01	72.87			6.47E+01	7.29E+01
M	9	235.07	5.79E+01	50.83			5.79E+01	5.08E+01
m	10	238.68	1.07E+03	82.94	2.13E+01	6.33E+00	1.05E+03	8.32E+01
m	11	241.77	3.24E+02	107.31			3.24E+02	1.07E+02
	12	270.04	9.91E+01	64.50	1.23E+00	4.98E+00	9.79E+01	6.47E+01
	13	278.65	1.12E+02	73.84			1.12E+02	7.38E+01
M	14	295.21	3.28E+02	53.58			3.28E+02	5.36E+01
m	15	299.96	1.25E+02	66.42			1.25E+02	6.64E+01
	16	338.46	2.46E+02	64.68			2.46E+02	6.47E+01
M	17	351.95	5.99E+02	61.51	5.79E+00	4.49E+00	5.93E+02	6.17E+01
m	18	357.33	3.68E+01	40.83			3.68E+01	4.08E+01
	19	375.52	3.55E+01	37.19			3.55E+01	3.72E+01
	20	463.03	3.65E+01	40.69			3.65E+01	4.07E+01
	21	511.44	1.41E+02	58.14	7.28E+01	5.30E+00	6.84E+01	5.84E+01
	22	583.40	3.26E+02	55.89	2.72E+00	3.05E+00	3.23E+02	5.60E+01
M	23	605.95	1.94E+01	13.00			1.94E+01	1.30E+01
m	24	609.58	3.87E+02	48.75	6.35E+00	4.02E+00	3.81E+02	4.89E+01
	25	682.06	3.10E+01	33.65			3.10E+01	3.36E+01
	26	697.56	5.45E+01	48.06			5.45E+01	4.81E+01
M	27	722.06	1.68E+01	13.60			1.68E+01	1.36E+01
m	28	727.51	8.77E+01	36.22			8.77E+01	3.62E+01
	29	769.34	5.96E+01	37.55			5.96E+01	3.75E+01
	30	785.25	3.69E+01	30.92			3.69E+01	3.09E+01
	31	794.11	3.90E+01	34.12			3.90E+01	3.41E+01
M	32	861.40	6.33E+01	30.21			6.33E+01	3.02E+01
m	33	867.41	1.69E+01	26.32			1.69E+01	2.63E+01
	34	911.44	2.33E+02	49.13	5.31E+00	3.00E+00	2.28E+02	4.92E+01
	35	969.74	1.09E+02	47.80			1.09E+02	4.78E+01
	36	1121.38	1.45E+02	45.43			1.45E+02	4.54E+01
	37	1173.01	2.60E+01	28.52			2.60E+01	2.85E+01
	38	1239.60	5.28E+01	49.13			5.28E+01	4.91E+01
M	39	1277.64	1.49E+01	11.68			1.49E+01	1.17E+01
m	40	1281.92	2.76E+01	24.00			2.76E+01	2.40E+01
	41	1318.14	1.81E+01	19.91			1.81E+01	1.99E+01

Analysis Report for 1707091-11

HTC-A08-BKGD01-3642-01

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	42	1402.34	1.55E+01	15.83			1.55E+01	1.58E+01
	43	1408.40	1.78E+01	17.78			1.78E+01	1.78E+01
	44	1461.64	1.32E+03	80.39	8.09E+00	2.23E+00	1.31E+03	8.04E+01
	45	1508.85	1.22E+01	12.22			1.22E+01	1.22E+01
	46	1538.02	1.17E+01	12.69			1.17E+01	1.27E+01
M	47	1586.15	6.75E+00	6.48			6.75E+00	6.48E+00
m	48	1589.92	1.46E+01	14.49			1.46E+01	1.45E+01
	49	1610.14	9.00E+00	11.49			9.00E+00	1.15E+01
	50	1622.21	1.28E+01	12.00			1.28E+01	1.20E+01
M	51	1628.74	8.07E+00	4.95			8.07E+00	4.95E+00
m	52	1631.74	1.99E+01	10.79			1.99E+01	1.08E+01
	53	1677.90	8.75E+00	8.51			8.75E+00	8.51E+00
M	54	1729.22	1.81E+01	9.00			1.81E+01	9.00E+00
m	55	1732.59	9.35E+00	10.77			9.35E+00	1.08E+01
M	56	1741.17	7.06E+00	0.00			7.06E+00	0.00E+00
m	57	1744.15	9.46E+00	6.63			9.46E+00	6.63E+00
	58	1753.27	9.50E+00	9.82			9.50E+00	9.82E+00
	59	1765.30	7.20E+01	21.91			7.20E+01	2.19E+01
	60	1847.95	1.20E+01	10.95	1.22E+00	1.50E+00	1.08E+01	1.11E+01
	61	2052.83	5.29E+00	6.08			5.29E+00	6.08E+00
	62	2086.86	7.33E+00	6.95			7.33E+00	6.95E+00
	63	2105.06	1.30E+01	13.86			1.30E+01	1.39E+01
	64	2205.33	2.32E+01	17.46			2.32E+01	1.75E+01
	65	2239.54	1.01E+01	9.38			1.01E+01	9.38E+00
	66	2258.01	9.00E+00	6.00	1.04E+00	1.04E+00	7.96E+00	6.09E+00
	67	2352.72	1.70E+01	8.25			1.70E+01	8.25E+00
	68	2615.84	1.34E+02	25.06	5.63E+00	1.38E+00	1.29E+02	2.51E+01
	69	3082.55	5.00E+00	4.47			5.00E+00	4.47E+00

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

NUCLIDE IDENTIFICATION REPORT

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

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.896	1460.81	*	10.67	2.81E+01	3.01E+00
CD-109	0.966	88.03	*	3.72	4.19E+00	1.50E+00
SN-126	0.872	87.57	*	37.00	3.62E-01	1.28E-01

Analysis Report for 1707091-11

HTC-A08-BKGD01-3642-01

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
HG-203	0.932	279.19	*	77.30	4.37E-01	2.91E-01
TL-204	0.470	374.74	*	94.11	3.28E-02	3.45E-02
		899.15		99.16		
		911.74	*	91.10	4.27E-01	9.88E-02
PB-210	0.997	46.50	*	4.25	1.67E+00	1.17E+00
BI-212	0.749	727.17	*	11.80	1.01E+00	4.32E-01
		1620.62		2.75		
PB-212	0.999	238.63	*	44.60	1.43E+00	1.62E-01
		300.09	*	3.41	2.59E+00	1.39E+00
BI-214	0.639	609.31	*	46.30	9.82E-01	1.62E-01
		1120.29		15.10		
		1764.49	*	15.80	1.20E+00	3.77E-01
		2204.22		4.98		
PB-214	1.000	295.21	*	19.19	1.20E+00	2.19E-01
		351.92	*	37.19	1.26E+00	1.69E-01
RA-224	0.905	240.98	*	3.95	5.03E+00	1.72E+00
RA-226	0.968	186.21	*	3.28	2.35E+00	4.59E+00
AC-228	0.970	338.32	*	11.40	1.66E+00	4.58E-01
		911.07	*	27.70	1.34E+00	3.09E-01
		969.11	*	16.60	1.11E+00	4.98E-01
AM-243	1.000	74.67	*	66.00	2.64E-01	6.88E-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 : 8/24/2017 11:41:43AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
m	3	77.15	2.13807E-01	7.09		
M	4	85.34	7.82400E-02	14.55		
m	6	92.68	6.69930E-02	22.49	Sum	
	8	209.52	1.79597E-02	56.35	Tol.	GA-67 CM-243
M	9	235.07	1.60711E-02	43.93	Tol.	NB-95M TH-227
	12	270.04	2.71957E-02	33.04		

Analysis Report for 1707091-11

HTC-A08-BKGD01-3642-01

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
m	18	357.33	1.02252E-02	55.46		
	20	463.03	1.01278E-02	55.80	Sum	
	21	511.44	1.89865E-02	42.71		
	22	583.40	8.97988E-02	8.66	Tol.	TL-208
M	23	605.95	5.37519E-03	33.59		
	25	682.06	8.61111E-03	54.27		
	26	697.56	1.51326E-02	44.11	Sum	
M	27	722.06	4.67944E-03	40.37	Tol.	SB-124 I-131
	29	769.34	1.65648E-02	31.48		
	30	785.25	1.02616E-02	41.85		
	31	794.11	1.08333E-02	43.74		
M	32	861.40	1.75777E-02	23.87		
m	33	867.41	4.70367E-03	77.70		
	36	1121.38	4.04096E-02	15.61	Tol.	SC-46 TA-182
	37	1173.01	7.22994E-03	54.78		
	38	1239.60	1.46754E-02	46.50		
M	39	1277.64	4.12941E-03	39.30		
m	40	1281.92	7.67268E-03	43.44		
	41	1318.14	5.01773E-03	55.10		
	42	1402.34	4.30556E-03	51.06		
	43	1408.40	4.95014E-03	49.88	Tol.	EU-152
	45	1508.85	3.39646E-03	49.96	Sum	
	46	1538.02	3.25000E-03	54.22		
M	47	1586.15	1.87628E-03	47.97		
m	48	1589.92	4.05442E-03	49.64		
	49	1610.14	2.50000E-03	63.83		
	50	1622.21	3.56944E-03	46.69		
M	51	1628.74	2.24110E-03	30.68		
m	52	1631.74	5.51999E-03	27.16		
	53	1677.90	2.43056E-03	48.66	Tol.	I-135
M	54	1729.22	5.02471E-03	24.88		
m	55	1732.59	2.59784E-03	57.58		
M	56	1741.17	1.96024E-03	0.00	Sum	
m	57	1744.15	2.62654E-03	35.08		
	58	1753.27	2.63889E-03	51.70		
	60	1847.95	2.99322E-03	51.30		
	61	2052.83	1.46825E-03	57.54		
	62	2086.86	2.03704E-03	47.36		
	63	2105.06	3.61111E-03	53.29		
	64	2205.33	6.44199E-03	37.64		
	65	2239.54	2.81746E-03	46.24		
	66	2258.01	2.21140E-03	38.24		
	67	2352.72	4.72222E-03	24.25		
	68	2615.84	3.56957E-02	9.77		
	69	3082.55	1.38889E-03	44.72		

Analysis Report for 1707091-11

HTC-A08-BKGD01-3642-01

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	0.89	1460.81	*	10.67	2.81E+01	3.01E+00
CD-109	0.96	88.03	*	3.72	4.19E+00	1.50E+00
SN-126	0.87	87.57	*	37.00	3.62E-01	1.28E-01
HG-203	0.93	279.19	*	77.30	4.37E-01	2.91E-01
TL-204	0.47	374.74	*	94.11	3.28E-02	3.45E-02
		899.15		99.16		
		911.74	*	91.10	4.27E-01	9.88E-02
PB-210	0.99	46.50	*	4.25	1.67E+00	1.17E+00
BI-212	0.74	727.17	*	11.80	1.01E+00	4.32E-01
		1620.62		2.75		
PB-212	0.99	238.63	*	44.60	1.43E+00	1.62E-01
		300.09	*	3.41	2.59E+00	1.39E+00
BI-214	0.63	609.31	*	46.30	9.82E-01	1.62E-01
		1120.29		15.10		
		1764.49	*	15.80	1.20E+00	3.77E-01
		2204.22		4.98		
PB-214	1.00	295.21	*	19.19	1.20E+00	2.19E-01
		351.92	*	37.19	1.26E+00	1.69E-01
RA-224	0.90	240.98	*	3.95	5.03E+00	1.72E+00
RA-226	0.96	186.21	*	3.28	2.35E+00	4.59E+00
AC-228	0.97	338.32	*	11.40	1.66E+00	4.58E-01
		911.07	*	27.70	1.34E+00	3.09E-01
		969.11	*	16.60	1.11E+00	4.98E-01
AM-243	1.00	74.67	*	66.00	2.64E-01	6.88E-02

Analysis Report for 1707091-11

HTC-A08-BKGD01-3642-01

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

INTERFERENCE CORRECTED REPORT

	Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
	K-40	0.896	2.81E+01	3.01E+00	
?	CD-109	0.966	4.19E+00	1.50E+00	
?	SN-126	0.872	3.62E-01	1.28E-01	
	HG-203	0.932	4.37E-01	2.91E-01	
	TL-204	0.470	2.99E-02	3.36E-02	
	PB-210	0.997	1.67E+00	1.17E+00	
	BI-212	0.749	1.01E+00	4.32E-01	
	PB-212	0.999	1.45E+00	1.61E-01	
	BI-214	0.639	1.02E+00	1.49E-01	
	PB-214	1.000	1.24E+00	1.34E-01	
	RA-224	0.905	5.03E+00	1.72E+00	
	RA-226	0.968	2.35E+00	4.59E+00	
	AC-228	0.970	1.32E+00	2.35E-01	
	AM-243	1.000	2.64E-01	6.88E-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 1707091-11

HTC-A08-BKGD01-3642-01

UNIDENTIFIED PEAKS

Peak Locate Performed on : 8/24/2017 11:41:43AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
m	3	77.15	2.13807E-01	7.09		
M	4	85.34	7.82400E-02	14.55		
m	6	92.68	6.69930E-02	22.49	Sum	
	8	209.52	1.79597E-02	56.35	Tol.	GA-67
						CM-243
M	9	235.07	1.60711E-02	43.93	Tol.	NB-95M
						TH-227
	12	270.04	2.71957E-02	33.04		
m	18	357.33	1.02252E-02	55.46		
	20	463.03	1.01278E-02	55.80	Sum	
	21	511.44	1.89865E-02	42.71		
	22	583.40	8.97988E-02	8.66	Tol.	TL-208
M	23	605.95	5.37519E-03	33.59		
	25	682.06	8.61111E-03	54.27		
	26	697.56	1.51326E-02	44.11	Sum	
M	27	722.06	4.67944E-03	40.37	Tol.	SB-124
						I-131
	29	769.34	1.65648E-02	31.48		
	30	785.25	1.02616E-02	41.85		
	31	794.11	1.08333E-02	43.74		
M	32	861.40	1.75777E-02	23.87		
m	33	867.41	4.70367E-03	77.70		
	36	1121.38	4.04096E-02	15.61	Tol.	SC-46
						TA-182
	37	1173.01	7.22994E-03	54.78		
	38	1239.60	1.46754E-02	46.50		
M	39	1277.64	4.12941E-03	39.30		
m	40	1281.92	7.67268E-03	43.44		
	41	1318.14	5.01773E-03	55.10		
	42	1402.34	4.30556E-03	51.06		
	43	1408.40	4.95014E-03	49.88	Tol.	EU-152
	45	1508.85	3.39646E-03	49.96	Sum	
	46	1538.02	3.25000E-03	54.22		
M	47	1586.15	1.87628E-03	47.97		

Analysis Report for 1707091-11

HTC-A08-BKGD01-3642-01

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
m	48	1589.92	4.05442E-03	49.64		
	49	1610.14	2.50000E-03	63.83		
	50	1622.21	3.56944E-03	46.69		
M	51	1628.74	2.24110E-03	30.68		
m	52	1631.74	5.51999E-03	27.16		
	53	1677.90	2.43056E-03	48.66	Tol.	I-135
M	54	1729.22	5.02471E-03	24.88		
m	55	1732.59	2.59784E-03	57.58		
M	56	1741.17	1.96024E-03	0.00	Sum	
m	57	1744.15	2.62654E-03	35.08		
	58	1753.27	2.63889E-03	51.70		
	60	1847.95	2.99322E-03	51.30		
	61	2052.83	1.46825E-03	57.54		
	62	2086.86	2.03704E-03	47.36		
	63	2105.06	3.61111E-03	53.29		
	64	2205.33	6.44199E-03	37.64		
	65	2239.54	2.81746E-03	46.24		
	66	2258.01	2.21140E-03	38.24		
	67	2352.72	4.72222E-03	24.25		
	68	2615.84	3.56957E-02	9.77		
	69	3082.55	1.38889E-03	44.72		

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

NUCLIDE MDA REPORT

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

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	BE-7	477.59		10.42	4.17E-01	2.00E+00	2.00E+00
+	NA-22	1274.54		99.94	-5.81E-03	8.05E-02	8.05E-02
+	@ NA-24	1368.53		99.99	1.00E+26	1.00E+26	1.00E+26
	@	2754.09		99.86	1.00E+26		1.00E+26
+	AL-26	1808.65		99.76	-2.44E-03	4.86E-02	4.86E-02
+	K-40	1460.81	*	10.67	2.81E+01	1.30E+00	1.30E+00

Analysis Report for 1707091-11

HTC-A08-BKGD01-3642-01

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	@ AR-41	1293.64	99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88	94.40	4.48E-03	6.13E-02	6.13E-02
		78.34	96.00	1.97E-01		7.99E-02
+	SC-46	889.25	99.98	-5.76E-02	1.38E-01	1.38E-01
		1120.51	99.99	4.10E-01		2.83E-01
+	V-48	983.52	99.98	4.25E-01	5.40E+00	5.40E+00
		1312.10	97.50	2.64E+00		6.14E+00
+	CR-51	320.08	9.83	-1.47E+00	6.87E+00	6.87E+00
+	MN-54	834.83	99.97	1.96E-02	8.61E-02	8.61E-02
+	CO-56	846.75	99.96	1.49E-02	1.71E-01	1.71E-01
		1037.75	14.03	1.20E-01		1.19E+00
		1238.25	67.00	2.49E-01		3.87E-01
		1771.40	15.51	-7.22E-02		8.04E-01
		2598.48	16.90	1.66E-02		7.02E-01
+	CO-57	122.06	85.51	5.95E-03	6.93E-02	6.93E-02
		136.48	10.60	-3.89E-01		5.74E-01
+	CO-58	810.76	99.40	-6.02E-03	1.61E-01	1.61E-01
+	FE-59	1099.22	56.50	-2.61E-01	5.99E-01	5.99E-01
		1291.56	43.20	-1.86E-01		7.82E-01
+	CO-60	1173.22	100.00	1.73E-02	7.24E-02	9.20E-02
		1332.49	100.00	-2.63E-02		7.24E-02
+	ZN-65	1115.52	50.75	2.47E-02	2.26E-01	2.26E-01
+	GA-67	93.31	35.70	6.15E+08	3.54E+08	3.54E+08
		208.95	2.24	4.66E+09		5.06E+09
		300.22	16.00	-1.59E+09		7.95E+08
+	SE-75	121.11	16.70	8.12E-02	1.42E-01	4.85E-01
		136.00	59.20	-9.63E-02		1.42E-01
		264.65	59.80	-3.29E-03		1.62E-01
		279.53	25.20	3.83E-01		4.23E-01
		400.65	11.40	4.71E-01		8.97E-01
+	RB-82	776.52	13.00	-4.09E-01	7.52E+00	7.52E+00
+	RB-83	520.41	46.00	-1.50E-01	2.71E-01	2.71E-01
		529.64	30.30	-2.13E-01		4.24E-01
		552.65	16.40	-2.29E-01		7.55E-01
+	KR-85	513.99	0.43	2.44E+01	1.93E+01	1.93E+01
+	SR-85	513.99	99.27	3.08E-01	2.44E-01	2.44E-01
+	Y-88	898.02	93.40	4.86E-03	8.31E-02	1.31E-01
		1836.01	99.38	1.21E-02		8.31E-02
+	MO-93	263.06	56.72	-4.58E-02	5.06E-02	9.44E-02
		684.67	99.68	1.56E-02		6.89E-02
		1477.11	99.08	8.54E-03		5.06E-02
+	NB-93M	16.57	9.43	-1.03E-01	4.81E-01	4.81E-01
+	NB-94	702.63	100.00	-1.45E-03	6.07E-02	6.33E-02
		871.10	100.00	1.72E-02		6.07E-02
+	NB-95	765.79	99.81	6.54E-02	5.62E-01	5.62E-01
+	NB-95M	235.69	25.00	-5.72E+08	6.48E+07	6.48E+07
+	ZR-95	724.18	43.70	-1.28E-01	3.29E-01	5.48E-01

Analysis Report for 1707091-11

HTC-A08-BKGD01-3642-01

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	ZR-95	756.72		55.30	7.54E-03	3.29E-01	3.29E-01
+	MO-99	181.06		6.20	-7.12E+08	5.76E+10	8.80E+10
		739.58		12.80	1.51E+09		5.76E+10
		778.00		4.50	-8.54E+09		1.56E+11
+	RU-103	497.08		89.00	1.32E-01	3.99E-01	3.99E-01
+	RU-106	621.84		9.80	-1.63E-01	7.15E-01	7.15E-01
+	AG-108M	433.93		89.90	-3.68E-03	6.24E-02	6.24E-02
		614.37		90.40	-4.16E-01		8.45E-02
		722.95		90.50	-1.75E-01		7.62E-02
+	CD-109	88.03	*	3.72	4.19E+00	3.87E+00	3.87E+00
+	AG-110M	657.75		93.14	1.98E-02	8.63E-02	8.63E-02
		677.61		10.53	1.46E-01		7.62E-01
		706.67		16.46	-9.22E-02		5.19E-01
		763.93		21.98	6.77E-02		3.67E-01
		884.67		71.63	6.26E-02		1.24E-01
		1384.27		23.94	3.58E-02		3.39E-01
+	CD-113M	263.70		0.02	-4.84E+01	2.35E+02	2.35E+02
+	SN-113	255.12		1.93	1.71E-01	1.58E-01	4.46E+00
		391.69		64.90	3.21E-02		1.58E-01
+	TE123M	159.00		84.10	3.49E-02	1.03E-01	1.03E-01
+	SB-124	602.71		97.87	-1.70E-02	1.89E-01	1.89E-01
		645.85		7.26	4.96E-01		2.64E+00
		722.78		11.10	-4.56E+00		1.98E+00
		1691.02		49.00	1.83E-02		2.90E-01
+	I-125	35.49		6.49	-6.60E-01	2.55E+00	2.55E+00
+	SB-125	176.33		6.89	-9.53E-02	2.13E-01	7.28E-01
		427.89		29.33	3.27E-03		2.13E-01
		463.38		10.35	6.05E-01		6.73E-01
		600.56		17.80	-6.43E-02		3.51E-01
		635.90		11.32	2.90E-01		5.90E-01
+	SB-126	414.70		83.30	-1.47E+01	1.69E+01	1.84E+01
		666.33		99.60	-1.71E-01		1.69E+01
		695.00		99.60	4.27E+00		1.82E+01
		720.50		53.80	-6.15E+00		3.55E+01
+	SN-126	87.57	*	37.00	3.62E-01	3.34E-01	3.34E-01
+	SB-127	473.00		25.00	8.20E+05	1.47E+07	1.78E+07
		685.20		35.70	3.34E+06		1.47E+07
		783.80		14.70	2.94E+07		3.72E+07
+	I-129	29.78		57.00	-7.45E-02	9.59E-02	9.59E-02
		33.60		13.20	5.46E-02		3.99E-01
		39.58		7.52	-1.01E-01		6.59E-01
+	I-131	284.30		6.05	-2.28E+03	3.85E+02	5.18E+03
		364.48		81.20	5.95E+01		3.85E+02
		636.97		7.26	1.86E+03		5.19E+03
		722.89		1.80	-5.29E+04		2.30E+04
+	TE-132	49.72		13.10	-1.04E+09	1.18E+08	7.91E+08
		228.16		88.00	2.50E+07		1.18E+08
+	BA-133	81.00		33.00	-6.81E-01	1.34E-01	1.69E-01
		302.84		17.80	5.54E-02		3.52E-01

Analysis Report for 1707091-11

HTC-A08-BKGD01-3642-01

		Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
		BA-133	356.01	60.00	-4.04E-02	1.34E-01	1.34E-01
+	@	I-133	529.87	86.30	1.00E+26	1.00E+26	1.00E+26
+		XE-133	81.00	38.00	-3.62E+05	9.00E+04	9.00E+04
+		CS-134	563.23	8.38	8.26E-02	7.24E-02	7.80E-01
			569.32	15.43	3.05E-03		4.18E-01
			604.70	97.60	-3.33E-03		7.24E-02
			795.84	85.40	-9.87E-03		9.30E-02
			801.93	8.73	1.54E-01		8.10E-01
+		CS-135	268.24	16.00	4.75E-01	3.80E-01	3.80E-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	1.37E+01	1.23E+01	1.32E+02
			163.89	4.61	2.05E+01		2.15E+02
			176.55	13.56	-9.20E+00		7.03E+01
			273.65	12.66	-2.59E+01		9.71E+01
			340.57	48.50	6.68E+01		3.20E+01
			818.50	99.70	2.72E+00		1.23E+01
			1048.07	79.60	5.62E+00		1.90E+01
			1235.34	19.70	-3.08E+01		1.01E+02
+		CS-137	661.65	85.12	-3.68E-02	6.85E-02	6.85E-02
+		LA-138	788.74	34.00	-3.53E-02	8.42E-02	1.98E-01
			1435.80	66.00	-9.99E-03		8.42E-02
+		CE-139	165.85	80.35	6.04E-03	1.01E-01	1.01E-01
+		BA-140	162.64	6.70	9.57E+00	5.94E+01	1.70E+02
			304.84	4.50	1.07E+02		2.86E+02
			423.70	3.20	-7.81E+01		4.27E+02
			437.55	2.00	-1.80E+02		6.42E+02
			537.32	25.00	2.23E+01		5.94E+01
+		LA-140	328.77	20.50	7.67E+01	1.58E+01	7.20E+01
			487.03	45.50	1.73E+01		3.01E+01
			815.85	23.50	1.28E+01		6.27E+01
			1596.49	95.49	4.68E+00		1.58E+01
+		CE-141	145.44	48.40	-6.95E-02	8.76E-01	8.76E-01
+	@	CE-143	57.36	11.80	1.00E+26	1.00E+26	1.00E+26
	@		293.26	42.00	1.00E+26		1.00E+26
	@		664.55	5.20	1.00E+26		1.00E+26
+		CE-144	133.54	10.80	1.15E-01	5.90E-01	5.90E-01
+		PM-144	476.78	42.00	1.15E-02	7.60E-02	1.63E-01
			618.01	98.60	-3.54E-03		7.60E-02
			696.49	99.49	1.77E-02		8.11E-02
+		PM-145	36.85	21.70	3.15E-03	1.30E-01	2.38E-01
			37.36	39.70	-1.56E-02		1.30E-01
			42.30	15.10	-3.95E-02		3.25E-01
			72.40	2.31	-4.46E+00		2.92E+00
+		PM-146	453.90	39.94	1.87E-02	1.44E-01	1.44E-01
			735.90	14.01	8.33E-02		5.15E-01
			747.13	13.10	3.84E-02		5.11E-01
+		ND-147	91.11	28.90	2.41E+02	1.34E+02	1.34E+02

Analysis Report for 1707091-11

HTC-A08-BKGD01-3642-01

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	ND-147	531.02	13.10	-1.63E+01	1.34E+02	2.64E+02
+	PM-149	285.90	3.10	-1.80E+13	9.38E+13	9.38E+13
+	EU-152	121.78	20.50	3.74E-02	2.24E-01	2.24E-01
		244.69	5.40	-5.36E-01		1.08E+00
		344.27	19.13	2.76E-02		2.84E-01
		778.89	9.20	-1.65E-01		6.99E-01
		964.01	10.40	1.45E-01		8.31E-01
		1085.78	7.22	-2.03E-01		1.10E+00
		1112.02	9.60	3.41E-01		8.55E-01
		1407.95	14.94	-1.90E-02		4.40E-01
+	GD-153	97.43	31.30	6.03E-02	2.02E-01	2.02E-01
		103.18	22.20	5.17E-02		2.94E-01
+	EU-154	123.07	40.50	-1.06E-02	1.15E-01	1.15E-01
		723.30	19.70	-8.22E-01		3.57E-01
		873.19	11.50	1.09E-01		5.01E-01
		996.32	10.30	-3.65E-01		6.77E-01
		1004.76	17.90	2.07E-01		4.54E-01
		1274.45	35.50	-1.55E-02		2.15E-01
+	EU-155	86.50	30.90	1.43E-01	2.14E-01	2.14E-01
		105.30	20.70	1.16E-01		2.46E-01
+	EU-156	811.77	10.40	1.49E+01	5.87E+01	5.87E+01
		1153.47	7.20	5.80E+01		1.27E+02
		1230.71	8.90	-2.51E+01		1.04E+02
+	HO-166M	184.41	72.60	1.51E-01	8.41E-02	8.41E-02
		280.45	29.60	7.12E-02		1.95E-01
		410.94	11.10	1.59E-01		5.22E-01
		711.69	54.10	-5.71E-02		1.20E-01
+	TM-171	66.72	0.14	-7.22E+01	4.53E+01	4.53E+01
+	HF-172	67.35	5.31	8.80E-02	4.50E-01	1.21E+00
		125.81	11.30	-6.74E-01		4.50E-01
+	LU-172	181.53	20.60	-6.63E+01	3.69E+03	8.20E+03
		900.72	29.81	-5.57E+03		7.27E+03
		1093.66	62.50	-1.71E+03		3.69E+03
+	LU-173	100.72	5.24	3.43E-01	3.31E-01	1.05E+00
		272.11	21.20	-7.12E-03		3.31E-01
+	HF-175	343.40	84.00	1.68E-02	1.78E-01	1.78E-01
+	LU-176	88.34	13.30	2.17E-01	5.59E-02	4.94E-01
		201.83	86.00	-2.07E-02		5.69E-02
		306.78	94.00	-4.01E-03		5.59E-02
+	HF-181	133.02	41.70	1.22E-01	3.43E-01	6.21E-01
		345.85	17.20	1.58E-01		1.61E+00
		482.03	82.80	-1.25E-01		3.43E-01
+	TA-182	67.75	41.20	1.89E-02	2.58E-01	2.58E-01
		1121.30	34.90	9.00E-01		6.54E-01
		1189.05	16.23	1.63E-01		9.71E-01
		1221.41	26.98	-8.77E-02		6.71E-01
		1231.02	11.44	-3.60E-01		1.49E+00
+	IR-192	308.46	29.68	1.58E-01	3.26E-01	4.78E-01
		468.07	48.10	9.93E-02		3.26E-01

Analysis Report for 1707091-11

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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	4.37E-01	4.65E-01	4.65E-01
+	TL-204	374.74	*	94.11	3.28E-02	5.61E-02	5.61E-02
		899.15		99.16	-4.63E-02		6.60E-02
		911.74	*	91.10	4.27E-01		1.25E-01
+	BI-207	569.67		97.72	-2.30E-02	5.95E-02	5.95E-02
		1063.62		74.90	1.93E-02		9.40E-02
+	TL-208	583.14		30.22	1.24E+00	3.74E-01	3.74E-01
		860.37		4.48	2.00E+00		1.90E+00
		2614.66		35.85	1.21E+00		5.52E-01
+	BI-210M	262.00		45.00	-3.51E-02	1.19E-01	1.19E-01
		300.00		23.00	-7.46E-01		2.83E-01
+	PB-210	46.50	*	4.25	1.67E+00	1.89E+00	1.89E+00
+	PB-211	404.84		2.90	-4.36E-01	1.95E+00	1.95E+00
		831.96		2.90	-1.75E-01		2.26E+00
+	BI-212	727.17	*	11.80	1.01E+00	7.88E-01	7.88E-01
		1620.62		2.75	1.35E+00		2.20E+00
+	PB-212	238.63	*	44.60	1.43E+00	3.35E-01	3.35E-01
		300.09	*	3.41	2.59E+00		2.87E+00
+	BI-214	609.31	*	46.30	9.82E-01	2.09E-01	2.09E-01
		1120.29		15.10	1.18E+00		8.14E-01
		1764.49	*	15.80	1.20E+00		4.24E-01
		2204.22		4.98	1.43E+00		1.74E+00
+	PB-214	295.21	*	19.19	1.20E+00	2.54E-01	4.95E-01
		351.92	*	37.19	1.26E+00		2.54E-01
+	RN-219	401.80		6.50	5.57E-01	8.90E-01	8.90E-01
+	RA-223	323.87		3.88	-1.46E+00	1.48E+00	1.48E+00
+	RA-224	240.98	*	3.95	5.03E+00	3.87E+00	3.87E+00
+	RA-225	40.00		31.00	-2.23E+00	1.81E+01	1.81E+01
+	RA-226	186.21	*	3.28	2.35E+00	2.60E+00	2.60E+00
+	TH-227	50.10		8.40	4.39E-03	5.41E-01	5.71E-01
		236.00		11.50	-4.78E+00		5.41E-01
		256.20		6.30	6.57E-02		8.73E-01
+	AC-228	338.32	*	11.40	1.66E+00	3.90E-01	6.45E-01
		911.07	*	27.70	1.34E+00		3.90E-01
		969.11	*	16.60	1.11E+00		7.52E-01
+	TH-230	48.44		16.90	1.79E-01	3.13E-01	3.13E-01
		62.85		4.60	5.83E-01		1.31E+00
		67.67		0.37	1.14E+00		1.56E+01
+	PA-231	283.67		1.60	-4.63E-01	2.67E+00	3.31E+00
		302.67		2.30	4.21E-01		2.67E+00
+	TH-231	25.64		14.70	-3.05E+00	4.82E-01	4.82E-01
		84.21		6.40	-3.62E-01		9.31E-01
+	PA-233	311.98		38.60	5.03E-01	1.91E+00	1.91E+00
+	PA-234	131.20		20.40	6.51E-02	2.50E-01	2.50E-01
		733.99		8.80	8.71E-02		7.88E-01
		946.00		12.00	-6.41E-02		5.86E-01
+	PA-234M	1001.03		0.92	5.75E+00	8.91E+00	8.91E+00

Analysis Report for 1707091-11

HTC-A08-BKGD01-3642-01

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	TH-234	63.29		3.80	1.75E+00	1.61E+00	1.61E+00
+	U-235	143.76		10.50	-8.56E-02	4.58E-01	4.58E-01
		163.35		4.70	9.84E-02		1.04E+00
		205.31		4.70	3.43E-01		1.09E+00
+	NP-237	86.50		12.60	3.37E-01	5.05E-01	5.05E-01
+	NP-239	106.10		22.70	4.35E+11	1.70E+12	1.70E+12
		228.18		10.70	7.75E+11		3.65E+12
		277.60		14.10	2.70E+12		3.39E+12
+	AM-241	59.54		35.90	-1.60E-01	1.51E-01	1.51E-01
+	AM-243	74.67	*	66.00	2.64E-01	1.61E-01	1.61E-01
+	CM-243	209.75		3.29	1.29E+00	4.32E-01	1.64E+00
		228.14		10.60	9.89E-02		4.66E-01
		277.60		14.00	3.44E-01		4.32E-01

+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction
? = 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	2.00E+00	2.00E+00	4.17E-01	9.55E-01
	NA-22	1274.54		99.94	8.05E-02	8.05E-02	-5.81E-03	3.72E-02
@	NA-24	1368.53		99.99	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		2754.09		99.86	1.00E+26		1.00E+26	1.00E+20
	AL-26	1808.65		99.76	4.86E-02	4.86E-02	-2.44E-03	2.07E-02
+	K-40	1460.81	*	10.67	1.30E+00	1.30E+00	2.81E+01	6.22E-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	6.13E-02	6.13E-02	4.48E-03	3.01E-02
		78.34		96.00	7.99E-02		1.97E-01	3.93E-02

Analysis Report for 1707091-11

HTC-A08-BKGD01-3642-01

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
SC-46	889.25	99.98	1.38E-01	1.38E-01	-5.76E-02	6.39E-02
	1120.51	99.99	2.83E-01		4.10E-01	1.36E-01
V-48	983.52	99.98	5.40E+00	5.40E+00	4.25E-01	2.51E+00
	1312.10	97.50	6.14E+00		2.64E+00	2.83E+00
CR-51	320.08	9.83	6.87E+00	6.87E+00	-1.47E+00	3.31E+00
MN-54	834.83	99.97	8.61E-02	8.61E-02	1.96E-02	4.05E-02
CO-56	846.75	99.96	1.71E-01	1.71E-01	1.49E-02	8.05E-02
	1037.75	14.03	1.19E+00		1.20E-01	5.53E-01
	1238.25	67.00	3.87E-01		2.49E-01	1.83E-01
	1771.40	15.51	8.04E-01		-7.22E-02	3.46E-01
	2598.48	16.90	7.02E-01		1.66E-02	2.84E-01
CO-57	122.06	85.51	6.93E-02	6.93E-02	5.95E-03	3.37E-02
	136.48	10.60	5.74E-01		-3.89E-01	2.79E-01
CO-58	810.76	99.40	1.61E-01	1.61E-01	-6.02E-03	7.52E-02
FE-59	1099.22	56.50	5.99E-01	5.99E-01	-2.61E-01	2.78E-01
	1291.56	43.20	7.82E-01		-1.86E-01	3.60E-01
CO-60	1173.22	100.00	9.20E-02	7.24E-02	1.73E-02	4.33E-02
	1332.49	100.00	7.24E-02		-2.63E-02	3.32E-02
ZN-65	1115.52	50.75	2.26E-01	2.26E-01	2.47E-02	1.06E-01
GA-67	93.31	35.70	3.54E+08	3.54E+08	6.15E+08	1.74E+08
	208.95	2.24	5.06E+09		4.66E+09	2.46E+09
	300.22	16.00	7.95E+08		-1.59E+09	3.85E+08
SE-75	121.11	16.70	4.85E-01	1.42E-01	8.12E-02	2.36E-01
	136.00	59.20	1.42E-01		-9.63E-02	6.92E-02
	264.65	59.80	1.62E-01		-3.29E-03	7.84E-02
	279.53	25.20	4.23E-01		3.83E-01	2.05E-01
	400.65	11.40	8.97E-01		4.71E-01	4.30E-01
RB-82	776.52	13.00	7.52E+00	7.52E+00	-4.09E-01	3.53E+00
RB-83	520.41	46.00	2.71E-01	2.71E-01	-1.50E-01	1.28E-01
	529.64	30.30	4.24E-01		-2.13E-01	2.01E-01
	552.65	16.40	7.55E-01		-2.29E-01	3.57E-01
KR-85	513.99	0.43	1.93E+01	1.93E+01	2.44E+01	9.32E+00
SR-85	513.99	99.27	2.44E-01	2.44E-01	3.08E-01	1.18E-01
Y-88	898.02	93.40	1.31E-01	8.31E-02	4.86E-03	6.11E-02
	1836.01	99.38	8.31E-02		1.21E-02	3.45E-02
MO-93	263.06	56.72	9.44E-02	5.06E-02	-4.58E-02	4.56E-02
	684.67	99.68	6.89E-02		1.56E-02	3.26E-02
	1477.11	99.08	5.06E-02		8.54E-03	2.21E-02
NB-93M	16.57	9.43	4.81E-01	4.81E-01	-1.03E-01	2.25E-01
NB-94	702.63	100.00	6.33E-02	6.07E-02	-1.45E-03	2.98E-02
	871.10	100.00	6.07E-02		1.72E-02	2.82E-02
NB-95	765.79	99.81	5.62E-01	5.62E-01	6.54E-02	2.67E-01
NB-95M	235.69	25.00	6.48E+07	6.48E+07	-5.72E+08	3.16E+07
ZR-95	724.18	43.70	5.48E-01	3.29E-01	-1.28E-01	2.61E-01
	756.72	55.30	3.29E-01		7.54E-03	1.54E-01
MO-99	181.06	6.20	8.80E+10	5.76E+10	-7.12E+08	4.28E+10
	739.58	12.80	5.76E+10		1.51E+09	2.72E+10
	778.00	4.50	1.56E+11		-8.54E+09	7.32E+10
RU-103	497.08	89.00	3.99E-01	3.99E-01	1.32E-01	1.90E-01
RU-106	621.84	9.80	7.15E-01	7.15E-01	-1.63E-01	3.37E-01
AG-108M	433.93	89.90	6.24E-02	6.24E-02	-3.68E-03	2.98E-02
	614.37	90.40	8.45E-02		-4.16E-01	4.04E-02
	722.95	90.50	7.62E-02		-1.75E-01	3.60E-02

Analysis Report for 1707091-11

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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	3.87E+00	3.87E+00	4.19E+00	1.92E+00
	AG-110M	657.75		93.14	8.63E-02	8.63E-02	1.98E-02	4.07E-02
		677.61		10.53	7.62E-01		1.46E-01	3.59E-01
		706.67		16.46	5.19E-01		-9.22E-02	2.45E-01
		763.93		21.98	3.67E-01		6.77E-02	1.72E-01
		884.67		71.63	1.24E-01		6.26E-02	5.82E-02
		1384.27		23.94	3.39E-01		3.58E-02	1.53E-01
	CD-113M	263.70		0.02	2.35E+02	2.35E+02	-4.84E+01	1.14E+02
	SN-113	255.12		1.93	4.46E+00	1.58E-01	1.71E-01	2.15E+00
		391.69		64.90	1.58E-01		3.21E-02	7.56E-02
	TE123M	159.00		84.10	1.03E-01	1.03E-01	3.49E-02	4.99E-02
	SB-124	602.71		97.87	1.89E-01	1.89E-01	-1.70E-02	8.94E-02
		645.85		7.26	2.64E+00		4.96E-01	1.25E+00
		722.78		11.10	1.98E+00		-4.56E+00	9.38E-01
		1691.02		49.00	2.90E-01		1.83E-02	1.22E-01
	I-125	35.49		6.49	2.55E+00	2.55E+00	-6.60E-01	1.24E+00
	SB-125	176.33		6.89	7.28E-01	2.13E-01	-9.53E-02	3.53E-01
		427.89		29.33	2.13E-01		3.27E-03	1.02E-01
		463.38		10.35	6.73E-01		6.05E-01	3.23E-01
		600.56		17.80	3.51E-01		-6.43E-02	1.66E-01
		635.90		11.32	5.90E-01		2.90E-01	2.79E-01
	SB-126	414.70		83.30	1.84E+01	1.69E+01	-1.47E+01	8.79E+00
		666.33		99.60	1.69E+01		-1.71E-01	7.98E+00
		695.00		99.60	1.82E+01		4.27E+00	8.60E+00
		720.50		53.80	3.55E+01		-6.15E+00	1.68E+01
+	SN-126	87.57	*	37.00	3.34E-01	3.34E-01	3.62E-01	1.66E-01
	SB-127	473.00		25.00	1.78E+07	1.47E+07	8.20E+05	8.49E+06
		685.20		35.70	1.47E+07		3.34E+06	6.98E+06
		783.80		14.70	3.72E+07		2.94E+07	1.76E+07
	I-129	29.78		57.00	9.59E-02	9.59E-02	-7.45E-02	4.65E-02
		33.60		13.20	3.99E-01		5.46E-02	1.94E-01
		39.58		7.52	6.59E-01		-1.01E-01	3.20E-01
	I-131	284.30		6.05	5.18E+03	3.85E+02	-2.28E+03	2.50E+03
		364.48		81.20	3.85E+02		5.95E+01	1.85E+02
		636.97		7.26	5.19E+03		1.86E+03	2.46E+03
		722.89		1.80	2.30E+04		-5.29E+04	1.09E+04
	TE-132	49.72		13.10	7.91E+08	1.18E+08	-1.04E+09	3.86E+08
		228.16		88.00	1.18E+08		2.50E+07	5.69E+07
	BA-133	81.00		33.00	1.69E-01	1.34E-01	-6.81E-01	8.29E-02
		302.84		17.80	3.52E-01		5.54E-02	1.70E-01
		356.01		60.00	1.34E-01		-4.04E-02	6.52E-02
@	I-133	529.87		86.30	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	XE-133	81.00		38.00	9.00E+04	9.00E+04	-3.62E+05	4.41E+04
	CS-134	563.23		8.38	7.80E-01	7.24E-02	8.26E-02	3.70E-01
		569.32		15.43	4.18E-01		3.05E-03	1.98E-01
		604.70		97.60	7.24E-02		-3.33E-03	3.44E-02
		795.84		85.40	9.30E-02		-9.87E-03	4.40E-02
		801.93		8.73	8.10E-01		1.54E-01	3.80E-01
	CS-135	268.24		16.00	3.80E-01	3.80E-01	4.75E-01	1.85E-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	1.32E+02	1.23E+01	1.37E+01	6.43E+01

Analysis Report for 1707091-11

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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	2.15E+02	1.23E+01	2.05E+01	1.05E+02
	176.55	13.56	7.03E+01		-9.20E+00	3.41E+01
	273.65	12.66	9.71E+01		-2.59E+01	4.71E+01
	340.57	48.50	3.20E+01		6.68E+01	1.56E+01
	818.50	99.70	1.23E+01		2.72E+00	5.72E+00
	1048.07	79.60	1.90E+01		5.62E+00	8.90E+00
	1235.34	19.70	1.01E+02		-3.08E+01	4.79E+01
CS-137	661.65	85.12	6.85E-02	6.85E-02	-3.68E-02	3.22E-02
LA-138	788.74	34.00	1.98E-01	8.42E-02	-3.53E-02	9.33E-02
	1435.80	66.00	8.42E-02		-9.99E-03	3.75E-02
CE-139	165.85	80.35	1.01E-01	1.01E-01	6.04E-03	4.91E-02
BA-140	162.64	6.70	1.70E+02	5.94E+01	9.57E+00	8.27E+01
	304.84	4.50	2.86E+02		1.07E+02	1.38E+02
	423.70	3.20	4.27E+02		-7.81E+01	2.04E+02
	437.55	2.00	6.42E+02		-1.80E+02	3.06E+02
	537.32	25.00	5.94E+01		2.23E+01	2.83E+01
LA-140	328.77	20.50	7.20E+01	1.58E+01	7.67E+01	3.48E+01
	487.03	45.50	3.01E+01		1.73E+01	1.43E+01
	815.85	23.50	6.27E+01		1.28E+01	2.93E+01
	1596.49	95.49	1.58E+01		4.68E+00	7.07E+00
CE-141	145.44	48.40	8.76E-01	8.76E-01	-6.95E-02	4.27E-01
@ CE-143	57.36	11.80	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	293.26	42.00	1.00E+26		1.00E+26	1.00E+20
@	664.55	5.20	1.00E+26		1.00E+26	1.00E+20
CE-144	133.54	10.80	5.90E-01	5.90E-01	1.15E-01	2.87E-01
PM-144	476.78	42.00	1.63E-01	7.60E-02	1.15E-02	7.75E-02
	618.01	98.60	7.60E-02		-3.54E-03	3.60E-02
	696.49	99.49	8.11E-02		1.77E-02	3.84E-02
PM-145	36.85	21.70	2.38E-01	1.30E-01	3.15E-03	1.16E-01
	37.36	39.70	1.30E-01		-1.56E-02	6.30E-02
	42.30	15.10	3.25E-01		-3.95E-02	1.58E-01
	72.40	2.31	2.92E+00		-4.46E+00	1.43E+00
PM-146	453.90	39.94	1.44E-01	1.44E-01	1.87E-02	6.87E-02
	735.90	14.01	5.15E-01		8.33E-02	2.44E-01
	747.13	13.10	5.11E-01		3.84E-02	2.40E-01
ND-147	91.11	28.90	1.34E+02	1.34E+02	2.41E+02	6.56E+01
	531.02	13.10	2.64E+02		-1.63E+01	1.26E+02
PM-149	285.90	3.10	9.38E+13	9.38E+13	-1.80E+13	4.53E+13
EU-152	121.78	20.50	2.24E-01	2.24E-01	3.74E-02	1.09E-01
	244.69	5.40	1.08E+00		-5.36E-01	5.23E-01
	344.27	19.13	2.84E-01		2.76E-02	1.36E-01
	778.89	9.20	6.99E-01		-1.65E-01	3.28E-01
	964.01	10.40	8.31E-01		1.45E-01	3.93E-01
	1085.78	7.22	1.10E+00		-2.03E-01	5.16E-01
	1112.02	9.60	8.55E-01		3.41E-01	4.00E-01
	1407.95	14.94	4.40E-01		-1.90E-02	2.00E-01
GD-153	97.43	31.30	2.02E-01	2.02E-01	6.03E-02	9.85E-02
	103.18	22.20	2.94E-01		5.17E-02	1.43E-01
EU-154	123.07	40.50	1.15E-01	1.15E-01	-1.06E-02	5.59E-02
	723.30	19.70	3.57E-01		-8.22E-01	1.69E-01
	873.19	11.50	5.01E-01		1.09E-01	2.32E-01
	996.32	10.30	6.77E-01		-3.65E-01	3.15E-01
	1004.76	17.90	4.54E-01		2.07E-01	2.14E-01

Analysis Report for 1707091-11

HTC-A08-BKGD01-3642-01

	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	2.15E-01	1.15E-01	-1.55E-02	9.94E-02
	EU-155	86.50		30.90	2.14E-01	2.14E-01	1.43E-01	1.05E-01
		105.30		20.70	2.46E-01		1.16E-01	1.20E-01
	EU-156	811.77		10.40	5.87E+01	5.87E+01	1.49E+01	2.74E+01
		1153.47		7.20	1.27E+02		5.80E+01	5.99E+01
		1230.71		8.90	1.04E+02		-2.51E+01	4.89E+01
	HO-166M	184.41		72.60	8.41E-02	8.41E-02	1.51E-01	4.10E-02
		280.45		29.60	1.95E-01		7.12E-02	9.45E-02
		410.94		11.10	5.22E-01		1.59E-01	2.50E-01
		711.69		54.10	1.20E-01		-5.71E-02	5.66E-02
	TM-171	66.72		0.14	4.53E+01	4.53E+01	-7.22E+01	2.22E+01
	HF-172	67.35		5.31	1.21E+00	4.50E-01	8.80E-02	5.91E-01
		125.81		11.30	4.50E-01		-6.74E-01	2.19E-01
	LU-172	181.53		20.60	8.20E+03	3.69E+03	-6.63E+01	3.98E+03
		900.72		29.81	7.27E+03		-5.57E+03	3.38E+03
		1093.66		62.50	3.69E+03		-1.71E+03	1.71E+03
	LU-173	100.72		5.24	1.05E+00	3.31E-01	3.43E-01	5.13E-01
		272.11		21.20	3.31E-01		-7.12E-03	1.60E-01
	HF-175	343.40		84.00	1.78E-01	1.78E-01	1.68E-02	8.58E-02
	LU-176	88.34		13.30	4.94E-01	5.59E-02	2.17E-01	2.43E-01
		201.83		86.00	5.69E-02		-2.07E-02	2.76E-02
		306.78		94.00	5.59E-02		-4.01E-03	2.69E-02
	HF-181	133.02		41.70	6.21E-01	3.43E-01	1.22E-01	3.03E-01
		345.85		17.20	1.61E+00		1.58E-01	7.74E-01
		482.03		82.80	3.43E-01		-1.25E-01	1.63E-01
	TA-182	67.75		41.20	2.58E-01	2.58E-01	1.89E-02	1.27E-01
		1121.30		34.90	6.54E-01		9.00E-01	3.14E-01
		1189.05		16.23	9.71E-01		1.63E-01	4.55E-01
		1221.41		26.98	6.71E-01		-8.77E-02	3.17E-01
		1231.02		11.44	1.49E+00		-3.60E-01	7.00E-01
	IR-192	308.46		29.68	4.78E-01	3.26E-01	1.58E-01	2.31E-01
		468.07		48.10	3.26E-01		9.93E-02	1.56E-01
+	HG-203	279.19	*	77.30	4.65E-01	4.65E-01	4.37E-01	2.27E-01
+	TL-204	374.74	*	94.11	5.61E-02	5.61E-02	3.28E-02	2.68E-02
		899.15		99.16	6.60E-02		-4.63E-02	3.07E-02
		911.74	*	91.10	1.25E-01		4.27E-01	5.99E-02
	BI-207	569.67		97.72	5.95E-02	5.95E-02	-2.30E-02	2.82E-02
		1063.62		74.90	9.40E-02		1.93E-02	4.37E-02
	TL-208	583.14		30.22	3.74E-01	3.74E-01	1.24E+00	1.82E-01
		860.37		4.48	1.90E+00		2.00E+00	9.05E-01
		2614.66		35.85	5.52E-01		1.21E+00	2.63E-01
	BI-210M	262.00		45.00	1.19E-01	1.19E-01	-3.51E-02	5.74E-02
		300.00		23.00	2.83E-01		-7.46E-01	1.37E-01
+	PB-210	46.50	*	4.25	1.89E+00	1.89E+00	1.67E+00	9.30E-01
	PB-211	404.84		2.90	1.95E+00	1.95E+00	-4.36E-01	9.34E-01
		831.96		2.90	2.26E+00		-1.75E-01	1.06E+00
+	BI-212	727.17	*	11.80	7.88E-01	7.88E-01	1.01E+00	3.78E-01
		1620.62		2.75	2.20E+00		1.35E+00	9.81E-01
+	PB-212	238.63	*	44.60	3.35E-01	3.35E-01	1.43E+00	1.66E-01
		300.09	*	3.41	2.87E+00		2.59E+00	1.41E+00
+	BI-214	609.31	*	46.30	2.09E-01	2.09E-01	9.82E-01	1.01E-01
		1120.29		15.10	8.14E-01		1.18E+00	3.90E-01
		1764.49	*	15.80	4.24E-01		1.20E+00	1.90E-01

Analysis Report for 1707091-11

HTC-A08-BKGD01-3642-01

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	BI-214	2204.22		4.98	1.74E+00	2.09E-01	1.43E+00	7.87E-01
+	PB-214	295.21	*	19.19	4.95E-01	2.54E-01	1.20E+00	2.43E-01
		351.92	*	37.19	2.54E-01		1.26E+00	1.24E-01
	RN-219	401.80		6.50	8.90E-01	8.90E-01	5.57E-01	4.27E-01
	RA-223	323.87		3.88	1.48E+00	1.48E+00	-1.46E+00	7.16E-01
+	RA-224	240.98	*	3.95	3.87E+00	3.87E+00	5.03E+00	1.91E+00
	RA-225	40.00		31.00	1.81E+01	1.81E+01	-2.23E+00	8.79E+00
+	RA-226	186.21	*	3.28	2.60E+00	2.60E+00	2.35E+00	1.28E+00
	TH-227	50.10		8.40	5.71E-01	5.41E-01	4.39E-03	2.78E-01
		236.00		11.50	5.41E-01		-4.78E+00	2.63E-01
		256.20		6.30	8.73E-01		6.57E-02	4.23E-01
+	AC-228	338.32	*	11.40	6.45E-01	3.90E-01	1.66E+00	3.14E-01
		911.07	*	27.70	3.90E-01		1.34E+00	1.87E-01
		969.11	*	16.60	7.52E-01		1.11E+00	3.62E-01
	TH-230	48.44		16.90	3.13E-01	3.13E-01	1.79E-01	1.53E-01
		62.85		4.60	1.31E+00		5.83E-01	6.44E-01
		67.67		0.37	1.56E+01		1.14E+00	7.65E+00
	PA-231	283.67		1.60	3.31E+00	2.67E+00	-4.63E-01	1.60E+00
		302.67		2.30	2.67E+00		4.21E-01	1.29E+00
	TH-231	25.64		14.70	4.82E-01	4.82E-01	-3.05E+00	2.35E-01
		84.21		6.40	9.31E-01		-3.62E-01	4.57E-01
	PA-233	311.98		38.60	1.91E+00	1.91E+00	5.03E-01	9.19E-01
	PA-234	131.20		20.40	2.50E-01	2.50E-01	6.51E-02	1.22E-01
		733.99		8.80	7.88E-01		8.71E-02	3.73E-01
		946.00		12.00	5.86E-01		-6.41E-02	2.74E-01
	PA-234M	1001.03		0.92	8.91E+00	8.91E+00	5.75E+00	4.20E+00
	TH-234	63.29		3.80	1.61E+00	1.61E+00	1.75E+00	7.88E-01
	U-235	143.76		10.50	4.58E-01	4.58E-01	-8.56E-02	2.23E-01
		163.35		4.70	1.04E+00		9.84E-02	5.04E-01
		205.31		4.70	1.09E+00		3.43E-01	5.31E-01
	NP-237	86.50		12.60	5.05E-01	5.05E-01	3.37E-01	2.48E-01
	NP-239	106.10		22.70	1.70E+12	1.70E+12	4.35E+11	8.31E+11
		228.18		10.70	3.65E+12		7.75E+11	1.77E+12
		277.60		14.10	3.39E+12		2.70E+12	1.64E+12
	AM-241	59.54		35.90	1.51E-01	1.51E-01	-1.60E-01	7.37E-02
+	AM-243	74.67	*	66.00	1.61E-01	1.61E-01	2.64E-01	7.94E-02
	CM-243	209.75		3.29	1.64E+00	4.32E-01	1.29E+00	7.99E-01
		228.14		10.60	4.66E-01		9.89E-02	2.25E-01
		277.60		14.00	4.32E-01		3.44E-01	2.09E-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

Analysis Report for 1707091-11

HTC-A08-BKGD01-3642-01

No Action Level results available for reporting purposes.

DATA REVIEW COMMENTS REPORT

Creation Date	Comment	User

No Data Review Comments Entered.

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

Sample Title: HTC-A08-BKGD01-3642-01

Elapsed Live time: 3600
Elapsed Real Time: 3602

Channel								
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	71	80	97	172	535	159
25:	84	75	84	66	78	79	63	67
33:	85	78	83	77	84	84	87	86
41:	88	78	90	102	78	120	168	131
49:	96	106	85	96	110	109	112	102
57:	105	114	152	160	150	120	207	256
65:	161	171	153	189	145	175	167	178
73:	175	229	380	368	445	565	193	139
81:	160	156	144	165	210	140	244	256
89:	180	217	198	174	273	237	133	114
97:	86	111	109	127	103	111	105	105
105:	109	142	104	110	95	105	109	87
113:	117	101	108	105	97	91	83	79
121:	93	86	105	89	89	85	109	85
129:	143	137	91	102	114	106	101	95
137:	92	88	77	101	101	82	82	103
145:	84	106	99	83	102	110	99	77
153:	94	80	107	82	64	82	80	88
161:	72	97	75	85	80	83	74	93
169:	71	87	76	78	72	70	87	74
177:	72	68	58	74	78	81	81	74
185:	108	173	155	67	81	71	79	83
193:	63	72	58	64	70	70	64	60
201:	63	61	81	75	79	81	70	65
209:	85	115	76	54	51	63	52	53
217:	64	43	46	58	64	62	67	60
225:	59	53	71	57	56	63	49	54
233:	57	60	61	83	63	196	725	294
241:	120	173	130	76	67	55	47	63
249:	52	48	40	35	60	41	47	49
257:	47	49	53	37	39	48	45	34
265:	39	43	45	45	41	63	83	55
273:	37	38	45	48	53	65	48	50
281:	39	39	43	33	28	42	36	31
289:	48	43	40	40	39	53	165	181
297:	64	46	36	79	66	40	39	20
305:	38	42	27	42	32	29	35	45
313:	29	41	37	29	33	30	32	27
321:	34	37	36	41	32	40	37	72
329:	51	27	29	39	28	22	27	27
337:	39	102	149	41	43	32	34	26
345:	33	29	19	29	28	37	93	319
353:	217	47	35	31	23	41	35	18
361:	25	26	32	25	20	29	20	23

369:	19	31	32	26	24	19	38	32

Sample Title: HTC-A08-BKGD01-3642-01

Channel								
377:	30	20	20	20	36	22	22	17
385:	32	24	36	27	22	27	34	24
393:	26	27	21	18	19	20	28	21
401:	27	30	29	28	25	22	22	21
409:	26	33	36	18	21	27	26	22
417:	21	22	25	26	34	17	27	21
425:	27	21	24	29	24	24	24	23
433:	27	22	22	23	15	19	25	23
441:	16	18	25	23	24	16	19	20
449:	20	25	17	23	28	13	22	19
457:	21	14	20	13	20	27	42	27
465:	31	15	30	16	25	21	27	17
473:	19	23	19	16	18	21	14	25
481:	23	16	14	20	13	16	27	21
489:	17	24	19	11	18	15	15	21
497:	27	19	23	25	27	15	15	19
505:	22	25	33	29	27	49	92	49
513:	40	20	29	14	22	20	17	22
521:	15	11	13	16	30	14	10	20
529:	14	18	14	18	24	19	20	28
537:	17	20	17	19	16	12	13	14
545:	19	24	14	23	16	19	19	14
553:	14	9	14	13	14	16	10	19
561:	12	22	14	19	18	13	18	18
569:	15	19	10	19	9	19	21	17
577:	14	16	10	18	14	42	144	154
585:	29	18	17	10	16	15	16	17
593:	18	16	23	19	16	16	15	21
601:	8	12	15	14	8	21	19	34
609:	167	186	48	21	25	23	23	12
617:	19	15	13	14	13	13	15	15
625:	11	17	10	14	21	17	9	12
633:	15	10	11	19	19	19	13	16
641:	9	15	13	12	14	12	18	13
649:	13	16	9	10	13	11	16	13
657:	19	16	12	10	9	14	10	10
665:	20	11	17	12	10	16	12	18
673:	11	9	12	13	14	7	13	12
681:	19	22	16	18	8	13	15	19
689:	9	13	10	7	19	22	13	12
697:	11	14	14	12	21	12	9	6
705:	16	17	16	15	15	11	21	16
713:	9	12	12	20	16	14	20	8
721:	14	20	11	17	14	22	48	43
729:	23	11	16	7	20	20	10	15
737:	17	14	10	17	14	9	14	14
745:	14	10	14	11	7	18	15	10
753:	12	9	14	8	11	13	12	9
761:	9	12	15	9	10	7	13	25
769:	41	14	10	22	8	13	14	13
777:	11	9	11	10	11	14	8	12
785:	19	20	13	6	7	14	13	15
793:	14	11	27	18	11	10	10	15

801:	9	5	10	16	13	10	9	8

Sample Title: HTC-A08-BKGD01-3642-01

Channel								
809:	9	7	10	12	10	9	11	8
817:	8	12	12	8	6	8	6	11
825:	11	15	11	8	10	7	10	12
833:	12	8	17	15	11	9	12	12
841:	11	15	9	15	10	11	13	11
849:	14	12	13	10	8	14	8	12
857:	13	14	5	21	39	19	15	11
865:	8	6	15	10	11	8	5	4
873:	8	14	7	5	8	7	9	8
881:	8	12	10	9	16	7	11	6
889:	7	9	5	11	10	7	8	11
897:	7	10	12	8	7	5	13	18
905:	14	7	10	7	28	36	103	100
913:	25	9	13	10	15	8	8	11
921:	7	17	10	10	11	9	10	9
929:	7	9	12	11	13	16	10	5
937:	9	8	7	10	10	14	4	16
945:	11	5	11	9	16	11	9	8
953:	9	10	7	10	7	9	8	10
961:	5	9	8	19	30	20	14	32
969:	71	61	12	9	8	10	6	17
977:	7	13	5	12	4	7	13	14
985:	5	7	10	6	12	11	9	9
993:	13	3	8	5	5	16	12	13
1001:	16	14	13	7	13	9	13	7
1009:	7	10	5	8	10	14	10	7
1017:	9	12	7	9	7	14	11	5
1025:	13	10	10	9	12	9	9	9
1033:	8	13	7	8	10	8	9	4
1041:	6	9	6	12	14	9	7	10
1049:	9	11	9	11	4	9	6	6
1057:	12	11	3	13	10	0	14	3
1065:	11	8	10	5	11	12	11	7
1073:	14	10	7	16	10	14	12	10
1081:	19	10	13	10	13	9	7	11
1089:	13	6	7	9	2	12	9	7
1097:	11	5	8	7	10	9	7	14
1105:	12	12	7	5	10	11	9	14
1113:	7	15	9	8	12	20	25	51
1121:	39	21	11	15	15	15	5	9
1129:	10	22	7	8	9	14	14	6
1137:	12	14	10	8	8	4	6	10
1145:	15	15	6	10	9	13	9	16
1153:	13	13	16	12	8	13	9	7
1161:	18	10	10	9	9	11	13	7
1169:	14	4	11	18	16	19	8	8
1177:	10	12	12	10	11	11	13	11
1185:	13	11	5	14	9	14	12	11
1193:	10	6	12	18	9	10	8	11
1201:	11	13	5	12	12	6	15	16
1209:	10	13	12	16	16	20	16	17
1217:	10	15	12	14	16	12	11	18
1225:	17	15	8	13	15	14	12	9

1233:	14	10	6	9	19	29	27	11

Sample Title: HTC-A08-BKGD01-3642-01

Channel								
1241:	13	7	15	12	9	8	13	8
1249:	10	10	7	6	11	8	8	9
1257:	15	9	7	9	8	7	9	11
1265:	9	6	7	12	9	12	5	10
1273:	5	7	2	9	13	3	8	8
1281:	17	13	5	5	3	6	6	10
1289:	4	3	8	4	8	7	8	9
1297:	7	4	5	12	8	4	9	4
1305:	3	3	6	7	8	9	9	6
1313:	5	5	5	6	13	9	7	2
1321:	5	3	3	5	9	5	4	9
1329:	2	5	8	4	10	8	4	8
1337:	9	4	7	5	4	4	9	6
1345:	4	2	6	1	4	8	3	3
1353:	4	7	2	3	5	4	2	6
1361:	4	5	2	3	3	3	2	6
1369:	8	1	1	3	5	2	4	8
1377:	11	9	8	4	7	6	2	4
1385:	3	5	2	3	2	4	5	4
1393:	3	6	3	3	4	3	3	4
1401:	10	6	5	1	2	5	10	4
1409:	6	4	4	4	3	1	4	4
1417:	4	1	4	2	3	4	7	2
1425:	0	5	3	2	1	2	4	4
1433:	1	4	5	1	2	5	4	4
1441:	2	2	3	5	3	2	2	3
1449:	3	3	4	4	3	5	3	6
1457:	10	16	94	383	544	231	32	18
1465:	18	15	8	3	4	1	1	3
1473:	1	0	1	5	4	2	3	1
1481:	2	0	5	0	2	2	2	2
1489:	2	3	0	2	1	3	2	2
1497:	2	4	5	3	3	0	4	3
1505:	1	0	4	8	4	2	2	2
1513:	2	0	4	2	4	1	1	5
1521:	3	2	0	0	3	1	5	2
1529:	2	1	2	2	2	1	0	5
1537:	4	3	3	0	0	5	3	0
1545:	4	0	0	1	1	3	2	3
1553:	2	1	3	3	0	0	3	0
1561:	4	0	2	1	0	3	1	3
1569:	0	2	1	1	2	2	0	4
1577:	2	3	2	1	3	2	0	1
1585:	4	1	2	7	8	2	2	6
1593:	4	8	1	2	3	2	5	2
1601:	1	2	2	1	1	1	3	1
1609:	3	7	1	1	0	2	1	2
1617:	3	0	2	4	6	6	1	1
1625:	0	1	0	4	2	5	9	2
1633:	1	0	1	1	3	1	1	0
1641:	0	3	1	0	4	0	1	2
1649:	0	1	0	1	0	2	1	2
1657:	3	1	2	2	1	3	0	2

1665:	0	2	2	0	2	3	1	1

Sample Title: HTC-A08-BKGD01-3642-01

Channel								
1673:	1	1	2	1	4	3	0	0
1681:	1	1	0	0	1	1	1	3
1689:	0	0	1	5	0	2	1	2
1697:	1	1	2	1	1	1	3	0
1705:	2	2	3	1	0	2	2	0
1713:	2	2	1	1	0	0	2	0
1721:	1	0	1	1	0	0	2	8
1729:	3	5	2	4	1	0	0	1
1737:	0	0	0	3	1	2	4	1
1745:	0	0	0	0	0	1	3	4
1753:	2	2	2	0	2	1	1	3
1761:	2	5	11	21	24	9	5	0
1769:	2	2	0	0	4	1	2	0
1777:	2	3	1	3	1	1	2	2
1785:	1	3	1	2	1	0	1	3
1793:	0	0	1	2	3	1	1	1
1801:	2	2	2	1	1	1	1	0
1809:	1	3	4	1	3	0	4	1
1817:	1	2	4	0	2	0	3	2
1825:	1	0	0	1	2	1	1	0
1833:	2	0	0	0	3	3	1	0
1841:	1	0	0	2	1	1	7	5
1849:	2	0	3	0	1	4	1	1
1857:	1	3	2	1	0	1	1	2
1865:	0	2	2	0	0	3	1	0
1873:	0	1	3	1	0	1	0	4
1881:	1	3	0	2	2	2	0	2
1889:	2	0	1	0	3	1	0	2
1897:	0	1	2	1	2	0	2	3
1905:	3	0	1	0	4	0	1	1
1913:	2	1	0	2	3	1	1	1
1921:	1	2	0	1	3	0	1	0
1929:	1	0	2	1	0	0	1	3
1937:	1	1	2	3	1	1	0	1
1945:	2	1	2	0	0	1	1	0
1953:	1	0	0	0	1	1	1	2
1961:	0	1	1	1	5	1	2	0
1969:	1	0	0	1	2	3	0	2
1977:	1	1	3	2	1	2	1	1
1985:	2	0	1	1	1	2	0	0
1993:	0	1	0	2	1	0	1	1
2001:	0	1	1	1	1	1	0	0
2009:	0	1	4	1	1	0	2	2
2017:	1	1	1	0	1	2	0	1
2025:	2	2	1	1	1	5	0	2
2033:	1	2	2	0	2	0	2	0
2041:	1	1	2	1	0	2	0	0
2049:	0	1	2	3	1	0	1	1
2057:	0	1	1	1	0	2	0	1
2065:	0	0	3	0	0	0	2	1
2073:	1	3	2	1	0	2	0	1
2081:	1	0	2	0	1	5	1	0
2089:	0	1	0	0	1	1	1	2

2097:	4	1	1	1	2	4	4	5

Sample Title: HTC-A08-BKGD01-3642-01

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

2529:	0	0	0	0	2	0	0	1

Sample Title: HTC-A08-BKGD01-3642-01

Channel								
2537:	1	1	0	0	1	0	2	1
2545:	0	0	0	0	0	1	1	0
2553:	1	0	0	0	2	0	0	0
2561:	0	0	0	1	2	1	0	0
2569:	1	0	0	0	1	0	1	0
2577:	0	0	0	0	4	0	0	0
2585:	1	0	0	0	0	0	0	0
2593:	1	0	0	3	1	0	0	1
2601:	0	0	2	2	1	0	0	2
2609:	0	2	3	14	34	44	32	5
2617:	2	2	1	0	0	0	0	0
2625:	0	1	0	1	0	0	1	0
2633:	0	0	1	1	0	1	0	0
2641:	0	0	1	0	0	0	1	1
2649:	0	0	0	0	0	0	0	0
2657:	0	0	0	0	0	0	0	0
2665:	1	0	0	1	0	1	1	1
2673:	1	1	0	1	0	0	0	0
2681:	0	0	0	1	0	1	1	1
2689:	1	0	0	0	0	1	3	0
2697:	0	0	1	0	0	0	1	0
2705:	0	0	0	0	2	0	0	0
2713:	0	0	0	0	0	0	0	0
2721:	0	0	1	0	0	0	0	0
2729:	0	0	1	0	0	1	0	0
2737:	1	0	1	1	0	0	0	0
2745:	0	0	0	1	0	0	0	0
2753:	0	0	0	0	0	0	1	0
2761:	0	0	1	0	0	0	3	0
2769:	0	0	0	0	1	2	0	0
2777:	0	0	0	0	1	0	1	0
2785:	0	0	0	1	0	1	0	0
2793:	0	0	0	1	0	0	0	0
2801:	0	1	0	0	0	0	1	0
2809:	0	0	1	0	1	0	1	1
2817:	0	0	1	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	1	0	1	0	1	0	0
2849:	0	0	0	0	0	0	0	1
2857:	0	0	0	0	0	0	0	0
2865:	0	0	0	0	0	2	0	0
2873:	0	0	2	0	0	0	0	1
2881:	0	1	1	0	2	0	1	0
2889:	1	0	0	0	1	0	0	0
2897:	1	0	0	0	0	1	0	0
2905:	0	1	0	0	0	1	0	0
2913:	0	0	1	0	1	0	0	0
2921:	0	0	0	1	0	0	0	2
2929:	1	1	0	0	1	0	0	0
2937:	0	0	0	0	0	0	0	0
2945:	1	0	0	1	0	1	0	1
2953:	0	0	0	0	0	0	0	0

2961:	1	0	0	0	1	0	0	0

Sample Title: HTC-A08-BKGD01-3642-01

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

Sample Title: HTC-A08-BKGD01-3642-01

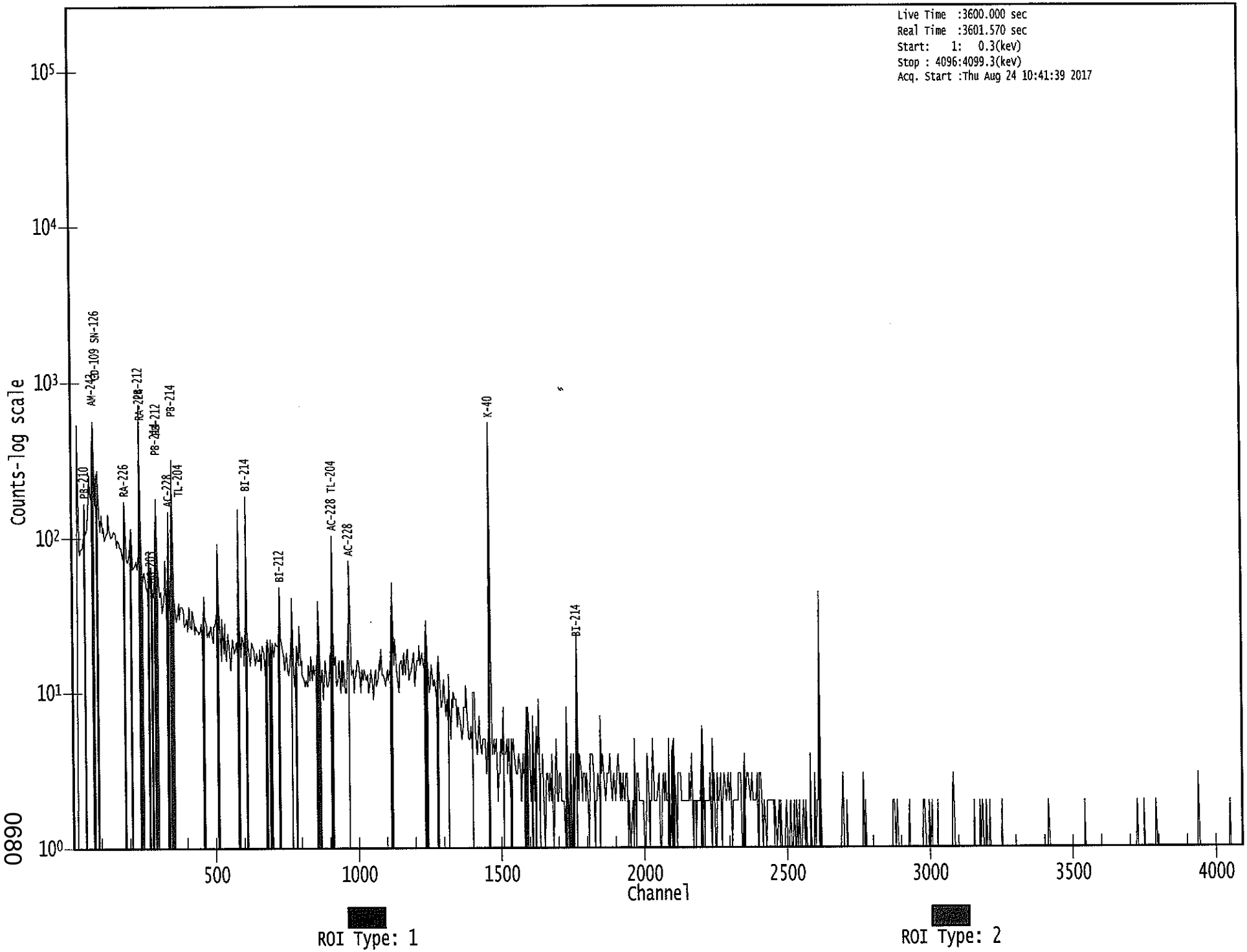
Channel								
3401:	0	1	1	0	0	0	0	0
3409:	0	0	0	0	0	2	0	1
3417:	0	0	0	1	1	0	0	0
3425:	1	0	0	0	0	0	0	0
3433:	0	1	0	0	0	0	0	0
3441:	0	0	0	0	0	0	0	0
3449:	1	0	0	0	0	0	0	0
3457:	0	0	0	0	0	0	0	1
3465:	0	0	0	0	0	0	1	0
3473:	1	0	0	0	0	1	1	0
3481:	0	1	0	1	0	0	0	0
3489:	0	0	0	0	0	0	0	0
3497:	0	0	0	0	0	0	0	0
3505:	0	0	0	0	0	0	0	0
3513:	0	0	0	0	0	0	0	0
3521:	0	0	0	1	0	0	0	0
3529:	0	0	0	0	0	0	1	0
3537:	0	0	0	0	2	0	0	0
3545:	0	0	0	0	0	0	0	0
3553:	0	0	0	0	0	1	0	0
3561:	0	0	0	0	1	0	0	1
3569:	1	0	0	0	0	1	0	0
3577:	1	1	0	1	0	0	0	1
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	1	0
3617:	0	0	0	0	0	0	0	1
3625:	1	0	0	0	0	0	0	0
3633:	0	0	0	0	0	0	1	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	0
3665:	0	0	0	0	0	1	0	0
3673:	0	0	0	0	0	0	0	0
3681:	0	0	0	0	0	0	0	0
3689:	0	0	0	1	0	0	0	0
3697:	1	0	0	0	0	0	0	1
3705:	1	0	0	1	0	0	0	0
3713:	0	0	0	0	1	0	0	0
3721:	0	1	0	0	0	2	0	0
3729:	0	0	0	0	0	0	0	1
3737:	0	1	0	0	0	0	0	0
3745:	0	0	0	0	2	0	0	0
3753:	0	0	0	0	0	0	0	1
3761:	0	0	0	0	0	0	0	0
3769:	0	0	0	0	0	0	0	0
3777:	1	0	0	1	0	0	0	0
3785:	0	0	0	1	0	2	0	0
3793:	0	1	0	1	0	0	0	0
3801:	0	0	0	0	0	1	0	0
3809:	1	0	1	0	1	0	0	1
3817:	0	0	1	0	0	0	0	0

3825:	0	0	0	0	0	0	0	1

Sample Title: HTC-A08-BKGD01-3642-01

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

0000055891.CNF



0890

Apex-Gamma

Analysis Report for 1707091-12
HTC-A08-BKGD01-4248-01

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 1707091-12
Sample Description	: HTC-A08-BKGD01-4248-01
Sample Type	: SOIL
Sample Size	: 6.842E+02 grams
Facility	: Countroom
Sample Taken On	: 5/15/2017 12:56:50PM
Acquisition Started	: 8/24/2017 10:41:47AM
Procedure	: GAS-1602 pCi
Operator	: Administrator
Detector Name	: GE2
Geometry	: GAS-1602
Live Time	: 3600.0 seconds
Real Time	: 3601.2 seconds
Dead Time	: 0.03 %
Peak Locate Threshold	: 2.50
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 29 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 8/19/2017
Efficiency Calibration Used Done On	: 1/14/2017
Efficiency Calibration Description	:
Sample Number	: 55892

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

Analysis Report for 1707091-12

HTC-A08-BKGD01-4248-01

PEAK LOCATE REPORT

Peak Locate Performed on : 8/24/2017 11:42:21AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096
Peak Search Sensitivity : 2.50

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
1	76.26	76.57	0.0000	0.00
2	93.15	93.44	0.0000	0.00
3	114.67	114.94	0.0000	0.00
4	142.14	142.38	0.0000	0.00
5	185.80	185.99	0.0000	0.00
6	208.89	209.06	0.0000	0.00
7	238.75	238.89	0.0000	0.00
8	241.82	241.95	0.0000	0.00
9	270.23	270.33	0.0000	0.00
10	276.92	277.02	0.0000	0.00
11	295.13	295.20	0.0000	0.00
12	300.21	300.28	0.0000	0.00
13	338.27	338.31	0.0000	0.00
14	351.86	351.88	0.0000	0.00
15	377.59	377.58	0.0000	0.00
16	462.94	462.84	0.0000	0.00
17	511.03	510.88	0.0000	0.00
18	562.41	562.21	0.0000	0.00
19	583.26	583.04	0.0000	0.00
20	609.34	609.09	0.0000	0.00
21	699.43	699.10	0.0000	0.00
22	724.73	724.37	0.0000	0.00
23	727.36	727.00	0.0000	0.00
24	755.59	755.20	0.0000	0.00
25	768.42	768.02	0.0000	0.00
26	771.44	771.04	0.0000	0.00
27	782.82	782.40	0.0000	0.00
28	794.08	793.65	0.0000	0.00
29	829.85	829.39	0.0000	0.00
30	861.75	861.26	0.0000	0.00
31	895.81	895.29	0.0000	0.00
32	911.37	910.83	0.0000	0.00
33	934.46	933.90	0.0000	0.00
34	944.14	943.58	0.0000	0.00
35	965.16	964.58	0.0000	0.00
36	968.89	968.30	0.0000	0.00
37	1120.49	1119.76	0.0000	0.00
38	1305.64	1304.75	0.0000	0.00
39	1313.42	1312.52	0.0000	0.00
40	1380.77	1379.81	0.0000	0.00
41	1409.85	1408.87	0.0000	0.00
42	1461.15	1460.12	0.0000	0.00

Analysis Report for 1707091-12

HTC-A08-BKGD01-4248-01

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
43	1501.31	1500.25	0.0000	0.00
44	1508.25	1507.18	0.0000	0.00
45	1540.58	1539.49	0.0000	0.00
46	1544.14	1543.05	0.0000	0.00
47	1591.71	1590.58	0.0000	0.00
48	1609.73	1608.58	0.0000	0.00
49	1730.97	1729.72	0.0000	0.00
50	1764.71	1763.43	0.0000	0.00
51	1920.06	1918.67	0.0000	0.00
52	2175.45	2173.88	0.0000	0.00
53	2203.49	2201.90	0.0000	0.00
54	2272.59	2270.95	0.0000	0.00
55	2447.20	2445.44	0.0000	0.00
56	2614.61	2612.75	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1707091-12

HTC-A08-BKGD01-4248-01

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 8/24/2017 11:42:21AM

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

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
	1	76.26	72 -	82	76.57	1.09E+03	152.73	2.49E+03	3.88
	2	93.15	92 -	95	93.44	1.53E+02	61.09	7.52E+02	1.71
	3	114.67	112 -	118	114.94	1.11E+02	73.38	9.03E+02	4.21
	4	142.14	140 -	145	142.38	5.89E+01	62.93	7.46E+02	2.23
	5	185.80	183 -	189	185.99	1.37E+02	72.37	8.50E+02	1.19
	6	208.89	206 -	212	209.06	6.07E+01	65.05	7.27E+02	1.19
M	7	238.75	234 -	245	238.89	7.62E+02	68.88	3.30E+02	1.45
m	8	241.82	234 -	245	241.95	1.47E+02	47.71	3.34E+02	1.46
M	9	270.23	266 -	280	270.33	5.34E+01	42.27	3.33E+02	1.67
m	10	276.92	266 -	280	277.02	5.13E+01	40.58	3.17E+02	1.68
	11	295.13	292 -	298	295.20	2.47E+02	56.50	4.03E+02	1.64
	12	300.21	299 -	303	300.28	6.23E+01	39.87	2.95E+02	2.05
	13	338.27	335 -	342	338.31	1.66E+02	50.04	3.05E+02	1.89
	14	351.86	348 -	355	351.88	3.75E+02	63.75	4.26E+02	1.36
	15	377.59	375 -	380	377.58	3.42E+01	33.70	1.94E+02	3.60
	16	462.94	458 -	467	462.84	5.64E+01	45.25	2.61E+02	1.57
	17	511.03	507 -	514	510.88	1.64E+02	44.36	2.16E+02	2.28
	18	562.41	559 -	565	562.21	3.83E+01	29.42	1.23E+02	1.32
	19	583.26	579 -	586	583.04	2.46E+02	45.96	1.88E+02	1.32
	20	609.34	603 -	614	609.09	3.46E+02	61.09	2.93E+02	2.01
	21	699.43	691 -	706	699.10	5.40E+01	54.18	2.72E+02	9.21
M	22	724.73	723 -	729	724.37	1.62E+01	18.11	4.89E+01	1.91
m	23	727.36	723 -	729	727.00	6.91E+01	24.82	6.26E+01	1.76
	24	755.59	752 -	758	755.20	3.69E+01	23.86	7.62E+01	2.92
M	25	768.42	763 -	776	768.02	5.82E+01	26.71	7.30E+01	2.22
m	26	771.44	763 -	776	771.04	2.38E+01	25.79	5.10E+01	2.23
	27	782.82	776 -	789	782.40	6.09E+01	37.12	1.26E+02	8.74
	28	794.08	789 -	798	793.65	4.78E+01	32.70	1.26E+02	3.52
	29	829.85	826 -	832	829.39	2.29E+01	21.37	6.62E+01	3.85
	30	861.75	855 -	870	861.26	8.10E+01	43.86	1.60E+02	3.59
	31	895.81	892 -	899	895.29	3.26E+01	21.17	5.48E+01	3.93
	32	911.37	906 -	914	910.83	1.93E+02	40.24	1.30E+02	2.41
	33	934.46	929 -	938	933.90	4.42E+01	30.15	1.04E+02	5.73
	34	944.14	940 -	947	943.58	2.43E+01	25.30	8.74E+01	1.67
M	35	965.16	957 -	973	964.58	3.85E+01	28.35	1.10E+02	2.44
m	36	968.89	957 -	973	968.30	1.01E+02	32.55	1.07E+02	2.44
	37	1120.49	1114 -	1124	1119.76	8.50E+01	38.11	1.48E+02	2.41
M	38	1305.64	1299 -	1316	1304.75	2.60E+01	18.65	4.80E+01	2.75
m	39	1313.42	1299 -	1316	1312.52	1.42E+01	19.08	4.80E+01	2.76
	40	1380.77	1373 -	1387	1379.81	5.30E+01	22.29	3.00E+01	8.34

Analysis Report for 1707091-12

HTC-A08-BKGD01-4248-01

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
	41	1409.85	1405 -	1413	1408.87	3.04E+01	13.29	7.29E+00	2.09
	42	1461.15	1454 -	1466	1460.12	9.89E+02	68.33	8.13E+01	2.47
	43	1501.31	1497 -	1503	1500.25	1.28E+01	10.23	8.47E+00	2.66
	44	1508.25	1504 -	1512	1507.18	1.15E+01	14.19	2.70E+01	3.98
M	45	1540.58	1534 -	1548	1539.49	1.09E+01	11.52	8.16E+00	2.95
m	46	1544.14	1534 -	1548	1543.05	7.23E+00	12.20	1.84E+01	2.95
	47	1591.71	1585 -	1597	1590.58	2.24E+01	18.74	2.51E+01	7.57
	48	1609.73	1605 -	1612	1608.58	8.30E+00	7.48	3.40E+00	1.58
	49	1730.97	1725 -	1735	1729.72	2.25E+01	12.98	8.96E+00	3.16
	50	1764.71	1758 -	1768	1763.43	5.47E+01	18.51	1.65E+01	2.29
	51	1920.06	1915 -	1922	1918.67	9.00E+00	6.00	0.00E+00	2.98
	52	2175.45	2171 -	2176	2173.88	8.00E+00	5.66	0.00E+00	2.70
	53	2203.49	2197 -	2210	2201.90	1.78E+01	14.21	1.63E+01	4.47
	54	2272.59	2268 -	2273	2270.95	7.50E+00	7.62	5.00E+00	1.09
	55	2447.20	2440 -	2451	2445.44	1.80E+01	8.49	0.00E+00	3.99
	56	2614.61	2606 -	2616	2612.75	9.45E+01	21.46	1.10E+01	4.42

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

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 8/24/2017 11:42:21AM

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

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	1	76.26	72 -	82	1.09E+03	152.73	2.49E+03	1.13E+02
	2	93.15	92 -	95	1.53E+02	61.09	7.52E+02	4.59E+01
	3	114.67	112 -	118	1.11E+02	73.38	9.03E+02	5.78E+01
	4	142.14	140 -	145	5.89E+01	62.93	7.46E+02	5.02E+01
	5	185.80	183 -	189	1.37E+02	72.37	8.50E+02	5.63E+01
	6	208.89	206 -	212	6.07E+01	65.05	7.27E+02	5.19E+01
M	7	238.75	234 -	245	7.62E+02	68.88	3.30E+02	2.98E+01
m	8	241.82	234 -	245	1.47E+02	47.71	3.34E+02	3.01E+01
M	9	270.23	266 -	280	5.34E+01	42.27	3.33E+02	3.00E+01
m	10	276.92	266 -	280	5.13E+01	40.58	3.17E+02	2.92E+01
	11	295.13	292 -	298	2.47E+02	56.50	4.03E+02	3.86E+01
	12	300.21	299 -	303	6.23E+01	39.87	2.95E+02	3.01E+01

Analysis Report for 1707091-12

HTC-A08-BKGD01-4248-01

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	13	338.27	335 -	342	1.66E+02	50.04	3.05E+02	3.53E+01
	14	351.86	348 -	355	3.75E+02	63.75	4.26E+02	4.16E+01
	15	377.59	375 -	380	3.42E+01	33.70	1.94E+02	2.60E+01
	16	462.94	458 -	467	5.64E+01	45.25	2.61E+02	3.51E+01
	17	511.03	507 -	514	1.64E+02	44.36	2.16E+02	2.98E+01
	18	562.41	559 -	565	3.83E+01	29.42	1.23E+02	2.19E+01
	19	583.26	579 -	586	2.46E+02	45.96	1.88E+02	2.76E+01
	20	609.34	603 -	614	3.46E+02	61.09	2.93E+02	3.98E+01
	21	699.43	691 -	706	5.40E+01	54.18	2.72E+02	4.29E+01
M	22	724.73	723 -	729	1.62E+01	18.11	4.89E+01	1.15E+01
m	23	727.36	723 -	729	6.91E+01	24.82	6.26E+01	1.30E+01
	24	755.59	752 -	758	3.69E+01	23.86	7.62E+01	1.69E+01
M	25	768.42	763 -	776	5.82E+01	26.71	7.30E+01	1.40E+01
m	26	771.44	763 -	776	2.38E+01	25.79	5.10E+01	1.17E+01
	27	782.82	776 -	789	6.09E+01	37.12	1.26E+02	2.77E+01
	28	794.08	789 -	798	4.78E+01	32.70	1.26E+02	2.44E+01
	29	829.85	826 -	832	2.29E+01	21.37	6.62E+01	1.57E+01
	30	861.75	855 -	870	8.10E+01	43.86	1.60E+02	3.29E+01
	31	895.81	892 -	899	3.26E+01	21.17	5.48E+01	1.46E+01
	32	911.37	906 -	914	1.93E+02	40.24	1.30E+02	2.39E+01
	33	934.46	929 -	938	4.42E+01	30.15	1.04E+02	2.22E+01
	34	944.14	940 -	947	2.43E+01	25.30	8.74E+01	1.92E+01
M	35	965.16	957 -	973	3.85E+01	28.35	1.10E+02	1.72E+01
m	36	968.89	957 -	973	1.01E+02	32.55	1.07E+02	1.70E+01
	37	1120.49	1114 -	1124	8.50E+01	38.11	1.48E+02	2.74E+01
M	38	1305.64	1299 -	1316	2.60E+01	18.65	4.80E+01	1.14E+01
m	39	1313.42	1299 -	1316	1.42E+01	19.08	4.80E+01	1.14E+01
	40	1380.77	1373 -	1387	5.30E+01	22.29	3.00E+01	1.39E+01
	41	1409.85	1405 -	1413	3.04E+01	13.29	7.29E+00	6.10E+00
	42	1461.15	1454 -	1466	9.89E+02	68.33	8.13E+01	2.19E+01
	43	1501.31	1497 -	1503	1.28E+01	10.23	8.47E+00	6.02E+00
	44	1508.25	1504 -	1512	1.15E+01	14.19	2.70E+01	1.02E+01
M	45	1540.58	1534 -	1548	1.09E+01	11.52	8.16E+00	4.70E+00
m	46	1544.14	1534 -	1548	7.23E+00	12.20	1.84E+01	7.04E+00
	47	1591.71	1585 -	1597	2.24E+01	18.74	2.51E+01	1.33E+01
	48	1609.73	1605 -	1612	8.30E+00	7.48	3.40E+00	3.93E+00
	49	1730.97	1725 -	1735	2.25E+01	12.98	8.96E+00	7.28E+00
	50	1764.71	1758 -	1768	5.47E+01	18.51	1.65E+01	9.15E+00
	51	1920.06	1915 -	1922	9.00E+00	6.00	0.00E+00	0.00E+00
	52	2175.45	2171 -	2176	8.00E+00	5.66	0.00E+00	0.00E+00
	53	2203.49	2197 -	2210	1.78E+01	14.21	1.63E+01	9.39E+00
	54	2272.59	2268 -	2273	7.50E+00	7.62	5.00E+00	4.35E+00
	55	2447.20	2440 -	2451	1.80E+01	8.49	0.00E+00	0.00E+00
	56	2614.61	2606 -	2616	9.45E+01	21.46	1.10E+01	7.47E+00

Analysis Report for 1707091-12

HTC-A08-BKGD01-4248-01

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 : 8/24/2017 11:42:21AM

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

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

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	1	76.26	72 -	82	76.57	1.09E+03	152.73	2.49E+03	.....
	2	93.15	92 -	95	93.44	1.53E+02	61.09	7.52E+02	GA-67
	3	114.67	112 -	118	114.94	1.11E+02	73.38	9.03E+02	.....
	4	142.14	140 -	145	142.38	5.89E+01	62.93	7.46E+02	.....
	5	185.80	183 -	189	185.99	1.37E+02	72.37	8.50E+02	RA-226
	6	208.89	206 -	212	209.06	6.07E+01	65.05	7.27E+02	GA-67
									CM-243
M	7	238.75	234 -	245	238.89	7.62E+02	68.88	3.30E+02	PB-212
m	8	241.82	234 -	245	241.95	1.47E+02	47.71	3.34E+02	RA-224
M	9	270.23	266 -	280	270.33	5.34E+01	42.27	3.33E+02	.....
m	10	276.92	266 -	280	277.02	5.13E+01	40.58	3.17E+02	CM-243
									NP-239
	11	295.13	292 -	298	295.20	2.47E+02	56.50	4.03E+02	PB-214
	12	300.21	299 -	303	300.28	6.23E+01	39.87	2.95E+02	GA-67
									PB-212
									BI-210M
	13	338.27	335 -	342	338.31	1.66E+02	50.04	3.05E+02	AC-228
	14	351.86	348 -	355	351.88	3.75E+02	63.75	4.26E+02	PB-214
	15	377.59	375 -	380	377.58	3.42E+01	33.70	1.94E+02	.....
	16	462.94	458 -	467	462.84	5.64E+01	45.25	2.61E+02	SB-125
	17	511.03	507 -	514	510.88	1.64E+02	44.36	2.16E+02	.....
	18	562.41	559 -	565	562.21	3.83E+01	29.42	1.23E+02	CS-134
	19	583.26	579 -	586	583.04	2.46E+02	45.96	1.88E+02	TL-208
	20	609.34	603 -	614	609.09	3.46E+02	61.09	2.93E+02	BI-214
	21	699.43	691 -	706	699.10	5.40E+01	54.18	2.72E+02	.....
M	22	724.73	723 -	729	724.37	1.62E+01	18.11	4.89E+01	ZR-95
m	23	727.36	723 -	729	727.00	6.91E+01	24.82	6.26E+01	BI-212
	24	755.59	752 -	758	755.20	3.69E+01	23.86	7.62E+01	.....
M	25	768.42	763 -	776	768.02	5.82E+01	26.71	7.30E+01	.....
m	26	771.44	763 -	776	771.04	2.38E+01	25.79	5.10E+01	.....

Analysis Report for 1707091-12

HTC-A08-BKGD01-4248-01

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	27	782.82	776 -	789	782.40	6.09E+01	37.12	1.26E+02	SB-127
	28	794.08	789 -	798	793.65	4.78E+01	32.70	1.26E+02	.....
	29	829.85	826 -	832	829.39	2.29E+01	21.37	6.62E+01	.....
	30	861.75	855 -	870	861.26	8.10E+01	43.86	1.60E+02	.....
	31	895.81	892 -	899	895.29	3.26E+01	21.17	5.48E+01	.....
	32	911.37	906 -	914	910.83	1.93E+02	40.24	1.30E+02	AC-228
									TL-204
	33	934.46	929 -	938	933.90	4.42E+01	30.15	1.04E+02	.....
	34	944.14	940 -	947	943.58	2.43E+01	25.30	8.74E+01	.....
M	35	965.16	957 -	973	964.58	3.85E+01	28.35	1.10E+02	.....
m	36	968.89	957 -	973	968.30	1.01E+02	32.55	1.07E+02	AC-228
	37	1120.49	1114 -	1124	1119.76	8.50E+01	38.11	1.48E+02	SC-46
									BI-214
									TA-182
M	38	1305.64	1299 -	1316	1304.75	2.60E+01	18.65	4.80E+01	.....
m	39	1313.42	1299 -	1316	1312.52	1.42E+01	19.08	4.80E+01	.....
	40	1380.77	1373 -	1387	1379.81	5.30E+01	22.29	3.00E+01	.....
	41	1409.85	1405 -	1413	1408.87	3.04E+01	13.29	7.29E+00	.....
	42	1461.15	1454 -	1466	1460.12	9.89E+02	68.33	8.13E+01	K-40
	43	1501.31	1497 -	1503	1500.25	1.28E+01	10.23	8.47E+00	.....
	44	1508.25	1504 -	1512	1507.18	1.15E+01	14.19	2.70E+01	.....
M	45	1540.58	1534 -	1548	1539.49	1.09E+01	11.52	8.16E+00	.....
m	46	1544.14	1534 -	1548	1543.05	7.23E+00	12.20	1.84E+01	.....
	47	1591.71	1585 -	1597	1590.58	2.24E+01	18.74	2.51E+01	.....
	48	1609.73	1605 -	1612	1608.58	8.30E+00	7.48	3.40E+00	.....
	49	1730.97	1725 -	1735	1729.72	2.25E+01	12.98	8.96E+00	.....
	50	1764.71	1758 -	1768	1763.43	5.47E+01	18.51	1.65E+01	BI-214
	51	1920.06	1915 -	1922	1918.67	9.00E+00	6.00	0.00E+00	.....
	52	2175.45	2171 -	2176	2173.88	8.00E+00	5.66	0.00E+00	.....
	53	2203.49	2197 -	2210	2201.90	1.78E+01	14.21	1.63E+01	BI-214
	54	2272.59	2268 -	2273	2270.95	7.50E+00	7.62	5.00E+00	.....
	55	2447.20	2440 -	2451	2445.44	1.80E+01	8.49	0.00E+00	.....
	56	2614.61	2606 -	2616	2612.75	9.45E+01	21.46	1.10E+01	TL-208

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

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 8/24/2017 11:42:21AM

Analysis Report for 1707091-12

HTC-A08-BKGD01-4248-01

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	76.26	1.09E+03	152.73	2.63E-02	2.11E-03
	2	93.15	1.53E+02	61.09	2.70E-02	2.33E-03
	3	114.67	1.11E+02	73.38	2.59E-02	1.92E-03
	4	142.14	5.89E+01	62.93	2.37E-02	1.70E-03
	5	185.80	1.37E+02	72.37	2.03E-02	1.53E-03
	6	208.89	6.07E+01	65.05	1.89E-02	1.43E-03
M	7	238.75	7.62E+02	68.88	1.72E-02	1.30E-03
m	8	241.82	1.47E+02	47.71	1.71E-02	1.28E-03
M	9	270.23	5.34E+01	42.27	1.58E-02	1.16E-03
m	10	276.92	5.13E+01	40.58	1.55E-02	1.13E-03
	11	295.13	2.47E+02	56.50	1.48E-02	1.10E-03
	12	300.21	6.23E+01	39.87	1.47E-02	1.09E-03
	13	338.27	1.66E+02	50.04	1.35E-02	1.04E-03
	14	351.86	3.75E+02	63.75	1.31E-02	1.02E-03
	15	377.59	3.42E+01	33.70	1.24E-02	9.87E-04
	16	462.94	5.64E+01	45.25	1.06E-02	9.07E-04
	17	511.03	1.64E+02	44.36	9.87E-03	8.65E-04
	18	562.41	3.83E+01	29.42	9.16E-03	8.20E-04
	19	583.26	2.46E+02	45.96	8.90E-03	8.02E-04
	20	609.34	3.46E+02	61.09	8.60E-03	7.80E-04
	21	699.43	5.40E+01	54.18	7.70E-03	6.98E-04
M	22	724.73	1.62E+01	18.11	7.49E-03	6.73E-04
m	23	727.36	6.91E+01	24.82	7.47E-03	6.71E-04
	24	755.59	3.69E+01	23.86	7.24E-03	6.43E-04
M	25	768.42	5.82E+01	26.71	7.14E-03	6.31E-04
m	26	771.44	2.38E+01	25.79	7.12E-03	6.28E-04
	27	782.82	6.09E+01	37.12	7.03E-03	6.17E-04
	28	794.08	4.78E+01	32.70	6.95E-03	6.06E-04
	29	829.85	2.29E+01	21.37	6.71E-03	5.72E-04
	30	861.75	8.10E+01	43.86	6.50E-03	5.41E-04
	31	895.81	3.26E+01	21.17	6.30E-03	5.08E-04
	32	911.37	1.93E+02	40.24	6.21E-03	5.02E-04
	33	934.46	4.42E+01	30.15	6.08E-03	4.93E-04
	34	944.14	2.43E+01	25.30	6.03E-03	4.90E-04
M	35	965.16	3.85E+01	28.35	5.92E-03	4.83E-04
m	36	968.89	1.01E+02	32.55	5.90E-03	4.81E-04
	37	1120.49	8.50E+01	38.11	5.24E-03	4.29E-04
M	38	1305.64	2.60E+01	18.65	4.64E-03	4.22E-04
m	39	1313.42	1.42E+01	19.08	4.62E-03	4.23E-04
	40	1380.77	5.30E+01	22.29	4.45E-03	4.11E-04
	41	1409.85	3.04E+01	13.29	4.38E-03	4.02E-04
	42	1461.15	9.89E+02	68.33	4.26E-03	3.88E-04
	43	1501.31	1.28E+01	10.23	4.18E-03	3.76E-04
	44	1508.25	1.15E+01	14.19	4.16E-03	3.74E-04
M	45	1540.58	1.09E+01	11.52	4.10E-03	3.65E-04
m	46	1544.14	7.23E+00	12.20	4.10E-03	3.64E-04
	47	1591.71	2.24E+01	18.74	4.01E-03	3.50E-04
	48	1609.73	8.30E+00	7.48	3.98E-03	3.45E-04
	49	1730.97	2.25E+01	12.98	3.79E-03	3.10E-04
	50	1764.71	5.47E+01	18.51	3.75E-03	3.00E-04
	51	1920.06	9.00E+00	6.00	3.57E-03	2.79E-04
	52	2175.45	8.00E+00	5.66	3.36E-03	2.79E-04
	53	2203.49	1.78E+01	14.21	3.34E-03	2.79E-04

Analysis Report for 1707091-12

HTC-A08-BKGD01-4248-01

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
54	2272.59	7.50E+00	7.62	3.30E-03	2.79E-04
55	2447.20	1.80E+01	8.49	3.23E-03	2.79E-04
56	2614.61	9.45E+01	21.46	3.20E-03	2.79E-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 : 8/24/2017 11:42:21AM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000055574.CNF

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	1	76.26	1.09E+03	152.73			1.09E+03	1.53E+02
	2	93.15	1.53E+02	61.09	4.88E+01	1.30E+00	1.04E+02	6.11E+01
	3	114.67	1.11E+02	73.38			1.11E+02	7.34E+01
	4	142.14	5.89E+01	62.93			5.89E+01	6.29E+01
	5	185.80	1.37E+02	72.37	3.48E+01	7.32E+00	1.02E+02	7.27E+01
	6	208.89	6.07E+01	65.05			6.07E+01	6.51E+01
M	7	238.75	7.62E+02	68.88	7.09E+00	6.85E+00	7.55E+02	6.92E+01
m	8	241.82	1.47E+02	47.71			1.47E+02	4.77E+01
M	9	270.23	5.34E+01	42.27			5.34E+01	4.23E+01
m	10	276.92	5.13E+01	40.58			5.13E+01	4.06E+01
	11	295.13	2.47E+02	56.50			2.47E+02	5.65E+01
	12	300.21	6.23E+01	39.87			6.23E+01	3.99E+01
	13	338.27	1.66E+02	50.04			1.66E+02	5.00E+01
	14	351.86	3.75E+02	63.75	1.04E+01	5.08E+00	3.65E+02	6.40E+01
	15	377.59	3.42E+01	33.70			3.42E+01	3.37E+01
	16	462.94	5.64E+01	45.25			5.64E+01	4.53E+01
	17	511.03	1.64E+02	44.36	7.08E+01	4.94E+00	9.31E+01	4.46E+01
	18	562.41	3.83E+01	29.42			3.83E+01	2.94E+01
	19	583.26	2.46E+02	45.96	5.65E+00	3.57E+00	2.40E+02	4.61E+01
	20	609.34	3.46E+02	61.09	1.07E+01	3.96E+00	3.35E+02	6.12E+01
	21	699.43	5.40E+01	54.18			5.40E+01	5.42E+01
M	22	724.73	1.62E+01	18.11			1.62E+01	1.81E+01
m	23	727.36	6.91E+01	24.82			6.91E+01	2.48E+01
	24	755.59	3.69E+01	23.86			3.69E+01	2.39E+01
M	25	768.42	5.82E+01	26.71			5.82E+01	2.67E+01
m	26	771.44	2.38E+01	25.79			2.38E+01	2.58E+01
	27	782.82	6.09E+01	37.12			6.09E+01	3.71E+01

Analysis Report for 1707091-12

HTC-A08-BKGD01-4248-01

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	28	794.08	4.78E+01	32.70			4.78E+01	3.27E+01
	29	829.85	2.29E+01	21.37			2.29E+01	2.14E+01
	30	861.75	8.10E+01	43.86			8.10E+01	4.39E+01
	31	895.81	3.26E+01	21.17			3.26E+01	2.12E+01
	32	911.37	1.93E+02	40.24	2.63E+00	2.49E+00	1.90E+02	4.03E+01
	33	934.46	4.42E+01	30.15			4.42E+01	3.01E+01
	34	944.14	2.43E+01	25.30			2.43E+01	2.53E+01
M	35	965.16	3.85E+01	28.35			3.85E+01	2.84E+01
m	36	968.89	1.01E+02	32.55			1.01E+02	3.26E+01
	37	1120.49	8.50E+01	38.11	2.45E+00	2.38E+00	8.26E+01	3.82E+01
M	38	1305.64	2.60E+01	18.65			2.60E+01	1.87E+01
m	39	1313.42	1.42E+01	19.08			1.42E+01	1.91E+01
	40	1380.77	5.30E+01	22.29			5.30E+01	2.23E+01
	41	1409.85	3.04E+01	13.29			3.04E+01	1.33E+01
	42	1461.15	9.89E+02	68.33	5.90E+00	2.63E+00	9.83E+02	6.84E+01
	43	1501.31	1.28E+01	10.23			1.28E+01	1.02E+01
	44	1508.25	1.15E+01	14.19			1.15E+01	1.42E+01
M	45	1540.58	1.09E+01	11.52			1.09E+01	1.15E+01
m	46	1544.14	7.23E+00	12.20			7.23E+00	1.22E+01
	47	1591.71	2.24E+01	18.74			2.24E+01	1.87E+01
	48	1609.73	8.30E+00	7.48			8.30E+00	7.48E+00
	49	1730.97	2.25E+01	12.98			2.25E+01	1.30E+01
	50	1764.71	5.47E+01	18.51	3.33E+00	1.73E+00	5.14E+01	1.86E+01
	51	1920.06	9.00E+00	6.00			9.00E+00	6.00E+00
	52	2175.45	8.00E+00	5.66			8.00E+00	5.66E+00
	53	2203.49	1.78E+01	14.21			1.78E+01	1.42E+01
	54	2272.59	7.50E+00	7.62			7.50E+00	7.62E+00
	55	2447.20	1.80E+01	8.49			1.80E+01	8.49E+00
	56	2614.61	9.45E+01	21.46	4.77E+00	1.52E+00	8.97E+01	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 : 8/24/2017 11:42:21AM

Ref. Peak Energy : 0.00 Reference Date :
Peak Ratio : 0.00 Uncertainty : 0.00
Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000055574.CNF

Corrected Area is: Original * Peak Ratio - Background

Analysis Report for 1707091-12

HTC-A08-BKGD01-4248-01

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	1	76.26	1.09E+03	152.73			1.09E+03	1.53E+02
	2	93.15	1.53E+02	61.09	4.88E+01	1.30E+00	1.04E+02	6.11E+01
	3	114.67	1.11E+02	73.38			1.11E+02	7.34E+01
	4	142.14	5.89E+01	62.93			5.89E+01	6.29E+01
	5	185.80	1.37E+02	72.37	3.48E+01	7.32E+00	1.02E+02	7.27E+01
	6	208.89	6.07E+01	65.05			6.07E+01	6.51E+01
M	7	238.75	7.62E+02	68.88	7.09E+00	6.85E+00	7.55E+02	6.92E+01
m	8	241.82	1.47E+02	47.71			1.47E+02	4.77E+01
M	9	270.23	5.34E+01	42.27			5.34E+01	4.23E+01
m	10	276.92	5.13E+01	40.58			5.13E+01	4.06E+01
	11	295.13	2.47E+02	56.50			2.47E+02	5.65E+01
	12	300.21	6.23E+01	39.87			6.23E+01	3.99E+01
	13	338.27	1.66E+02	50.04			1.66E+02	5.00E+01
	14	351.86	3.75E+02	63.75	1.04E+01	5.08E+00	3.65E+02	6.40E+01
	15	377.59	3.42E+01	33.70			3.42E+01	3.37E+01
	16	462.94	5.64E+01	45.25			5.64E+01	4.53E+01
	17	511.03	1.64E+02	44.36	7.08E+01	4.94E+00	9.31E+01	4.46E+01
	18	562.41	3.83E+01	29.42			3.83E+01	2.94E+01
	19	583.26	2.46E+02	45.96	5.65E+00	3.57E+00	2.40E+02	4.61E+01
	20	609.34	3.46E+02	61.09	1.07E+01	3.96E+00	3.35E+02	6.12E+01
	21	699.43	5.40E+01	54.18			5.40E+01	5.42E+01
M	22	724.73	1.62E+01	18.11			1.62E+01	1.81E+01
m	23	727.36	6.91E+01	24.82			6.91E+01	2.48E+01
	24	755.59	3.69E+01	23.86			3.69E+01	2.39E+01
M	25	768.42	5.82E+01	26.71			5.82E+01	2.67E+01
m	26	771.44	2.38E+01	25.79			2.38E+01	2.58E+01
	27	782.82	6.09E+01	37.12			6.09E+01	3.71E+01
	28	794.08	4.78E+01	32.70			4.78E+01	3.27E+01
	29	829.85	2.29E+01	21.37			2.29E+01	2.14E+01
	30	861.75	8.10E+01	43.86			8.10E+01	4.39E+01
	31	895.81	3.26E+01	21.17			3.26E+01	2.12E+01
	32	911.37	1.93E+02	40.24	2.63E+00	2.49E+00	1.90E+02	4.03E+01
	33	934.46	4.42E+01	30.15			4.42E+01	3.01E+01
	34	944.14	2.43E+01	25.30			2.43E+01	2.53E+01
M	35	965.16	3.85E+01	28.35			3.85E+01	2.84E+01
m	36	968.89	1.01E+02	32.55			1.01E+02	3.26E+01
	37	1120.49	8.50E+01	38.11	2.45E+00	2.38E+00	8.26E+01	3.82E+01
M	38	1305.64	2.60E+01	18.65			2.60E+01	1.87E+01
m	39	1313.42	1.42E+01	19.08			1.42E+01	1.91E+01
	40	1380.77	5.30E+01	22.29			5.30E+01	2.23E+01
	41	1409.85	3.04E+01	13.29			3.04E+01	1.33E+01
	42	1461.15	9.89E+02	68.33	5.90E+00	2.63E+00	9.83E+02	6.84E+01
	43	1501.31	1.28E+01	10.23			1.28E+01	1.02E+01
	44	1508.25	1.15E+01	14.19			1.15E+01	1.42E+01
M	45	1540.58	1.09E+01	11.52			1.09E+01	1.15E+01
m	46	1544.14	7.23E+00	12.20			7.23E+00	1.22E+01
	47	1591.71	2.24E+01	18.74			2.24E+01	1.87E+01
	48	1609.73	8.30E+00	7.48			8.30E+00	7.48E+00
	49	1730.97	2.25E+01	12.98			2.25E+01	1.30E+01
	50	1764.71	5.47E+01	18.51	3.33E+00	1.73E+00	5.14E+01	1.86E+01
	51	1920.06	9.00E+00	6.00			9.00E+00	6.00E+00
	52	2175.45	8.00E+00	5.66			8.00E+00	5.66E+00
	53	2203.49	1.78E+01	14.21			1.78E+01	1.42E+01
	54	2272.59	7.50E+00	7.62			7.50E+00	7.62E+00

Analysis Report for 1707091-12

HTC-A08-BKGD01-4248-01

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
55	2447.20	1.80E+01	8.49			1.80E+01	8.49E+00
56	2614.61	9.45E+01	21.46	4.77E+00	1.52E+00	8.97E+01	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 : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.982	1460.81	*	10.67	2.37E+01	2.76E+00
TL-208	0.888	583.14	*	30.22	9.80E-01	2.08E-01
		860.37		4.48		
		2614.66	*	35.85	8.59E-01	2.19E-01
BI-212	0.763	727.17	*	11.80	8.61E-01	3.19E-01
		1620.62		2.75		
PB-212	0.998	238.63	*	44.60	1.08E+00	1.28E-01
		300.09	*	3.41	1.37E+00	8.81E-01
BI-214	0.992	609.31	*	46.30	9.23E-01	1.88E-01
		1120.29	*	15.10	1.14E+00	5.38E-01
		1764.49	*	15.80	9.53E-01	3.53E-01
		2204.22	*	4.98	1.18E+00	9.43E-01
PB-214	0.999	295.21	*	19.19	9.53E-01	2.29E-01
		351.92	*	37.19	8.23E-01	1.58E-01
RA-224	0.893	240.98	*	3.95	2.40E+00	7.97E-01
RA-226	0.973	186.21	*	3.28	1.69E+00	3.31E+00
AC-228	0.991	338.32	*	11.40	1.19E+00	3.70E-01
		911.07	*	27.70	1.21E+00	2.75E-01
		969.11	*	16.60	1.13E+00	3.76E-01
CM-243	0.324	209.75	*	3.29	1.08E+00	1.16E+00
		228.14		10.60		
		277.60	*	14.00	2.61E-01	2.07E-01

Analysis Report for 1707091-12

HTC-A08-BKGD01-4248-01

* = 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 : 8/24/2017 11:42:21AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	76.26	3.01653E-01	7.03		
	2	93.15	2.89371E-02	29.33	Tol.	GA-67
	3	114.67	3.07048E-02	33.19		
	4	142.14	1.63542E-02	53.44		
M	9	270.23	1.48374E-02	39.57		
	15	377.59	9.49746E-03	49.29		
	16	462.94	1.56699E-02	40.11	Sum	
	17	511.03	2.58525E-02	23.98		
	18	562.41	1.06472E-02	38.38	Tol.	CS-134
	21	699.43	1.50000E-02	50.17		
M	22	724.73	4.49535E-03	55.96	Tol.	ZR-95
	24	755.59	1.02444E-02	32.35		
M	25	768.42	1.61747E-02	22.93	Sum	
m	26	771.44	6.60108E-03	54.27		
	27	782.82	1.69265E-02	30.46	Tol.	SB-127
	28	794.08	1.32908E-02	34.17		
	29	829.85	6.36409E-03	46.64		
	30	861.75	2.25000E-02	27.08		
	31	895.81	9.05555E-03	32.46		
	33	934.46	1.22830E-02	34.09	Sum	
	34	944.14	6.75449E-03	52.02		
M	35	965.16	1.06957E-02	36.81	Sum	
M	38	1305.64	7.21707E-03	35.90	Sum	
m	39	1313.42	3.94653E-03	67.14		
	40	1380.77	1.47222E-02	21.03		
	41	1409.85	8.43137E-03	21.88		
	43	1501.31	3.54575E-03	40.09		
	44	1508.25	3.19444E-03	61.68		
M	45	1540.58	3.02026E-03	52.98		
m	46	1544.14	2.00866E-03	84.33		
	47	1591.71	6.23016E-03	41.78	D-Esc	
	48	1609.73	2.30556E-03	45.08		
	49	1730.97	6.25514E-03	28.82		
	51	1920.06	2.50000E-03	33.33		

Analysis Report for 1707091-12

HTC-A08-BKGD01-4248-01

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
52	2175.45	2.22222E-03	35.36		
54	2272.59	2.08333E-03	50.77		
55	2447.20	5.00000E-03	23.57		

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	0.98	1460.81	*	10.67	2.37E+01	2.76E+00
TL-208	0.88	583.14	*	30.22	9.80E-01	2.08E-01
		860.37		4.48		
		2614.66	*	35.85	8.59E-01	2.19E-01
BI-212	0.76	727.17	*	11.80	8.61E-01	3.19E-01
		1620.62		2.75		
PB-212	0.99	238.63	*	44.60	1.08E+00	1.28E-01
		300.09	*	3.41	1.37E+00	8.81E-01
BI-214	0.99	609.31	*	46.30	9.23E-01	1.88E-01
		1120.29	*	15.10	1.14E+00	5.38E-01
		1764.49	*	15.80	9.53E-01	3.53E-01
		2204.22	*	4.98	1.18E+00	9.43E-01
PB-214	0.99	295.21	*	19.19	9.53E-01	2.29E-01
		351.92	*	37.19	8.23E-01	1.58E-01
RA-224	0.89	240.98	*	3.95	2.40E+00	7.97E-01
RA-226	0.97	186.21	*	3.28	1.69E+00	3.31E+00
AC-228	0.99	338.32	*	11.40	1.19E+00	3.70E-01
		911.07	*	27.70	1.21E+00	2.75E-01
		969.11	*	16.60	1.13E+00	3.76E-01
CM-243	0.32	209.75	*	3.29	1.08E+00	1.16E+00
		228.14		10.60		
		277.60	*	14.00	2.61E-01	2.07E-01

Analysis Report for 1707091-12

HTC-A08-BKGD01-4248-01

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

INTERFERENCE CORRECTED REPORT

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
K-40	0.982	2.37E+01	2.76E+00	
TL-208	0.888	9.23E-01	1.51E-01	
BI-212	0.763	8.61E-01	3.19E-01	
PB-212	0.998	1.08E+00	1.27E-01	
BI-214	0.992	9.54E-01	1.57E-01	
PB-214	0.999	8.65E-01	1.30E-01	
RA-224	0.893	2.40E+00	7.97E-01	
RA-226	0.973	1.69E+00	3.31E+00	
AC-228	0.991	1.18E+00	1.90E-01	
CM-243	0.324	2.86E-01	2.04E-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 1707091-12

HTC-A08-BKGD01-4248-01

UNIDENTIFIED PEAKS

Peak Locate Performed on : 8/24/2017 11:42:21AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	76.26	3.01653E-01	7.03		
	2	93.15	2.89371E-02	29.33	Tol.	GA-67
	3	114.67	3.07048E-02	33.19		
	4	142.14	1.63542E-02	53.44		
M	9	270.23	1.48374E-02	39.57		
	15	377.59	9.49746E-03	49.29		
	16	462.94	1.56699E-02	40.11	Sum	
	17	511.03	2.58525E-02	23.98		
	18	562.41	1.06472E-02	38.38	Tol.	CS-134
	21	699.43	1.50000E-02	50.17		
M	22	724.73	4.49535E-03	55.96	Tol.	ZR-95
	24	755.59	1.02444E-02	32.35		
M	25	768.42	1.61747E-02	22.93	Sum	
m	26	771.44	6.60108E-03	54.27		
	27	782.82	1.69265E-02	30.46	Tol.	SB-127
	28	794.08	1.32908E-02	34.17		
	29	829.85	6.36409E-03	46.64		
	30	861.75	2.25000E-02	27.08		
	31	895.81	9.05555E-03	32.46		
	33	934.46	1.22830E-02	34.09	Sum	
	34	944.14	6.75449E-03	52.02		
M	35	965.16	1.06957E-02	36.81	Sum	
M	38	1305.64	7.21707E-03	35.90	Sum	
m	39	1313.42	3.94653E-03	67.14		
	40	1380.77	1.47222E-02	21.03		
	41	1409.85	8.43137E-03	21.88		
	43	1501.31	3.54575E-03	40.09		
	44	1508.25	3.19444E-03	61.68		
M	45	1540.58	3.02026E-03	52.98		
m	46	1544.14	2.00866E-03	84.33		
	47	1591.71	6.23016E-03	41.78	D-Esc	
	48	1609.73	2.30556E-03	45.08		
	49	1730.97	6.25514E-03	28.82		
	51	1920.06	2.50000E-03	33.33		
	52	2175.45	2.22222E-03	35.36		

Analysis Report for 1707091-12

HTC-A08-BKGD01-4248-01

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
54	2272.59	2.08333E-03	50.77		
55	2447.20	5.00000E-03	23.57		

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

NUCLIDE MDA REPORT

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

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	BE-7	477.59		10.42	-1.26E+00	1.60E+00	1.60E+00
+	NA-22	1274.54		99.94	-2.74E-02	8.21E-02	8.21E-02
+	@ NA-24	1368.53		99.99	1.00E+26	1.00E+26	1.00E+26
	@	2754.09		99.86	1.00E+26		1.00E+26
+	AL-26	1808.65		99.76	-6.32E-04	5.41E-02	5.41E-02
+	K-40	1460.81	*	10.67	2.37E+01	1.15E+00	1.15E+00
+	@ AR-41	1293.64		99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88		94.40	5.24E-03	4.47E-02	4.47E-02
		78.34		96.00	2.03E-02		5.04E-02
+	SC-46	889.25		99.98	6.38E-02	1.35E-01	1.35E-01
		1120.51		99.99	3.92E-01		2.71E-01
+	V-48	983.52		99.98	-2.72E+00	5.20E+00	5.20E+00
		1312.10		97.50	2.59E+00		6.18E+00
+	CR-51	320.08		9.83	1.70E+00	5.73E+00	5.73E+00
+	MN-54	834.83		99.97	5.14E-03	8.21E-02	8.21E-02
+	CO-56	846.75		99.96	6.47E-02	1.58E-01	1.58E-01
		1037.75		14.03	-4.26E-01		1.24E+00
		1238.25		67.00	2.98E-01		4.05E-01
		1771.40		15.51	-3.58E-02		8.02E-01
		2598.48		16.90	-3.62E-01		3.63E-01
+	CO-57	122.06		85.51	7.19E-03	4.76E-02	4.76E-02
		136.48		10.60	-2.09E-02		4.99E-01
+	CO-58	810.76		99.40	-5.21E-02	1.61E-01	1.61E-01
+	FE-59	1099.22		56.50	3.22E-02	6.11E-01	6.11E-01
		1291.56		43.20	1.29E-01		8.26E-01
+	CO-60	1173.22		100.00	7.69E-02	7.72E-02	9.50E-02
		1332.49		100.00	3.16E-03		7.72E-02

Analysis Report for 1707091-12

HTC-A08-BKGD01-4248-01

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	ZN-65	1115.52	50.75	1.18E-02	2.25E-01	2.25E-01
+	GA-67	93.31	35.70	4.00E+08	2.33E+08	2.33E+08
		208.95	2.24	3.65E+09		4.65E+09
		300.22	16.00	6.26E+08		6.74E+08
+	SE-75	121.11	16.70	9.19E-03	1.28E-01	3.34E-01
		136.00	59.20	1.05E-01		1.28E-01
		264.65	59.80	2.87E-02		1.35E-01
		279.53	25.20	3.29E-02		3.22E-01
		400.65	11.40	6.82E-02		7.46E-01
+	RB-82	776.52	13.00	-5.97E+00	6.25E+00	6.25E+00
+	RB-83	520.41	46.00	2.20E-02	2.34E-01	2.34E-01
		529.64	30.30	1.77E-01		3.92E-01
		552.65	16.40	1.65E-02		6.43E-01
+	KR-85	513.99	0.43	-2.72E-01	1.31E+01	1.31E+01
+	SR-85	513.99	99.27	-3.43E-03	1.65E-01	1.65E-01
+	Y-88	898.02	93.40	5.95E-02	1.01E-01	1.37E-01
		1836.01	99.38	2.72E-03		1.01E-01
+	MO-93	263.06	56.72	1.58E-02	5.52E-02	8.13E-02
		684.67	99.68	5.56E-03		6.41E-02
		1477.11	99.08	2.80E-02		5.52E-02
+	NB-93M	16.57	9.43	0.00E+00	6.42E+00	6.42E+00
+	NB-94	702.63	100.00	2.42E-02	5.78E-02	6.66E-02
		871.10	100.00	7.34E-03		5.78E-02
+	NB-95	765.79	99.81	5.92E-02	5.48E-01	5.48E-01
+	NB-95M	235.69	25.00	-5.26E+08	6.75E+07	6.75E+07
+	ZR-95	724.18	43.70	-6.00E-02	3.48E-01	5.26E-01
		756.72	55.30	2.77E-02		3.48E-01
+	MO-99	181.06	6.20	-1.29E+08	5.11E+10	7.95E+10
		739.58	12.80	-9.74E+09		5.11E+10
		778.00	4.50	-2.72E+10		1.32E+11
+	RU-103	497.08	89.00	-4.34E-03	3.01E-01	3.01E-01
+	RU-106	621.84	9.80	-8.39E-02	6.70E-01	6.70E-01
+	AG-108M	433.93	89.90	1.29E-03	4.99E-02	4.99E-02
		614.37	90.40	6.96E-03		6.38E-02
		722.95	90.50	-3.66E-04		7.50E-02
+	CD-109	88.03	3.72	3.21E-01	1.35E+00	1.35E+00
+	AG-110M	657.75	93.14	2.21E-03	8.78E-02	8.78E-02
		677.61	10.53	-1.24E-01		7.69E-01
		706.67	16.46	1.25E-01		5.12E-01
		763.93	21.98	-7.65E-02		3.93E-01
		884.67	71.63	-1.73E-02		1.09E-01
		1384.27	23.94	1.43E-01		4.02E-01
+	CD-113M	263.70	0.02	-9.06E-01	1.95E+02	1.95E+02
+	SN-113	255.12	1.93	3.17E-01	1.22E-01	4.24E+00
		391.69	64.90	-6.12E-02		1.22E-01
+	TE123M	159.00	84.10	-1.14E-02	8.98E-02	8.98E-02
+	SB-124	602.71	97.87	5.54E-02	1.98E-01	1.98E-01
		645.85	7.26	-7.94E-01		2.51E+00

Analysis Report for 1707091-12

HTC-A08-BKGD01-4248-01

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	SB-124	722.78	11.10	-1.94E-01	1.98E-01	1.78E+00
		1691.02	49.00	2.82E-02		3.10E-01
+	I-125	35.49	6.49	-4.29E+01	5.74E+00	5.74E+00
+	SB-125	176.33	6.89	-1.38E-01	1.55E-01	6.50E-01
		427.89	29.33	-6.04E-02		1.55E-01
		463.38	10.35	4.22E-01		5.62E-01
		600.56	17.80	2.70E-02		3.48E-01
		635.90	11.32	-3.81E-03		5.60E-01
+	SB-126	414.70	83.30	1.47E+00	1.50E+01	1.50E+01
		666.33	99.60	-4.37E+00		1.72E+01
		695.00	99.60	1.21E+01		1.82E+01
		720.50	53.80	1.21E+00		3.05E+01
+	SN-126	87.57	37.00	2.78E-02	1.17E-01	1.17E-01
+	SB-127	473.00	25.00	1.14E+06	1.37E+07	1.46E+07
		685.20	35.70	1.33E+06		1.37E+07
		783.80	14.70	6.52E+06		3.58E+07
+	I-129	29.78	57.00	1.10E-01	3.72E-01	3.72E-01
		33.60	13.20	9.19E+00		1.98E+00
		39.58	7.52	2.99E-01		1.15E+00
+	I-131	284.30	6.05	9.62E+00	3.37E+02	4.35E+03
		364.48	81.20	8.28E+01		3.37E+02
		636.97	7.26	4.16E+02		4.99E+03
		722.89	1.80	-1.10E+02		2.26E+04
+	TE-132	49.72	13.10	4.92E+08	1.13E+08	7.86E+08
		228.16	88.00	4.68E+07		1.13E+08
+	BA-133	81.00	33.00	4.78E-02	7.34E-02	1.14E-01
		302.84	17.80	5.17E-02		2.78E-01
		356.01	60.00	-6.86E-03		7.34E-02
+	@ I-133	529.87	86.30	1.00E+26	1.00E+26	1.00E+26
+	XE-133	81.00	38.00	2.54E+04	6.04E+04	6.04E+04
+	CS-134	563.23	8.38	3.82E-01	7.02E-02	6.71E-01
		569.32	15.43	3.39E-02		3.09E-01
		604.70	97.60	1.20E-02		7.02E-02
		795.84	85.40	6.52E-02		9.37E-02
		801.93	8.73	1.82E-01		7.81E-01
+	CS-135	268.24	16.00	-1.35E-01	3.05E-01	3.05E-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	1.62E+01	1.32E+01	1.13E+02
		163.89	4.61	1.47E+01		1.88E+02
		176.55	13.56	-1.33E+01		6.28E+01
		273.65	12.66	-1.77E+02		6.89E+01
		340.57	48.50	-1.95E+01		2.11E+01
		818.50	99.70	1.96E+00		1.32E+01
		1048.07	79.60	-6.08E+00		1.68E+01
		1235.34	19.70	8.29E+01		1.16E+02
+	CS-137	661.65	85.12	-1.85E-02	7.34E-02	7.34E-02
+	LA-138	788.74	34.00	-5.91E-02	7.98E-02	1.91E-01

Analysis Report for 1707091-12

HTC-A08-BKGD01-4248-01

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	LA-138	1435.80	66.00	-5.33E-02	7.98E-02	7.98E-02
+	CE-139	165.85	80.35	-1.83E-02	8.87E-02	8.87E-02
+	BA-140	162.64	6.70	-1.88E+01	4.48E+01	1.50E+02
		304.84	4.50	1.21E+02		2.38E+02
		423.70	3.20	-5.68E+01		3.39E+02
		437.55	2.00	2.94E+02		5.72E+02
		537.32	25.00	-6.75E+00		4.48E+01
+	LA-140	328.77	20.50	3.35E+01	1.41E+01	5.91E+01
		487.03	45.50	6.58E+00		2.51E+01
		815.85	23.50	-5.56E+00		6.32E+01
		1596.49	95.49	0.00E+00		1.41E+01
+	CE-141	145.44	48.40	-4.12E-01	7.14E-01	7.14E-01
+	@ CE-143	57.36	11.80	1.00E+26	1.00E+26	1.00E+26
	@	293.26	42.00	1.00E+26		1.00E+26
	@	664.55	5.20	1.00E+26		1.00E+26
+	CE-144	133.54	10.80	-2.77E-01	3.74E-01	3.74E-01
+	PM-144	476.78	42.00	-1.02E-01	6.82E-02	1.30E-01
		618.01	98.60	2.55E-02		6.82E-02
		696.49	99.49	-1.44E-03		7.84E-02
+	PM-145	36.85	21.70	-2.07E-02	2.54E-01	4.81E-01
		37.36	39.70	1.21E-02		2.54E-01
		42.30	15.10	-2.48E-01		4.20E-01
		72.40	2.31	-9.74E+00		1.86E+00
+	PM-146	453.90	39.94	9.96E-04	1.12E-01	1.12E-01
		735.90	14.01	2.66E-02		4.60E-01
		747.13	13.10	1.75E-01		4.53E-01
+	ND-147	91.11	28.90	9.71E+01	8.13E+01	8.13E+01
		531.02	13.10	6.99E+01		2.34E+02
+	PM-149	285.90	3.10	-3.93E+12	7.67E+13	7.67E+13
+	EU-152	121.78	20.50	2.35E-02	1.55E-01	1.55E-01
		244.69	5.40	-4.51E-02		8.63E-01
		344.27	19.13	-2.00E-02		2.19E-01
		778.89	9.20	-1.22E-01		5.93E-01
		964.01	10.40	-1.05E+00		8.72E-01
		1085.78	7.22	1.89E-01		1.09E+00
		1112.02	9.60	3.04E-02		8.31E-01
		1407.95	14.94	-3.12E-02		5.00E-01
+	GD-153	97.43	31.30	4.01E-02	1.37E-01	1.37E-01
		103.18	22.20	-1.24E-01		1.73E-01
+	EU-154	123.07	40.50	7.79E-03	7.85E-02	7.85E-02
		723.30	19.70	-1.71E-03		3.52E-01
		873.19	11.50	1.18E-01		5.20E-01
		996.32	10.30	-9.18E-02		7.25E-01
		1004.76	17.90	-4.40E-02		3.43E-01
		1274.45	35.50	-7.32E-02		2.19E-01
+	EU-155	86.50	30.90	1.75E-01	1.45E-01	1.45E-01
		105.30	20.70	8.11E-02		1.62E-01
+	EU-156	811.77	10.40	-2.13E+01	5.75E+01	5.75E+01
		1153.47	7.20	1.23E+01		1.32E+02

Analysis Report for 1707091-12

HTC-A08-BKGD01-4248-01

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	EU-156	1230.71		8.90	-1.18E+01	5.75E+01	9.90E+01
+	HO-166M	184.41		72.60	1.22E-01	7.54E-02	7.54E-02
		280.45		29.60	-2.78E-03		1.46E-01
		410.94		11.10	1.12E-01		4.35E-01
		711.69		54.10	2.08E-02		1.04E-01
+	TM-171	66.72		0.14	-2.66E+01	3.24E+01	3.24E+01
+	HF-172	67.35		5.31	1.03E-01	3.06E-01	8.82E-01
		125.81		11.30	-6.06E-02		3.06E-01
+	LU-172	181.53		20.60	1.34E+03	4.32E+03	7.59E+03
		900.72		29.81	-1.10E+02		7.23E+03
		1093.66		62.50	2.16E+03		4.32E+03
+	LU-173	100.72		5.24	1.49E-01	2.69E-01	6.75E-01
		272.11		21.20	1.25E-01		2.69E-01
+	HF-175	343.40		84.00	2.98E-02	1.33E-01	1.33E-01
+	LU-176	88.34		13.30	6.26E-03	4.76E-02	3.21E-01
		201.83		86.00	5.52E-03		5.17E-02
		306.78		94.00	1.93E-02		4.76E-02
+	HF-181	133.02		41.70	8.32E-02	3.13E-01	4.05E-01
		345.85		17.20	-2.68E-01		1.37E+00
		482.03		82.80	7.80E-04		3.13E-01
+	TA-182	67.75		41.20	2.21E-02	1.88E-01	1.88E-01
		1121.30		34.90	7.52E-01		6.03E-01
		1189.05		16.23	-2.14E-01		9.35E-01
		1221.41		26.98	1.30E-01		6.12E-01
		1231.02		11.44	-1.69E-01		1.42E+00
+	IR-192	308.46		29.68	-2.10E-01	2.41E-01	3.77E-01
		468.07		48.10	-2.43E-02		2.41E-01
+	HG-203	279.19		77.30	1.76E-01	2.85E-01	2.85E-01
+	TL-204	374.74		94.11	1.54E-02	5.28E-02	5.28E-02
		899.15		99.16	-1.44E-02		6.72E-02
		911.74		91.10	3.90E-01		1.54E-01
+	BI-207	569.67		97.72	4.91E-03	4.47E-02	4.47E-02
		1063.62		74.90	2.83E-02		1.08E-01
+	TL-208	583.14	*	30.22	9.80E-01	1.87E-01	2.40E-01
		860.37		4.48	2.15E+00		1.88E+00
		2614.66	*	35.85	8.59E-01		1.87E-01
+	BI-210M	262.00		45.00	5.90E-03	1.01E-01	1.01E-01
		300.00		23.00	2.10E-01		2.26E-01
+	PB-210	46.50		4.25	4.89E-01	1.35E+00	1.35E+00
+	PB-211	404.84		2.90	3.21E-01	1.69E+00	1.69E+00
		831.96		2.90	-8.34E-01		2.12E+00
+	BI-212	727.17	*	11.80	8.61E-01	4.59E-01	4.59E-01
		1620.62		2.75	5.04E-02		1.76E+00
+	PB-212	238.63	*	44.60	1.08E+00	1.96E-01	1.96E-01
		300.09	*	3.41	1.37E+00		1.38E+00
+	BI-214	609.31	*	46.30	9.23E-01	2.30E-01	2.30E-01
		1120.29	*	15.10	1.14E+00		8.03E-01
		1764.49	*	15.80	9.53E-01		4.11E-01

Analysis Report for 1707091-12

HTC-A08-BKGD01-4248-01

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	BI-214	2204.22	*	4.98	1.18E+00	2.30E-01	1.42E+00
+	PB-214	295.21	*	19.19	9.53E-01	1.97E-01	3.08E-01
		351.92	*	37.19	8.23E-01		1.97E-01
+	RN-219	401.80		6.50	3.45E-02	7.31E-01	7.31E-01
+	RA-223	323.87		3.88	-4.09E-01	1.18E+00	1.18E+00
+	RA-224	240.98	*	3.95	2.40E+00	2.22E+00	2.22E+00
+	RA-225	40.00		31.00	7.96E+00	3.06E+01	3.06E+01
+	RA-226	186.21	*	3.28	1.69E+00	1.94E+00	1.94E+00
+	TH-227	50.10		8.40	3.59E-01	5.63E-01	5.74E-01
		236.00		11.50	-4.39E+00		5.63E-01
		256.20		6.30	8.49E-02		7.15E-01
+	AC-228	338.32	*	11.40	1.19E+00	3.26E-01	5.25E-01
		911.07	*	27.70	1.21E+00		3.26E-01
		969.11	*	16.60	1.13E+00		9.43E-01
+	TH-230	48.44		16.90	-4.60E-01	2.81E-01	2.81E-01
		62.85		4.60	6.81E-01		1.03E+00
		67.67		0.37	1.33E+00		1.14E+01
+	PA-231	283.67		1.60	6.05E-03	2.11E+00	2.73E+00
		302.67		2.30	3.93E-01		2.11E+00
+	TH-231	25.64		14.70	0.00E+00	1.14E-01	1.14E-01
		84.21		6.40	-8.21E-01		5.82E-01
+	PA-233	311.98		38.60	-2.75E-03	1.56E+00	1.56E+00
+	PA-234	131.20		20.40	3.04E-02	1.64E-01	1.64E-01
		733.99		8.80	3.83E-01		7.19E-01
		946.00		12.00	-7.31E-02		5.79E-01
+	PA-234M	1001.03		0.92	-9.57E-01	7.25E+00	7.25E+00
+	TH-234	63.29		3.80	1.09E+00	1.25E+00	1.25E+00
+	U-235	143.76		10.50	3.96E-01	4.10E-01	4.10E-01
		163.35		4.70	7.09E-02		9.05E-01
		205.31		4.70	7.07E-02		9.29E-01
+	NP-237	86.50		12.60	4.13E-01	3.41E-01	3.41E-01
+	NP-239	106.10		22.70	5.68E+11	1.14E+12	1.14E+12
		228.18		10.70	1.45E+12		3.51E+12
		277.60		14.10	1.18E+12		2.74E+12
+	AM-241	59.54		35.90	4.17E-04	1.22E-01	1.22E-01
+	AM-243	74.67		66.00	-1.01E-01	8.59E-02	8.59E-02
+	CM-243	209.75	*	3.29	1.08E+00	4.48E-01	1.90E+00
		228.14		10.60	1.85E-01		4.48E-01
		277.60	*	14.00	2.61E-01		7.61E-01

+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction
? = CAUTION: MDA value is inconsistent with Currie MDA at 95% confidence level

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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	1.60E+00	1.60E+00	-1.26E+00	7.51E-01
	NA-22	1274.54		99.94	8.21E-02	8.21E-02	-2.74E-02	3.77E-02
@	NA-24	1368.53		99.99	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		2754.09		99.86	1.00E+26		1.00E+26	1.00E+20
	AL-26	1808.65		99.76	5.41E-02	5.41E-02	-6.32E-04	2.30E-02
+	K-40	1460.81	*	10.67	1.15E+00	1.15E+00	2.37E+01	5.41E-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	4.47E-02	4.47E-02	5.24E-03	2.17E-02
		78.34		96.00	5.04E-02		2.03E-02	2.46E-02
	SC-46	889.25		99.98	1.35E-01	1.35E-01	6.38E-02	6.23E-02
		1120.51		99.99	2.71E-01		3.92E-01	1.29E-01
	V-48	983.52		99.98	5.20E+00	5.20E+00	-2.72E+00	2.40E+00
		1312.10		97.50	6.18E+00		2.59E+00	2.82E+00
	CR-51	320.08		9.83	5.73E+00	5.73E+00	1.70E+00	2.73E+00
	MN-54	834.83		99.97	8.21E-02	8.21E-02	5.14E-03	3.83E-02
	CO-56	846.75		99.96	1.58E-01	1.58E-01	6.47E-02	7.35E-02
		1037.75		14.03	1.24E+00		-4.26E-01	5.71E-01
		1238.25		67.00	4.05E-01		2.98E-01	1.91E-01
		1771.40		15.51	8.02E-01		-3.58E-02	3.39E-01
		2598.48		16.90	3.63E-01		-3.62E-01	1.15E-01
	CO-57	122.06		85.51	4.76E-02	4.76E-02	7.19E-03	2.29E-02
		136.48		10.60	4.99E-01		-2.09E-02	2.42E-01
	CO-58	810.76		99.40	1.61E-01	1.61E-01	-5.21E-02	7.49E-02
	FE-59	1099.22		56.50	6.11E-01	6.11E-01	3.22E-02	2.82E-01
		1291.56		43.20	8.26E-01		1.29E-01	3.78E-01
	CO-60	1173.22		100.00	9.50E-02	7.72E-02	7.69E-02	4.45E-02
		1332.49		100.00	7.72E-02		3.16E-03	3.52E-02
	ZN-65	1115.52		50.75	2.25E-01	2.25E-01	1.18E-02	1.05E-01
	GA-67	93.31		35.70	2.33E+08	2.33E+08	4.00E+08	1.14E+08
		208.95		2.24	4.65E+09		3.65E+09	2.25E+09
		300.22		16.00	6.74E+08		6.26E+08	3.24E+08
	SE-75	121.11		16.70	3.34E-01	1.28E-01	9.19E-03	1.61E-01
		136.00		59.20	1.28E-01		1.05E-01	6.19E-02
		264.65		59.80	1.35E-01		2.87E-02	6.49E-02
		279.53		25.20	3.22E-01		3.29E-02	1.54E-01
		400.65		11.40	7.46E-01		6.82E-02	3.53E-01
	RB-82	776.52		13.00	6.25E+00	6.25E+00	-5.97E+00	2.88E+00

Analysis Report for 1707091-12

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
RB-83	520.41	46.00	2.34E-01	2.34E-01	2.20E-02	1.10E-01
	529.64	30.30	3.92E-01		1.77E-01	1.84E-01
	552.65	16.40	6.43E-01		1.65E-02	2.99E-01
KR-85	513.99	0.43	1.31E+01	1.31E+01	-2.72E-01	6.18E+00
SR-85	513.99	99.27	1.65E-01	1.65E-01	-3.43E-03	7.81E-02
Y-88	898.02	93.40	1.37E-01	1.01E-01	5.95E-02	6.38E-02
	1836.01	99.38	1.01E-01		2.72E-03	4.28E-02
MO-93	263.06	56.72	8.13E-02	5.52E-02	1.58E-02	3.90E-02
	684.67	99.68	6.41E-02		5.56E-03	3.01E-02
	1477.11	99.08	5.52E-02		2.80E-02	2.40E-02
NB-93M	16.57	9.43	6.42E+00	6.42E+00	0.00E+00	0.00E+00
NB-94	702.63	100.00	6.66E-02	5.78E-02	2.42E-02	3.14E-02
	871.10	100.00	5.78E-02		7.34E-03	2.66E-02
NB-95	765.79	99.81	5.48E-01	5.48E-01	5.92E-02	2.59E-01
NB-95M	235.69	25.00	6.75E+07	6.75E+07	-5.26E+08	3.28E+07
ZR-95	724.18	43.70	5.26E-01	3.48E-01	-6.00E-02	2.49E-01
	756.72	55.30	3.48E-01		2.77E-02	1.63E-01
MO-99	181.06	6.20	7.95E+10	5.11E+10	-1.29E+08	3.85E+10
	739.58	12.80	5.11E+10		-9.74E+09	2.38E+10
	778.00	4.50	1.32E+11		-2.72E+10	6.10E+10
RU-103	497.08	89.00	3.01E-01	3.01E-01	-4.34E-03	1.41E-01
RU-106	621.84	9.80	6.70E-01	6.70E-01	-8.39E-02	3.14E-01
AG-108M	433.93	89.90	4.99E-02	4.99E-02	1.29E-03	2.34E-02
	614.37	90.40	6.38E-02		6.96E-03	3.00E-02
	722.95	90.50	7.50E-02		-3.66E-04	3.53E-02
CD-109	88.03	3.72	1.35E+00	1.35E+00	3.21E-01	6.58E-01
AG-110M	657.75	93.14	8.78E-02	8.78E-02	2.21E-03	4.13E-02
	677.61	10.53	7.69E-01		-1.24E-01	3.61E-01
	706.67	16.46	5.12E-01		1.25E-01	2.40E-01
	763.93	21.98	3.93E-01		-7.65E-02	1.84E-01
	884.67	71.63	1.09E-01		-1.73E-02	5.03E-02
	1384.27	23.94	4.02E-01		1.43E-01	1.83E-01
CD-113M	263.70	0.02	1.95E+02	1.95E+02	-9.06E-01	9.36E+01
SN-113	255.12	1.93	4.24E+00	1.22E-01	3.17E-01	2.03E+00
	391.69	64.90	1.22E-01		-6.12E-02	5.77E-02
TE123M	159.00	84.10	8.98E-02	8.98E-02	-1.14E-02	4.35E-02
SB-124	602.71	97.87	1.98E-01	1.98E-01	5.54E-02	9.32E-02
	645.85	7.26	2.51E+00		-7.94E-01	1.18E+00
	722.78	11.10	1.78E+00		-1.94E-01	8.31E-01
	1691.02	49.00	3.10E-01		2.82E-02	1.30E-01
I-125	35.49	6.49	5.74E+00	5.74E+00	-4.29E+01	2.78E+00
SB-125	176.33	6.89	6.50E-01	1.55E-01	-1.38E-01	3.14E-01
	427.89	29.33	1.55E-01		-6.04E-02	7.29E-02
	463.38	10.35	5.62E-01		4.22E-01	2.66E-01
	600.56	17.80	3.48E-01		2.70E-02	1.64E-01
	635.90	11.32	5.60E-01		-3.81E-03	2.63E-01
SB-126	414.70	83.30	1.50E+01	1.50E+01	1.47E+00	7.09E+00
	666.33	99.60	1.72E+01		-4.37E+00	8.07E+00
	695.00	99.60	1.82E+01		1.21E+01	8.55E+00
	720.50	53.80	3.05E+01		1.21E+00	1.42E+01
SN-126	87.57	37.00	1.17E-01	1.17E-01	2.78E-02	5.69E-02
SB-127	473.00	25.00	1.46E+07	1.37E+07	1.14E+06	6.83E+06
	685.20	35.70	1.37E+07		1.33E+06	6.44E+06

Analysis Report for 1707091-12

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
SB-127	783.80	14.70	3.58E+07	1.37E+07	6.52E+06	1.68E+07
I-129	29.78	57.00	3.72E-01	3.72E-01	1.10E-01	1.79E-01
	33.60	13.20	1.98E+00		9.19E+00	9.70E-01
	39.58	7.52	1.15E+00		2.99E-01	5.57E-01
I-131	284.30	6.05	4.35E+03	3.37E+02	9.62E+00	2.08E+03
	364.48	81.20	3.37E+02		8.28E+01	1.60E+02
	636.97	7.26	4.99E+03		4.16E+02	2.35E+03
	722.89	1.80	2.26E+04		-1.10E+02	1.07E+04
TE-132	49.72	13.10	7.86E+08	1.13E+08	4.92E+08	3.80E+08
	228.16	88.00	1.13E+08		4.68E+07	5.46E+07
BA-133	81.00	33.00	1.14E-01	7.34E-02	4.78E-02	5.51E-02
	302.84	17.80	2.78E-01		5.17E-02	1.33E-01
	356.01	60.00	7.34E-02		-6.86E-03	3.48E-02
@ I-133	529.87	86.30	1.00E+26	1.00E+26	1.00E+26	1.00E+20
XE-133	81.00	38.00	6.04E+04	6.04E+04	2.54E+04	2.93E+04
CS-134	563.23	8.38	6.71E-01	7.02E-02	3.82E-01	3.14E-01
	569.32	15.43	3.09E-01		3.39E-02	1.43E-01
	604.70	97.60	7.02E-02		1.20E-02	3.32E-02
	795.84	85.40	9.37E-02		6.52E-02	4.41E-02
	801.93	8.73	7.81E-01		1.82E-01	3.63E-01
CS-135	268.24	16.00	3.05E-01	3.05E-01	-1.35E-01	1.47E-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	1.13E+02	1.32E+01	1.62E+01	5.46E+01
	163.89	4.61	1.88E+02		1.47E+01	9.11E+01
	176.55	13.56	6.28E+01		-1.33E+01	3.04E+01
	273.65	12.66	6.89E+01		-1.77E+02	3.29E+01
	340.57	48.50	2.11E+01		-1.95E+01	1.01E+01
	818.50	99.70	1.32E+01		1.96E+00	6.15E+00
	1048.07	79.60	1.68E+01		-6.08E+00	7.73E+00
	1235.34	19.70	1.16E+02		8.29E+01	5.49E+01
CS-137	661.65	85.12	7.34E-02	7.34E-02	-1.85E-02	3.45E-02
LA-138	788.74	34.00	1.91E-01	7.98E-02	-5.91E-02	8.92E-02
	1435.80	66.00	7.98E-02		-5.33E-02	3.47E-02
CE-139	165.85	80.35	8.87E-02	8.87E-02	-1.83E-02	4.29E-02
BA-140	162.64	6.70	1.50E+02	4.48E+01	-1.88E+01	7.27E+01
	304.84	4.50	2.38E+02		1.21E+02	1.14E+02
	423.70	3.20	3.39E+02		-5.68E+01	1.60E+02
	437.55	2.00	5.72E+02		2.94E+02	2.70E+02
	537.32	25.00	4.48E+01		-6.75E+00	2.09E+01
LA-140	328.77	20.50	5.91E+01	1.41E+01	3.35E+01	2.83E+01
	487.03	45.50	2.51E+01		6.58E+00	1.18E+01
	815.85	23.50	6.32E+01		-5.56E+00	2.94E+01
	1596.49	95.49	1.41E+01		0.00E+00	6.14E+00
CE-141	145.44	48.40	7.14E-01	7.14E-01	-4.12E-01	3.46E-01
@ CE-143	57.36	11.80	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	293.26	42.00	1.00E+26		1.00E+26	1.00E+20
@	664.55	5.20	1.00E+26		1.00E+26	1.00E+20
CE-144	133.54	10.80	3.74E-01	3.74E-01	-2.77E-01	1.80E-01
PM-144	476.78	42.00	1.30E-01	6.82E-02	-1.02E-01	6.09E-02
	618.01	98.60	6.82E-02		2.55E-02	3.20E-02
	696.49	99.49	7.84E-02		-1.44E-03	3.69E-02

Analysis Report for 1707091-12

HTC-A08-BKGD01-4248-01

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
PM-145	36.85	21.70	4.81E-01	2.54E-01	-2.07E-02	2.33E-01
	37.36	39.70	2.54E-01		1.21E-02	1.23E-01
	42.30	15.10	4.20E-01		-2.48E-01	2.02E-01
	72.40	2.31	1.86E+00		-9.74E+00	9.03E-01
PM-146	453.90	39.94	1.12E-01	1.12E-01	9.96E-04	5.27E-02
	735.90	14.01	4.60E-01		2.66E-02	2.15E-01
	747.13	13.10	4.53E-01		1.75E-01	2.10E-01
ND-147	91.11	28.90	8.13E+01	8.13E+01	9.71E+01	3.96E+01
	531.02	13.10	2.34E+02		6.99E+01	1.10E+02
PM-149	285.90	3.10	7.67E+13	7.67E+13	-3.93E+12	3.66E+13
EU-152	121.78	20.50	1.55E-01	1.55E-01	2.35E-02	7.47E-02
	244.69	5.40	8.63E-01		-4.51E-02	4.15E-01
	344.27	19.13	2.19E-01		-2.00E-02	1.03E-01
	778.89	9.20	5.93E-01		-1.22E-01	2.73E-01
	964.01	10.40	8.72E-01		-1.05E+00	4.11E-01
	1085.78	7.22	1.09E+00		1.89E-01	5.08E-01
	1112.02	9.60	8.31E-01		3.04E-02	3.86E-01
	1407.95	14.94	5.00E-01		-3.12E-02	2.27E-01
GD-153	97.43	31.30	1.37E-01	1.37E-01	4.01E-02	6.63E-02
	103.18	22.20	1.73E-01		-1.24E-01	8.32E-02
EU-154	123.07	40.50	7.85E-02	7.85E-02	7.79E-03	3.78E-02
	723.30	19.70	3.52E-01		-1.71E-03	1.66E-01
	873.19	11.50	5.20E-01		1.18E-01	2.39E-01
	996.32	10.30	7.25E-01		-9.18E-02	3.37E-01
	1004.76	17.90	3.43E-01		-4.40E-02	1.57E-01
	1274.45	35.50	2.19E-01		-7.32E-02	1.01E-01
EU-155	86.50	30.90	1.45E-01	1.45E-01	1.75E-01	7.04E-02
	105.30	20.70	1.62E-01		8.11E-02	7.83E-02
EU-156	811.77	10.40	5.75E+01	5.75E+01	-2.13E+01	2.67E+01
	1153.47	7.20	1.32E+02		1.23E+01	6.19E+01
	1230.71	8.90	9.90E+01		-1.18E+01	4.61E+01
HO-166M	184.41	72.60	7.54E-02	7.54E-02	1.22E-01	3.67E-02
	280.45	29.60	1.46E-01		-2.78E-03	6.95E-02
	410.94	11.10	4.35E-01		1.12E-01	2.06E-01
	711.69	54.10	1.04E-01		2.08E-02	4.85E-02
TM-171	66.72	0.14	3.24E+01	3.24E+01	-2.66E+01	1.57E+01
HF-172	67.35	5.31	8.82E-01	3.06E-01	1.03E-01	4.29E-01
	125.81	11.30	3.06E-01		-6.06E-02	1.47E-01
LU-172	181.53	20.60	7.59E+03	4.32E+03	1.34E+03	3.68E+03
	900.72	29.81	7.23E+03		-1.10E+02	3.34E+03
	1093.66	62.50	4.32E+03		2.16E+03	2.01E+03
LU-173	100.72	5.24	6.75E-01	2.69E-01	1.49E-01	3.25E-01
	272.11	21.20	2.69E-01		1.25E-01	1.29E-01
HF-175	343.40	84.00	1.33E-01	1.33E-01	2.98E-02	6.27E-02
LU-176	88.34	13.30	3.21E-01	4.76E-02	6.26E-03	1.56E-01
	201.83	86.00	5.17E-02		5.52E-03	2.50E-02
	306.78	94.00	4.76E-02		1.93E-02	2.27E-02
HF-181	133.02	41.70	4.05E-01	3.13E-01	8.32E-02	1.95E-01
	345.85	17.20	1.37E+00		-2.68E-01	6.50E-01
	482.03	82.80	3.13E-01		7.80E-04	1.48E-01
TA-182	67.75	41.20	1.88E-01	1.88E-01	2.21E-02	9.15E-02
	1121.30	34.90	6.03E-01		7.52E-01	2.86E-01
	1189.05	16.23	9.35E-01		-2.14E-01	4.34E-01

Analysis Report for 1707091-12

HTC-A08-BKGD01-4248-01

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	TA-182	1221.41		26.98	6.12E-01	1.88E-01	1.30E-01	2.85E-01
		1231.02		11.44	1.42E+00		-1.69E-01	6.61E-01
	IR-192	308.46		29.68	3.77E-01	2.41E-01	-2.10E-01	1.79E-01
		468.07		48.10	2.41E-01		-2.43E-02	1.13E-01
	HG-203	279.19		77.30	2.85E-01	2.85E-01	1.76E-01	1.37E-01
	TL-204	374.74		94.11	5.28E-02	5.28E-02	1.54E-02	2.51E-02
		899.15		99.16	6.72E-02		-1.44E-02	3.11E-02
		911.74		91.10	1.54E-01		3.90E-01	7.42E-02
	BI-207	569.67		97.72	4.47E-02	4.47E-02	4.91E-03	2.07E-02
		1063.62		74.90	1.08E-01		2.83E-02	5.01E-02
+	TL-208	583.14	*	30.22	2.40E-01	1.87E-01	9.80E-01	1.14E-01
		860.37		4.48	1.88E+00		2.15E+00	8.88E-01
		2614.66	*	35.85	1.87E-01		8.59E-01	8.03E-02
	BI-210M	262.00		45.00	1.01E-01	1.01E-01	5.90E-03	4.84E-02
		300.00		23.00	2.26E-01		2.10E-01	1.09E-01
	PB-210	46.50		4.25	1.35E+00	1.35E+00	4.89E-01	6.52E-01
	PB-211	404.84		2.90	1.69E+00	1.69E+00	3.21E-01	8.01E-01
		831.96		2.90	2.12E+00		-8.34E-01	9.84E-01
+	BI-212	727.17	*	11.80	4.59E-01	4.59E-01	8.61E-01	2.13E-01
		1620.62		2.75	1.76E+00		5.04E-02	7.41E-01
+	PB-212	238.63	*	44.60	1.96E-01	1.96E-01	1.08E+00	9.60E-02
		300.09	*	3.41	1.38E+00		1.37E+00	6.61E-01
+	BI-214	609.31	*	46.30	2.30E-01	2.30E-01	9.23E-01	1.11E-01
		1120.29	*	15.10	8.03E-01		1.14E+00	3.83E-01
		1764.49	*	15.80	4.11E-01		9.53E-01	1.81E-01
		2204.22	*	4.98	1.42E+00		1.18E+00	6.20E-01
+	PB-214	295.21	*	19.19	3.08E-01	1.97E-01	9.53E-01	1.49E-01
		351.92	*	37.19	1.97E-01		8.23E-01	9.53E-02
	RN-219	401.80		6.50	7.31E-01	7.31E-01	3.45E-02	3.46E-01
	RA-223	323.87		3.88	1.18E+00	1.18E+00	-4.09E-01	5.63E-01
+	RA-224	240.98	*	3.95	2.22E+00	2.22E+00	2.40E+00	1.09E+00
	RA-225	40.00		31.00	3.06E+01	3.06E+01	7.96E+00	1.48E+01
+	RA-226	186.21	*	3.28	1.94E+00	1.94E+00	1.69E+00	9.46E-01
	TH-227	50.10		8.40	5.74E-01	5.63E-01	3.59E-01	2.77E-01
		236.00		11.50	5.63E-01		-4.39E+00	2.74E-01
		256.20		6.30	7.15E-01		8.49E-02	3.43E-01
+	AC-228	338.32	*	11.40	5.25E-01	3.26E-01	1.19E+00	2.53E-01
		911.07	*	27.70	3.26E-01		1.21E+00	1.54E-01
		969.11	*	16.60	9.43E-01		1.13E+00	4.56E-01
	TH-230	48.44		16.90	2.81E-01	2.81E-01	-4.60E-01	1.35E-01
		62.85		4.60	1.03E+00		6.81E-01	5.01E-01
		67.67		0.37	1.14E+01		1.33E+00	5.54E+00
	PA-231	283.67		1.60	2.73E+00	2.11E+00	6.05E-03	1.30E+00
		302.67		2.30	2.11E+00		3.93E-01	1.01E+00
	TH-231	25.64		14.70	1.14E-01	1.14E-01	0.00E+00	0.00E+00
		84.21		6.40	5.82E-01		-8.21E-01	2.83E-01
	PA-233	311.98		38.60	1.56E+00	1.56E+00	-2.75E-03	7.45E-01
	PA-234	131.20		20.40	1.64E-01	1.64E-01	3.04E-02	7.89E-02
		733.99		8.80	7.19E-01		3.83E-01	3.37E-01
		946.00		12.00	5.79E-01		-7.31E-02	2.69E-01
	PA-234M	1001.03		0.92	7.25E+00	7.25E+00	-9.57E-01	3.34E+00
	TH-234	63.29		3.80	1.25E+00	1.25E+00	1.09E+00	6.10E-01
	U-235	143.76		10.50	4.10E-01	4.10E-01	3.96E-01	1.99E-01

Analysis Report for 1707091-12

HTC-A08-BKGD01-4248-01

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	U-235	163.35		4.70	9.05E-01	4.10E-01	7.09E-02	4.38E-01
		205.31		4.70	9.29E-01		7.07E-02	4.48E-01
	NP-237	86.50		12.60	3.41E-01	3.41E-01	4.13E-01	1.66E-01
	NP-239	106.10		22.70	1.14E+12	1.14E+12	5.68E+11	5.48E+11
		228.18		10.70	3.51E+12		1.45E+12	1.69E+12
		277.60		14.10	2.74E+12		1.18E+12	1.31E+12
	AM-241	59.54		35.90	1.22E-01	1.22E-01	4.17E-04	5.91E-02
	AM-243	74.67		66.00	8.59E-02	8.59E-02	-1.01E-01	4.21E-02
+	CM-243	209.75	*	3.29	1.90E+00	4.48E-01	1.08E+00	9.25E-01
		228.14		10.60	4.48E-01		1.85E-01	2.16E-01
		277.60	*	14.00	7.61E-01		2.61E-01	3.74E-01

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

No Action Level results available for reporting purposes.

DATA REVIEW COMMENTS REPORT

Creation Date	Comment	User

No Data Review Comments Entered.

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

Sample Title: HTC-A08-BKGD01-4248-01

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	0	0	0	0	0	0
25:	0	0	0	0	42	87	112	128
33:	248	698	89	101	106	91	106	99
41:	114	103	69	61	84	77	157	56
49:	88	89	94	83	100	83	85	101
57:	89	105	116	113	122	123	151	182
65:	134	127	134	110	156	131	128	137
73:	144	155	422	232	425	356	109	134
81:	120	96	102	120	146	97	192	200
89:	103	179	145	103	192	158	76	80
97:	95	78	94	82	90	69	66	73
105:	84	92	86	75	91	94	55	66
113:	85	74	96	98	82	61	74	70
121:	78	74	73	72	67	85	64	79
129:	99	84	78	78	64	81	65	92
137:	78	59	57	65	68	89	86	71
145:	53	73	50	71	95	60	49	60
153:	66	81	62	62	59	63	64	72
161:	59	68	69	58	59	60	63	73
169:	64	72	69	57	61	52	58	52
177:	50	62	54	63	60	66	60	70
185:	71	169	84	51	57	61	59	52
193:	48	45	56	43	55	59	54	64
201:	48	45	54	52	49	52	40	56
209:	109	65	52	50	56	39	45	66
217:	61	44	47	48	44	45	43	55
225:	51	46	55	51	43	56	39	44
233:	47	34	41	52	58	275	582	106
241:	102	140	56	41	39	45	34	42
249:	46	32	33	37	34	39	36	41
257:	40	37	39	38	42	33	30	47
265:	36	33	39	40	38	64	60	40
273:	25	27	36	30	65	47	29	29
281:	33	33	30	34	29	30	30	30
289:	32	17	29	22	27	53	182	112
297:	30	23	40	60	52	31	27	30
305:	36	27	30	21	32	21	32	38
313:	31	23	27	24	18	30	20	27
321:	31	31	29	25	28	28	33	50
329:	39	25	26	27	28	22	19	26
337:	33	102	77	26	19	16	20	24
345:	23	20	27	30	25	33	107	273
353:	74	23	23	27	22	13	22	21
361:	20	26	23	21	19	27	21	21

369:	21	21	23	25	24	27	15	30

Sample Title: HTC-A08-BKGD01-4248-01

Channel								
377:	24	27	26	9	17	25	17	26
385:	24	20	22	22	24	18	28	15
393:	19	13	23	29	28	18	23	16
401:	21	21	28	23	20	22	22	21
409:	21	25	20	25	18	18	18	22
417:	14	12	16	17	17	21	15	14
425:	26	16	22	12	16	12	15	13
433:	21	14	22	15	18	19	24	15
441:	27	21	18	20	17	14	14	16
449:	19	16	22	14	16	16	16	12
457:	12	12	15	14	20	15	39	27
465:	14	17	14	14	13	18	20	14
473:	21	17	9	15	16	18	16	24
481:	23	13	12	18	16	21	19	14
489:	12	13	14	13	14	10	10	21
497:	11	17	11	16	15	15	11	13
505:	19	20	13	12	31	58	82	45
513:	22	9	13	14	13	14	15	17
521:	14	13	12	16	11	16	15	12
529:	20	17	23	14	12	16	14	16
537:	15	10	12	13	17	13	21	15
545:	15	18	20	10	16	12	18	9
553:	7	17	11	13	23	15	11	15
561:	14	28	13	12	7	5	12	5
569:	10	11	13	11	13	11	13	15
577:	19	10	13	14	13	41	172	59
585:	15	13	11	12	12	16	12	11
593:	12	9	13	17	13	9	16	9
601:	11	19	9	11	19	16	15	77
609:	181	115	23	8	10	8	13	14
617:	6	9	10	11	12	4	12	11
625:	11	15	12	11	17	9	10	7
633:	14	10	12	14	12	10	10	17
641:	11	14	7	7	9	10	15	11
649:	15	13	12	10	7	13	11	15
657:	12	9	13	12	18	11	13	9
665:	15	13	7	11	12	12	12	11
673:	12	13	7	8	9	18	8	16
681:	8	18	8	11	11	15	11	8
689:	13	8	9	7	13	6	18	15
697:	12	13	7	7	23	13	15	16
705:	8	8	9	10	14	8	6	3
713:	9	11	9	5	10	10	7	15
721:	10	6	6	16	12	23	42	22
729:	6	7	8	11	10	12	10	11
737:	12	6	10	8	12	4	9	10
745:	11	11	10	3	9	4	8	4
753:	8	18	15	13	9	8	2	17
761:	7	6	10	12	9	13	17	30
769:	22	7	16	13	10	4	4	1
777:	4	15	7	9	7	8	9	15
785:	16	12	11	6	4	9	11	9
793:	14	18	19	15	5	7	8	5

801:	5	11	9	16	9	9	9	5

Sample Title: HTC-A08-BKGD01-4248-01

Channel								
809:	11	6	8	9	7	9	11	10
817:	9	5	11	10	8	8	9	7
825:	6	4	6	12	9	10	9	6
833:	3	7	14	16	9	7	15	13
841:	8	6	6	10	12	5	14	5
849:	9	6	6	5	7	6	4	4
857:	11	11	17	17	24	16	7	8
865:	9	10	7	6	7	3	7	7
873:	4	11	9	5	6	7	5	6
881:	7	3	10	3	5	8	10	11
889:	7	6	2	1	9	6	13	12
897:	8	9	2	8	6	7	11	12
905:	8	6	8	8	21	60	86	49
913:	14	6	9	7	7	13	7	9
921:	8	10	8	6	5	4	13	5
929:	7	8	8	13	9	14	12	11
937:	10	4	5	10	4	8	11	16
945:	8	7	4	4	12	8	5	7
953:	5	5	6	8	8	8	5	9
961:	5	12	13	24	26	7	19	56
969:	40	13	9	9	5	10	9	7
977:	12	7	11	5	9	7	8	6
985:	8	4	11	8	11	8	6	6
993:	11	6	10	15	6	6	5	14
1001:	8	5	4	5	3	7	6	3
1009:	4	10	8	8	3	8	6	11
1017:	6	2	9	11	9	6	4	6
1025:	7	8	8	8	11	6	5	7
1033:	12	7	7	8	7	10	5	8
1041:	4	14	5	4	10	4	3	7
1049:	9	6	9	4	10	6	12	11
1057:	9	8	9	11	4	14	8	10
1065:	7	10	9	5	8	8	7	0
1073:	9	5	9	7	3	12	7	7
1081:	12	8	9	5	6	9	12	9
1089:	5	6	4	10	12	9	8	10
1097:	4	5	6	5	7	11	7	3
1105:	7	10	9	2	9	15	7	9
1113:	10	5	10	8	12	14	25	36
1121:	22	13	10	4	8	6	5	5
1129:	3	13	8	8	8	6	8	7
1137:	9	9	11	8	5	12	9	12
1145:	10	10	10	8	8	11	11	12
1153:	12	8	17	9	15	11	12	9
1161:	7	16	8	15	11	8	3	6
1169:	12	10	9	15	11	9	6	6
1177:	6	17	11	12	15	11	10	9
1185:	5	7	11	7	10	9	7	8
1193:	10	12	4	12	9	8	10	9
1201:	5	8	8	7	4	6	7	9
1209:	7	15	12	20	10	4	14	12
1217:	9	11	9	6	8	14	5	11
1225:	6	6	7	7	7	5	15	11

1233:	9	12	13	15	21	21	11	7

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Channel								
1241:	9	8	9	9	11	9	10	4
1249:	9	1	6	10	6	3	5	9
1257:	10	9	5	5	3	7	7	9
1265:	5	11	13	2	13	7	5	5
1273:	7	6	4	8	7	6	5	7
1281:	3	6	6	8	6	6	6	2
1289:	8	9	3	6	7	4	4	4
1297:	2	5	1	5	2	6	3	2
1305:	14	6	3	3	7	5	7	5
1313:	9	3	4	2	4	2	8	5
1321:	6	3	2	7	3	2	5	3
1329:	6	3	6	6	5	3	8	9
1337:	3	8	3	0	3	3	5	3
1345:	6	3	4	1	2	4	2	2
1353:	1	1	5	1	2	4	3	1
1361:	1	6	2	1	3	2	3	2
1369:	2	4	4	2	0	1	5	5
1377:	10	9	4	6	5	4	3	8
1385:	3	4	1	1	3	1	3	5
1393:	3	5	2	2	2	2	2	3
1401:	5	4	2	1	1	3	5	10
1409:	6	1	4	4	0	0	0	2
1417:	2	3	3	2	1	2	4	3
1425:	4	1	3	2	5	4	1	2
1433:	2	0	1	3	3	2	1	0
1441:	4	1	1	3	4	3	2	1
1449:	1	0	3	3	4	6	5	7
1457:	16	64	183	364	297	74	11	1
1465:	1	1	2	1	3	0	1	2
1473:	1	5	3	0	0	2	0	2
1481:	1	0	3	3	2	0	2	3
1489:	1	1	3	3	2	1	3	2
1497:	1	2	4	3	6	1	0	0
1505:	2	7	2	5	7	1	1	0
1513:	5	2	2	3	2	0	6	2
1521:	2	4	0	2	1	4	3	1
1529:	0	1	1	2	0	0	1	0
1537:	0	2	3	5	2	1	4	2
1545:	2	2	1	0	3	0	0	3
1553:	2	2	2	1	2	4	3	3
1561:	2	0	1	2	1	0	2	3
1569:	3	2	1	1	0	5	1	2
1577:	0	2	1	1	1	3	4	3
1585:	2	0	8	5	4	3	1	2
1593:	2	4	2	2	0	0	2	1
1601:	1	2	0	1	0	1	1	4
1609:	2	1	1	0	0	1	1	1
1617:	1	2	0	1	2	2	0	2
1625:	1	0	4	1	3	4	3	3
1633:	2	2	1	1	4	1	2	1
1641:	1	1	2	1	1	2	0	2
1649:	1	0	0	1	1	0	0	0
1657:	1	0	2	1	1	2	1	1

1665:	0	2	2	0	0	0	0	0

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Channel								
1673:	2	1	2	2	1	2	2	3
1681:	1	0	0	3	0	0	1	3
1689:	0	1	0	0	3	1	0	1
1697:	1	1	0	1	1	0	0	1
1705:	0	2	1	0	3	1	1	1
1713:	2	0	2	1	1	1	1	0
1721:	0	1	0	2	0	2	1	7
1729:	4	7	2	1	1	2	0	0
1737:	2	2	0	2	1	0	1	0
1745:	0	0	0	0	2	1	0	2
1753:	3	0	0	0	1	0	1	1
1761:	3	6	22	17	9	3	1	0
1769:	2	0	1	1	1	1	1	0
1777:	2	1	2	1	1	1	1	2
1785:	0	0	1	1	1	1	4	1
1793:	2	0	0	2	1	2	0	2
1801:	2	2	0	1	1	3	3	1
1809:	0	2	0	1	0	1	2	0
1817:	2	0	2	0	1	1	1	1
1825:	1	1	0	1	0	1	1	1
1833:	1	2	1	2	1	0	1	1
1841:	1	2	1	0	0	2	3	5
1849:	0	0	2	2	0	0	1	2
1857:	2	1	0	2	1	1	1	2
1865:	0	0	0	1	3	0	1	1
1873:	3	2	0	0	1	0	1	1
1881:	1	0	3	2	1	0	1	2
1889:	0	1	1	2	1	0	1	1
1897:	2	0	0	1	1	1	1	2
1905:	0	0	1	1	0	0	0	2
1913:	0	0	0	0	2	2	3	1
1921:	1	0	0	0	1	0	2	2
1929:	0	0	2	0	0	0	0	1
1937:	1	0	0	0	1	0	1	1
1945:	1	1	3	0	2	2	2	1
1953:	1	0	0	1	1	1	1	1
1961:	1	0	1	1	3	1	0	1
1969:	2	0	1	0	1	2	0	1
1977:	1	1	0	1	2	2	1	1
1985:	1	0	0	0	2	0	0	0
1993:	1	0	0	0	1	1	1	1
2001:	1	0	0	0	0	2	0	3
2009:	3	1	0	3	1	1	1	0
2017:	0	1	2	1	1	0	2	0
2025:	1	0	2	1	1	1	1	0
2033:	0	1	0	0	0	2	1	1
2041:	1	1	0	1	0	1	1	1
2049:	0	0	1	1	1	1	0	1
2057:	3	0	0	1	0	1	1	0
2065:	2	0	1	2	0	1	1	0
2073:	1	1	1	0	1	3	1	1
2081:	2	1	3	2	2	0	0	3
2089:	0	2	2	0	2	3	0	0

2097:	1	0	4	4	1	5	3	2

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

2529:	0	0	0	1	0	0	0	0

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Channel								
2537:	0	1	0	1	1	0	0	0
2545:	2	0	0	1	0	0	0	0
2553:	0	1	0	1	0	0	0	0
2561:	0	0	0	0	0	0	0	0
2569:	2	1	0	0	0	1	0	0
2577:	0	0	1	1	0	0	0	0
2585:	0	0	0	0	0	1	1	0
2593:	0	0	0	0	0	0	0	1
2601:	0	0	2	0	1	0	1	2
2609:	3	4	14	18	20	23	15	0
2617:	1	0	0	0	0	0	0	0
2625:	1	0	0	1	0	0	1	0
2633:	0	1	0	1	0	0	0	1
2641:	0	1	0	0	0	0	1	0
2649:	1	0	0	1	0	0	1	0
2657:	0	0	0	1	2	1	0	0
2665:	0	0	0	0	0	0	0	0
2673:	0	0	0	0	0	0	0	1
2681:	1	0	0	0	0	0	0	0
2689:	0	0	0	0	0	0	0	0
2697:	1	1	0	0	0	0	0	0
2705:	0	0	0	0	0	0	0	1
2713:	0	0	0	0	0	0	0	0
2721:	1	0	1	0	0	0	0	0
2729:	0	0	0	0	1	0	0	1
2737:	0	1	0	1	2	1	0	0
2745:	1	0	1	0	0	0	1	0
2753:	0	0	1	1	0	0	0	0
2761:	0	0	0	1	1	0	0	0
2769:	0	0	0	0	0	0	0	0
2777:	0	0	0	0	0	0	0	1
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	1	0	0	0	0	0	0
2817:	0	0	1	0	1	0	0	1
2825:	0	0	1	0	0	0	1	0
2833:	0	0	0	0	0	0	1	1
2841:	0	0	0	0	1	0	1	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	0	0
2873:	0	0	1	1	1	1	0	1
2881:	0	0	1	0	2	1	0	1
2889:	1	1	0	1	0	0	0	0
2897:	0	2	1	0	0	1	0	0
2905:	0	1	1	0	0	0	0	0
2913:	0	0	0	0	0	0	0	0
2921:	0	0	0	0	0	0	0	0
2929:	0	0	1	0	0	0	0	0
2937:	0	0	0	0	1	0	0	0
2945:	0	1	1	0	0	0	1	0
2953:	0	0	0	0	0	1	0	0

2961:	0	0	0	1	1	0	0	0

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

3393:	0	0	0	1	1	0	0	0

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

3825:	0	0	0	0	0	0	0	0

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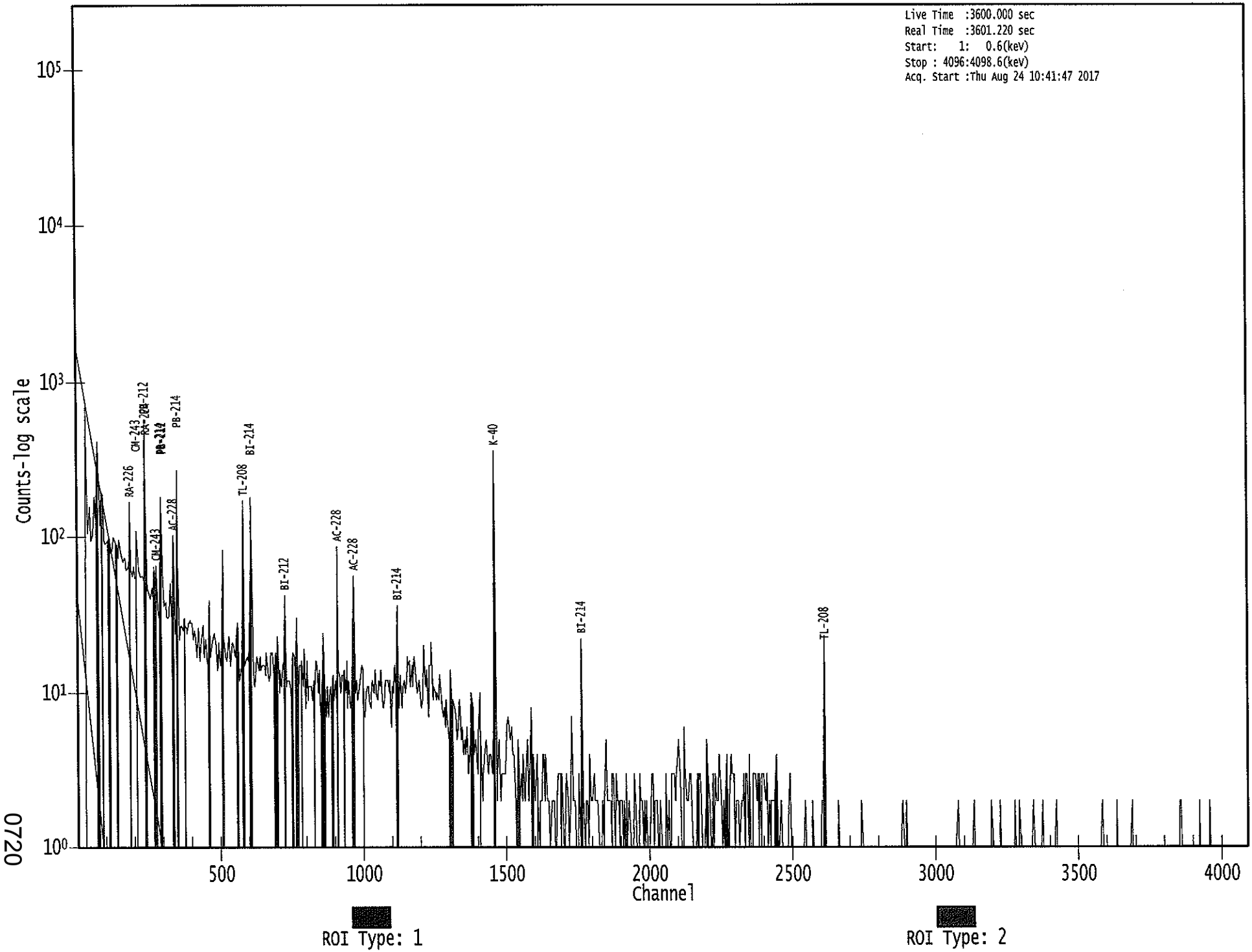
Channel								
3833:	0	0	0	0	0	0	0	0
3841:	0	0	0	0	0	1	0	0
3849:	0	1	0	1	0	0	2	0
3857:	0	0	2	0	0	0	0	0
3865:	0	0	0	0	1	0	0	0
3873:	0	0	0	0	0	0	0	0
3881:	0	0	0	0	0	0	1	0
3889:	1	0	0	0	0	0	0	0
3897:	0	0	1	0	0	0	0	0
3905:	1	0	0	0	1	0	0	0
3913:	0	0	1	0	0	0	0	0
3921:	0	0	2	0	0	0	0	0
3929:	0	0	0	0	1	0	0	0
3937:	0	0	0	0	0	0	0	0
3945:	0	0	0	1	1	0	0	0
3953:	0	0	0	0	0	0	2	0
3961:	0	0	0	0	0	0	0	0
3969:	0	0	0	0	0	0	0	0
3977:	0	0	0	0	0	0	1	0
3985:	1	1	0	0	0	0	0	0
3993:	0	0	0	1	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	1
4033:	0	0	0	0	0	0	0	0
4041:	0	0	0	0	0	1	0	0
4049:	0	0	1	0	0	0	0	0
4057:	0	0	0	0	0	0	0	0
4065:	0	0	0	0	0	1	0	0
4073:	0	1	0	0	0	0	0	0
4081:	0	0	0	0	0	0	0	0
4089:	0	0	0	0	0	0	0	0

0000055892.CNF



0720

Apex-Gamma

Analysis Report for 1707091-13
HTC-A08-BKGD02-0006-01

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 1707091-13
Sample Description	: HTC-A08-BKGD02-0006-01
Sample Type	: SOIL
Sample Size	: 6.408E+02 grams
Facility	: Countroom
Sample Taken On	: 5/15/2017 12:57:32PM
Acquisition Started	: 8/24/2017 10:57:00AM
Procedure	: GAS-1602 pCi
Operator	: Administrator
Detector Name	: GE4
Geometry	: GAS-1602
Live Time	: 3600.0 seconds
Real Time	: 3602.0 seconds
Dead Time	: 0.06 %
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	: 1/14/2017
Efficiency Calibration Used Done On	: 1/14/2017
Efficiency Calibration Description	:
Sample Number	: 55894

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

Analysis Report for 1707091-13

HTC-A08-BKGD02-0006-01

PEAK LOCATE REPORT

Peak Locate Performed on : 8/24/2017 11:57:04AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096
Peak Search Sensitivity : 2.50

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
1	63.45	62.50	0.0000	0.00
2	75.99	75.05	0.0000	0.00
3	87.19	86.26	0.0000	0.00
4	92.86	91.93	0.0000	0.00
5	129.31	128.38	0.0000	0.00
6	172.81	171.90	0.0000	0.00
7	185.99	185.08	0.0000	0.00
8	239.55	238.66	0.0000	0.00
9	269.64	268.76	0.0000	0.00
10	294.95	294.07	0.0000	0.00
11	300.57	299.70	0.0000	0.00
12	328.12	327.26	0.0000	0.00
13	338.31	337.45	0.0000	0.00
14	352.08	351.23	0.0000	0.00
15	480.25	479.44	0.0000	0.00
16	506.07	505.27	0.0000	0.00
17	510.69	509.89	0.0000	0.00
18	562.55	561.77	0.0000	0.00
19	583.01	582.24	0.0000	0.00
20	609.25	608.49	0.0000	0.00
21	661.61	660.87	0.0000	0.00
22	727.36	726.65	0.0000	0.00
23	763.28	762.58	0.0000	0.00
24	769.99	769.30	0.0000	0.00
25	910.42	909.78	0.0000	0.00
26	933.12	932.49	0.0000	0.00
27	942.62	942.00	0.0000	0.00
28	954.62	954.00	0.0000	0.00
29	969.74	969.13	0.0000	0.00
30	1031.68	1031.09	0.0000	0.00
31	1119.29	1118.75	0.0000	0.00
32	1246.38	1245.89	0.0000	0.00
33	1335.36	1334.92	0.0000	0.00
34	1347.44	1347.00	0.0000	0.00
35	1460.61	1460.23	0.0000	0.00
36	1507.23	1506.88	0.0000	0.00
37	1556.20	1555.88	0.0000	0.00
38	1570.70	1570.38	0.0000	0.00
39	1589.06	1588.75	0.0000	0.00
40	1653.28	1653.00	0.0000	0.00
41	1660.52	1660.25	0.0000	0.00
42	1741.57	1741.34	0.0000	0.00

Analysis Report for 1707091-13

HTC-A08-BKGD02-0006-01

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
43	1747.85	1747.62	0.0000	0.00
44	1764.27	1764.06	0.0000	0.00
45	1959.51	1959.41	0.0000	0.00
46	2103.45	2103.44	0.0000	0.00
47	2112.01	2112.00	0.0000	0.00
48	2120.41	2120.40	0.0000	0.00
49	2614.30	2614.62	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1707091-13

HTC-A08-BKGD02-0006-01

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 8/24/2017 11:57:04AM

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

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
M	1	63.45	56 -	79	62.50	2.81E+02	141.55	2.14E+03	4.19
m	2	75.99	56 -	79	75.05	1.01E+03	119.17	1.55E+03	4.22
M	3	87.19	82 -	97	86.26	2.40E+02	105.16	1.60E+03	3.52
m	4	92.86	82 -	97	91.93	2.96E+02	113.84	1.52E+03	3.43
	5	129.31	125 -	131	128.38	8.67E+01	68.33	7.77E+02	2.83
	6	172.81	168 -	175	171.90	7.24E+01	64.09	6.29E+02	3.28
	7	185.99	181 -	188	185.08	1.51E+02	68.99	6.85E+02	2.16
	8	239.55	234 -	244	238.66	6.56E+02	89.21	6.86E+02	2.05
	9	269.64	264 -	272	268.76	7.04E+01	55.35	4.29E+02	5.74
	10	294.95	290 -	298	294.07	1.31E+02	61.77	5.11E+02	2.09
	11	300.57	298 -	302	299.70	3.02E+01	34.44	2.30E+02	2.52
	12	328.12	322 -	332	327.26	7.45E+01	54.57	3.57E+02	4.74
	13	338.31	333 -	342	337.45	1.20E+02	52.51	3.25E+02	2.68
	14	352.08	346 -	355	351.23	2.53E+02	58.80	3.47E+02	2.15
	15	480.25	476 -	483	479.44	2.52E+01	29.33	1.24E+02	1.85
M	16	506.07	504 -	516	505.27	1.61E+01	15.84	5.83E+01	2.47
m	17	510.69	504 -	516	509.89	1.08E+02	38.74	1.58E+02	3.02
	18	562.55	556 -	566	561.77	3.63E+01	34.24	1.35E+02	6.19
	19	583.01	575 -	587	582.24	1.87E+02	47.34	1.76E+02	2.86
	20	609.25	605 -	612	608.49	1.87E+02	39.55	1.37E+02	2.24
	21	661.61	656 -	666	660.87	6.07E+01	35.19	1.35E+02	2.29
	22	727.36	721 -	732	726.65	6.53E+01	32.80	1.01E+02	2.97
M	23	763.28	759 -	776	762.58	2.81E+01	19.68	5.21E+01	3.83
m	24	769.99	759 -	776	769.30	4.14E+01	30.98	7.26E+01	3.83
	25	910.42	902 -	916	909.78	1.34E+02	38.25	9.72E+01	2.70
M	26	933.12	930 -	957	932.49	2.23E+01	15.23	2.83E+01	3.93
m	27	942.62	930 -	957	942.00	1.82E+01	15.30	2.85E+01	2.44
m	28	954.62	930 -	957	954.00	2.44E+01	16.31	2.29E+01	2.45
	29	969.74	965 -	975	969.13	4.52E+01	35.82	1.28E+02	1.46
	30	1031.68	1026 -	1035	1031.09	2.14E+01	21.61	5.33E+01	7.68
	31	1119.29	1114 -	1123	1118.75	3.30E+01	29.48	1.06E+02	2.27
	32	1246.38	1232 -	1261	1245.89	6.67E+01	59.61	1.81E+02	15.64
	33	1335.36	1331 -	1338	1334.92	1.28E+01	14.83	2.83E+01	2.98
	34	1347.44	1341 -	1351	1347.00	1.43E+01	14.87	2.15E+01	1.94
	35	1460.61	1454 -	1467	1460.23	3.74E+02	47.46	8.40E+01	2.61
	36	1507.23	1503 -	1510	1506.88	9.08E+00	9.17	7.85E+00	3.48
	37	1556.20	1552 -	1559	1555.88	8.00E+00	7.48	4.00E+00	3.50
	38	1570.70	1567 -	1573	1570.38	6.25E+00	6.65	3.50E+00	1.24
	39	1589.06	1584 -	1593	1588.75	1.60E+01	16.55	3.00E+01	1.93
	40	1653.28	1650 -	1655	1653.00	6.00E+00	4.90	0.00E+00	2.87

Analysis Report for 1707091-13

HTC-A08-BKGD02-0006-01

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
41	1660.52	1657 -	1662	1660.25	5.00E+00	7.07	6.00E+00	1.28
42	1741.57	1738 -	1744	1741.34	7.44E+00	6.95	3.11E+00	2.27
43	1747.85	1745 -	1750	1747.62	5.36E+00	6.08	3.29E+00	1.10
44	1764.27	1759 -	1769	1764.06	2.55E+01	13.58	1.10E+01	1.29
45	1959.51	1955 -	1962	1959.41	7.90E+00	7.48	4.20E+00	3.37
46	2103.45	2097 -	2108	2103.44	1.60E+01	8.00	0.00E+00	5.73
47	2112.01	2109 -	2114	2112.00	6.00E+00	4.90	0.00E+00	3.00
48	2120.41	2117 -	2122	2120.40	5.00E+00	4.47	0.00E+00	1.24
49	2614.30	2610 -	2618	2614.62	4.25E+01	15.12	9.00E+00	2.87

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 : 8/24/2017 11:57:04AM

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

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
M	1	63.45	56 -	79	2.81E+02	141.55	2.14E+03	7.61E+01
m	2	75.99	56 -	79	1.01E+03	119.17	1.55E+03	6.48E+01
M	3	87.19	82 -	97	2.40E+02	105.16	1.60E+03	6.58E+01
m	4	92.86	82 -	97	2.96E+02	113.84	1.52E+03	6.41E+01
	5	129.31	125 -	131	8.67E+01	68.33	7.77E+02	5.40E+01
	6	172.81	168 -	175	7.24E+01	64.09	6.29E+02	5.08E+01
	7	185.99	181 -	188	1.51E+02	68.99	6.85E+02	5.30E+01
	8	239.55	234 -	244	6.56E+02	89.21	6.86E+02	6.00E+01
	9	269.64	264 -	272	7.04E+01	55.35	4.29E+02	4.34E+01
	10	294.95	290 -	298	1.31E+02	61.77	5.11E+02	4.72E+01
	11	300.57	298 -	302	3.02E+01	34.44	2.30E+02	2.68E+01
	12	328.12	322 -	332	7.45E+01	54.57	3.57E+02	4.26E+01
	13	338.31	333 -	342	1.20E+02	52.51	3.25E+02	3.92E+01
	14	352.08	346 -	355	2.53E+02	58.80	3.47E+02	4.06E+01
	15	480.25	476 -	483	2.52E+01	29.33	1.24E+02	2.26E+01
M	16	506.07	504 -	516	1.61E+01	15.84	5.83E+01	1.26E+01
m	17	510.69	504 -	516	1.08E+02	38.74	1.58E+02	2.07E+01
	18	562.55	556 -	566	3.63E+01	34.24	1.35E+02	2.63E+01

Analysis Report for 1707091-13

HTC-A08-BKGD02-0006-01

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	19	583.01	575 -	587	1.87E+02	47.34	1.76E+02	3.18E+01
	20	609.25	605 -	612	1.87E+02	39.55	1.37E+02	2.35E+01
	21	661.61	656 -	666	6.07E+01	35.19	1.35E+02	2.59E+01
	22	727.36	721 -	732	6.53E+01	32.80	1.01E+02	2.35E+01
M	23	763.28	759 -	776	2.81E+01	19.68	5.21E+01	1.19E+01
m	24	769.99	759 -	776	4.14E+01	30.98	7.26E+01	1.40E+01
	25	910.42	902 -	916	1.34E+02	38.25	9.72E+01	2.50E+01
M	26	933.12	930 -	957	2.23E+01	15.23	2.83E+01	8.75E+00
m	27	942.62	930 -	957	1.82E+01	15.30	2.85E+01	8.78E+00
m	28	954.62	930 -	957	2.44E+01	16.31	2.29E+01	7.86E+00
	29	969.74	965 -	975	4.52E+01	35.82	1.28E+02	2.73E+01
	30	1031.68	1026 -	1035	2.14E+01	21.61	5.33E+01	1.61E+01
	31	1119.29	1114 -	1123	3.30E+01	29.48	1.06E+02	2.23E+01
	32	1246.38	1232 -	1261	6.67E+01	59.61	1.81E+02	4.71E+01
	33	1335.36	1331 -	1338	1.28E+01	14.83	2.83E+01	1.07E+01
	34	1347.44	1341 -	1351	1.43E+01	14.87	2.15E+01	1.05E+01
	35	1460.61	1454 -	1467	3.74E+02	47.46	8.40E+01	2.26E+01
	36	1507.23	1503 -	1510	9.08E+00	9.17	7.85E+00	5.68E+00
	37	1556.20	1552 -	1559	8.00E+00	7.48	4.00E+00	4.03E+00
	38	1570.70	1567 -	1573	6.25E+00	6.65	3.50E+00	3.61E+00
	39	1589.06	1584 -	1593	1.60E+01	16.55	3.00E+01	1.19E+01
	40	1653.28	1650 -	1655	6.00E+00	4.90	0.00E+00	0.00E+00
	41	1660.52	1657 -	1662	5.00E+00	7.07	6.00E+00	4.50E+00
	42	1741.57	1738 -	1744	7.44E+00	6.95	3.11E+00	3.53E+00
	43	1747.85	1745 -	1750	5.36E+00	6.08	3.29E+00	3.24E+00
	44	1764.27	1759 -	1769	2.55E+01	13.58	1.10E+01	7.47E+00
	45	1959.51	1955 -	1962	7.90E+00	7.48	4.20E+00	4.06E+00
	46	2103.45	2097 -	2108	1.60E+01	8.00	0.00E+00	0.00E+00
	47	2112.01	2109 -	2114	6.00E+00	4.90	0.00E+00	0.00E+00
	48	2120.41	2117 -	2122	5.00E+00	4.47	0.00E+00	0.00E+00
	49	2614.30	2610 -	2618	4.25E+01	15.12	9.00E+00	6.29E+00

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

PEAK WITH NID REPORT

Peak Analysis Performed on : 8/24/2017 11:57:04AM

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

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

Analysis Report for 1707091-13

HTC-A08-BKGD02-0006-01

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
M	1	63.45	56 -	79	62.50	2.81E+02	141.55	2.14E+03	TH-234
									TH-230
m	2	75.99	56 -	79	75.05	1.01E+03	119.17	1.55E+03	.....
M	3	87.19	82 -	97	86.26	2.40E+02	105.16	1.60E+03	SN-126
									NP-237
									EU-155
									CD-109
m	4	92.86	82 -	97	91.93	2.96E+02	113.84	1.52E+03	GA-67
	5	129.31	125 -	131	128.38	8.67E+01	68.33	7.77E+02	.....
	6	172.81	168 -	175	171.90	7.24E+01	64.09	6.29E+02	.....
	7	185.99	181 -	188	185.08	1.51E+02	68.99	6.85E+02	RA-226
	8	239.55	234 -	244	238.66	6.56E+02	89.21	6.86E+02	PB-212
	9	269.64	264 -	272	268.76	7.04E+01	55.35	4.29E+02	.....
	10	294.95	290 -	298	294.07	1.31E+02	61.77	5.11E+02	PB-214
	11	300.57	298 -	302	299.70	3.02E+01	34.44	2.30E+02	GA-67
									PB-212
									BI-210M
	12	328.12	322 -	332	327.26	7.45E+01	54.57	3.57E+02	LA-140
	13	338.31	333 -	342	337.45	1.20E+02	52.51	3.25E+02	AC-228
	14	352.08	346 -	355	351.23	2.53E+02	58.80	3.47E+02	PB-214
	15	480.25	476 -	483	479.44	2.52E+01	29.33	1.24E+02	.....
M	16	506.07	504 -	516	505.27	1.61E+01	15.84	5.83E+01	.....
m	17	510.69	504 -	516	509.89	1.08E+02	38.74	1.58E+02	.....
	18	562.55	556 -	566	561.77	3.63E+01	34.24	1.35E+02	CS-134
	19	583.01	575 -	587	582.24	1.87E+02	47.34	1.76E+02	TL-208
	20	609.25	605 -	612	608.49	1.87E+02	39.55	1.37E+02	BI-214
	21	661.61	656 -	666	660.87	6.07E+01	35.19	1.35E+02	CS-137
	22	727.36	721 -	732	726.65	6.53E+01	32.80	1.01E+02	BI-212
M	23	763.28	759 -	776	762.58	2.81E+01	19.68	5.21E+01	AG-110M
m	24	769.99	759 -	776	769.30	4.14E+01	30.98	7.26E+01	.....
	25	910.42	902 -	916	909.78	1.34E+02	38.25	9.72E+01	AC-228
M	26	933.12	930 -	957	932.49	2.23E+01	15.23	2.83E+01	.....
m	27	942.62	930 -	957	942.00	1.82E+01	15.30	2.85E+01	.....
m	28	954.62	930 -	957	954.00	2.44E+01	16.31	2.29E+01	.....
	29	969.74	965 -	975	969.13	4.52E+01	35.82	1.28E+02	AC-228
	30	1031.68	1026 -	1035	1031.09	2.14E+01	21.61	5.33E+01	.....
	31	1119.29	1114 -	1123	1118.75	3.30E+01	29.48	1.06E+02	BI-214
	32	1246.38	1232 -	1261	1245.89	6.67E+01	59.61	1.81E+02	.....
	33	1335.36	1331 -	1338	1334.92	1.28E+01	14.83	2.83E+01	.....
	34	1347.44	1341 -	1351	1347.00	1.43E+01	14.87	2.15E+01	.....
	35	1460.61	1454 -	1467	1460.23	3.74E+02	47.46	8.40E+01	K-40
	36	1507.23	1503 -	1510	1506.88	9.08E+00	9.17	7.85E+00	.....
	37	1556.20	1552 -	1559	1555.88	8.00E+00	7.48	4.00E+00	.....
	38	1570.70	1567 -	1573	1570.38	6.25E+00	6.65	3.50E+00	.....
	39	1589.06	1584 -	1593	1588.75	1.60E+01	16.55	3.00E+01	.....
	40	1653.28	1650 -	1655	1653.00	6.00E+00	4.90	0.00E+00	.....
	41	1660.52	1657 -	1662	1660.25	5.00E+00	7.07	6.00E+00	.....
	42	1741.57	1738 -	1744	1741.34	7.44E+00	6.95	3.11E+00	.....
	43	1747.85	1745 -	1750	1747.62	5.36E+00	6.08	3.29E+00	.....
	44	1764.27	1759 -	1769	1764.06	2.55E+01	13.58	1.10E+01	BI-214
	45	1959.51	1955 -	1962	1959.41	7.90E+00	7.48	4.20E+00	.....

Analysis Report for 1707091-13

HTC-A08-BKGD02-0006-01

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
46	2103.45	2097 -	2108	2103.44	1.60E+01	8.00	0.00E+00	.....
47	2112.01	2109 -	2114	2112.00	6.00E+00	4.90	0.00E+00	.....
48	2120.41	2117 -	2122	2120.40	5.00E+00	4.47	0.00E+00	.....
49	2614.30	2610 -	2618	2614.62	4.25E+01	15.12	9.00E+00	TL-208

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

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 8/24/2017 11:57:04AM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
M	1	63.45	2.81E+02	141.55	2.16E-02	1.64E-03
m	2	75.99	1.01E+03	119.17	2.32E-02	1.91E-03
M	3	87.19	2.40E+02	105.16	2.37E-02	2.15E-03
m	4	92.86	2.96E+02	113.84	2.37E-02	2.09E-03
	5	129.31	8.67E+01	68.33	2.15E-02	1.63E-03
	6	172.81	7.24E+01	64.09	1.79E-02	1.46E-03
	7	185.99	1.51E+02	68.99	1.69E-02	1.40E-03
	8	239.55	6.56E+02	89.21	1.35E-02	1.14E-03
	9	269.64	7.04E+01	55.35	1.21E-02	9.93E-04
	10	294.95	1.31E+02	61.77	1.10E-02	9.14E-04
	11	300.57	3.02E+01	34.44	1.08E-02	9.02E-04
	12	328.12	7.45E+01	54.57	9.91E-03	8.44E-04
	13	338.31	1.20E+02	52.51	9.60E-03	8.23E-04
	14	352.08	2.53E+02	58.80	9.21E-03	7.94E-04
	15	480.25	2.52E+01	29.33	6.69E-03	6.74E-04
M	16	506.07	1.61E+01	15.84	6.34E-03	6.63E-04
m	17	510.69	1.08E+02	38.74	6.29E-03	6.61E-04
	18	562.55	3.63E+01	34.24	5.71E-03	6.40E-04
	19	583.01	1.87E+02	47.34	5.51E-03	6.31E-04
	20	609.25	1.87E+02	39.55	5.27E-03	6.20E-04
	21	661.61	6.07E+01	35.19	4.87E-03	5.99E-04
	22	727.36	6.53E+01	32.80	4.45E-03	5.16E-04
M	23	763.28	2.81E+01	19.68	4.25E-03	4.71E-04
m	24	769.99	4.14E+01	30.98	4.22E-03	4.63E-04
	25	910.42	1.34E+02	38.25	3.62E-03	2.99E-04
M	26	933.12	2.23E+01	15.23	3.54E-03	2.94E-04

Analysis Report for 1707091-13

HTC-A08-BKGD02-0006-01

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
m	27	942.62	1.82E+01	15.30	3.51E-03	2.91E-04
m	28	954.62	2.44E+01	16.31	3.47E-03	2.89E-04
	29	969.74	4.52E+01	35.82	3.42E-03	2.85E-04
	30	1031.68	2.14E+01	21.61	3.24E-03	2.71E-04
	31	1119.29	3.30E+01	29.48	3.02E-03	2.50E-04
	32	1246.38	6.67E+01	59.61	2.75E-03	2.33E-04
	33	1335.36	1.28E+01	14.83	2.58E-03	2.27E-04
	34	1347.44	1.43E+01	14.87	2.56E-03	2.25E-04
	35	1460.61	3.74E+02	47.46	2.39E-03	2.08E-04
	36	1507.23	9.08E+00	9.17	2.32E-03	2.01E-04
	37	1556.20	8.00E+00	7.48	2.25E-03	1.93E-04
	38	1570.70	6.25E+00	6.65	2.23E-03	1.91E-04
	39	1589.06	1.60E+01	16.55	2.21E-03	1.88E-04
	40	1653.28	6.00E+00	4.90	2.13E-03	1.79E-04
	41	1660.52	5.00E+00	7.07	2.12E-03	1.78E-04
	42	1741.57	7.44E+00	6.95	2.02E-03	1.65E-04
	43	1747.85	5.36E+00	6.08	2.02E-03	1.64E-04
	44	1764.27	2.55E+01	13.58	2.00E-03	1.62E-04
	45	1959.51	7.90E+00	7.48	1.80E-03	1.51E-04
	46	2103.45	1.60E+01	8.00	1.67E-03	1.51E-04
	47	2112.01	6.00E+00	4.90	1.66E-03	1.51E-04
	48	2120.41	5.00E+00	4.47	1.65E-03	1.51E-04
	49	2614.30	4.25E+01	15.12	1.28E-03	1.51E-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 : 8/24/2017 11:57:04AM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000055576.CNF

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
M	1	63.45	2.81E+02	141.55	5.67E+01	8.57E+00	2.25E+02	1.42E+02
m	2	75.99	1.01E+03	119.17	2.66E+01	8.34E+00	9.80E+02	1.19E+02
M	3	87.19	2.40E+02	105.16			2.40E+02	1.05E+02
m	4	92.86	2.96E+02	113.84	5.99E+01	8.61E+00	2.36E+02	1.14E+02
	5	129.31	8.67E+01	68.33			8.67E+01	6.83E+01
	6	172.81	7.24E+01	64.09			7.24E+01	6.41E+01
	7	185.99	1.51E+02	68.99	2.43E+01	7.50E+00	1.27E+02	6.94E+01

Analysis Report for 1707091-13

HTC-A08-BKGD02-0006-01

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	8	239.55	6.56E+02	89.21			6.56E+02	8.92E+01
	9	269.64	7.04E+01	55.35			7.04E+01	5.54E+01
	10	294.95	1.31E+02	61.77			1.31E+02	6.18E+01
	11	300.57	3.02E+01	34.44			3.02E+01	3.44E+01
	12	328.12	7.45E+01	54.57			7.45E+01	5.46E+01
	13	338.31	1.20E+02	52.51			1.20E+02	5.25E+01
	14	352.08	2.53E+02	58.80			2.53E+02	5.88E+01
	15	480.25	2.52E+01	29.33			2.52E+01	2.93E+01
M	16	506.07	1.61E+01	15.84			1.61E+01	1.58E+01
m	17	510.69	1.08E+02	38.74	4.55E+01	4.99E+00	6.25E+01	3.91E+01
	18	562.55	3.63E+01	34.24			3.63E+01	3.42E+01
	19	583.01	1.87E+02	47.34			1.87E+02	4.73E+01
	20	609.25	1.87E+02	39.55			1.87E+02	3.95E+01
	21	661.61	6.07E+01	35.19			6.07E+01	3.52E+01
	22	727.36	6.53E+01	32.80			6.53E+01	3.28E+01
M	23	763.28	2.81E+01	19.68			2.81E+01	1.97E+01
m	24	769.99	4.14E+01	30.98			4.14E+01	3.10E+01
	25	910.42	1.34E+02	38.25			1.34E+02	3.83E+01
M	26	933.12	2.23E+01	15.23			2.23E+01	1.52E+01
m	27	942.62	1.82E+01	15.30			1.82E+01	1.53E+01
m	28	954.62	2.44E+01	16.31			2.44E+01	1.63E+01
	29	969.74	4.52E+01	35.82			4.52E+01	3.58E+01
	30	1031.68	2.14E+01	21.61			2.14E+01	2.16E+01
	31	1119.29	3.30E+01	29.48			3.30E+01	2.95E+01
	32	1246.38	6.67E+01	59.61			6.67E+01	5.96E+01
	33	1335.36	1.28E+01	14.83			1.28E+01	1.48E+01
	34	1347.44	1.43E+01	14.87			1.43E+01	1.49E+01
	35	1460.61	3.74E+02	47.46			3.74E+02	4.75E+01
	36	1507.23	9.08E+00	9.17			9.08E+00	9.17E+00
	37	1556.20	8.00E+00	7.48			8.00E+00	7.48E+00
	38	1570.70	6.25E+00	6.65			6.25E+00	6.65E+00
	39	1589.06	1.60E+01	16.55			1.60E+01	1.66E+01
	40	1653.28	6.00E+00	4.90			6.00E+00	4.90E+00
	41	1660.52	5.00E+00	7.07			5.00E+00	7.07E+00
	42	1741.57	7.44E+00	6.95			7.44E+00	6.95E+00
	43	1747.85	5.36E+00	6.08			5.36E+00	6.08E+00
	44	1764.27	2.55E+01	13.58			2.55E+01	1.36E+01
	45	1959.51	7.90E+00	7.48			7.90E+00	7.48E+00
	46	2103.45	1.60E+01	8.00			1.60E+01	8.00E+00
	47	2112.01	6.00E+00	4.90			6.00E+00	4.90E+00
	48	2120.41	5.00E+00	4.47			5.00E+00	4.47E+00
	49	2614.30	4.25E+01	15.12			4.25E+01	1.51E+01

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

Analysis Report for 1707091-13

HTC-A08-BKGD02-0006-01

AREA CORRECTION REPORT
REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 8/24/2017 11:57:04AM

Ref. Peak Energy : 0.00 Reference Date :
Peak Ratio : 0.00 Uncertainty : 0.00
Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000055576.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	63.45	2.81E+02	141.55	5.67E+01	8.57E+00	2.25E+02	1.42E+02
m	2	75.99	1.01E+03	119.17	2.66E+01	8.34E+00	9.80E+02	1.19E+02
M	3	87.19	2.40E+02	105.16			2.40E+02	1.05E+02
m	4	92.86	2.96E+02	113.84	5.99E+01	8.61E+00	2.36E+02	1.14E+02
	5	129.31	8.67E+01	68.33			8.67E+01	6.83E+01
	6	172.81	7.24E+01	64.09			7.24E+01	6.41E+01
	7	185.99	1.51E+02	68.99	2.43E+01	7.50E+00	1.27E+02	6.94E+01
	8	239.55	6.56E+02	89.21			6.56E+02	8.92E+01
	9	269.64	7.04E+01	55.35			7.04E+01	5.54E+01
	10	294.95	1.31E+02	61.77			1.31E+02	6.18E+01
	11	300.57	3.02E+01	34.44			3.02E+01	3.44E+01
	12	328.12	7.45E+01	54.57			7.45E+01	5.46E+01
	13	338.31	1.20E+02	52.51			1.20E+02	5.25E+01
	14	352.08	2.53E+02	58.80			2.53E+02	5.88E+01
	15	480.25	2.52E+01	29.33			2.52E+01	2.93E+01
M	16	506.07	1.61E+01	15.84			1.61E+01	1.58E+01
m	17	510.69	1.08E+02	38.74	4.55E+01	4.99E+00	6.25E+01	3.91E+01
	18	562.55	3.63E+01	34.24			3.63E+01	3.42E+01
	19	583.01	1.87E+02	47.34			1.87E+02	4.73E+01
	20	609.25	1.87E+02	39.55			1.87E+02	3.95E+01
	21	661.61	6.07E+01	35.19			6.07E+01	3.52E+01
	22	727.36	6.53E+01	32.80			6.53E+01	3.28E+01
M	23	763.28	2.81E+01	19.68			2.81E+01	1.97E+01
m	24	769.99	4.14E+01	30.98			4.14E+01	3.10E+01
	25	910.42	1.34E+02	38.25			1.34E+02	3.83E+01
M	26	933.12	2.23E+01	15.23			2.23E+01	1.52E+01
m	27	942.62	1.82E+01	15.30			1.82E+01	1.53E+01
m	28	954.62	2.44E+01	16.31			2.44E+01	1.63E+01
	29	969.74	4.52E+01	35.82			4.52E+01	3.58E+01
	30	1031.68	2.14E+01	21.61			2.14E+01	2.16E+01
	31	1119.29	3.30E+01	29.48			3.30E+01	2.95E+01
	32	1246.38	6.67E+01	59.61			6.67E+01	5.96E+01
	33	1335.36	1.28E+01	14.83			1.28E+01	1.48E+01
	34	1347.44	1.43E+01	14.87			1.43E+01	1.49E+01
	35	1460.61	3.74E+02	47.46			3.74E+02	4.75E+01
	36	1507.23	9.08E+00	9.17			9.08E+00	9.17E+00
	37	1556.20	8.00E+00	7.48			8.00E+00	7.48E+00
	38	1570.70	6.25E+00	6.65			6.25E+00	6.65E+00
	39	1589.06	1.60E+01	16.55			1.60E+01	1.66E+01
	40	1653.28	6.00E+00	4.90			6.00E+00	4.90E+00
	41	1660.52	5.00E+00	7.07			5.00E+00	7.07E+00

Analysis Report for 1707091-13

HTC-A08-BKGD02-0006-01

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
42	1741.57	7.44E+00	6.95			7.44E+00	6.95E+00
43	1747.85	5.36E+00	6.08			5.36E+00	6.08E+00
44	1764.27	2.55E+01	13.58			2.55E+01	1.36E+01
45	1959.51	7.90E+00	7.48			7.90E+00	7.48E+00
46	2103.45	1.60E+01	8.00			1.60E+01	8.00E+00
47	2112.01	6.00E+00	4.90			6.00E+00	4.90E+00
48	2120.41	5.00E+00	4.47			5.00E+00	4.47E+00
49	2614.30	4.25E+01	15.12			4.25E+01	1.51E+01

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

NUCLIDE IDENTIFICATION REPORT

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

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.993	1460.81	*	10.67	1.72E+01	2.67E+00
CD-109	0.894	88.03	*	3.72	3.71E+00	1.68E+00
SN-126	0.978	87.57	*	37.00	3.21E-01	1.44E-01
CS-137	1.000	661.65	*	85.12	1.73E-01	1.02E-01
EU-155	0.317	86.50	*	30.90	4.00E-01	1.79E-01
		105.30		20.70		
TL-208	0.872	583.14	*	30.22	1.32E+00	3.66E-01
		860.37		4.48		
		2614.66	*	35.85	1.09E+00	4.07E-01
BI-212	0.772	727.17	*	11.80	1.46E+00	7.51E-01
		1620.62		2.75		
PB-212	0.880	238.63	*	44.60	1.27E+00	2.03E-01
		300.09	*	3.41	9.59E-01	1.10E+00
BI-214	0.907	609.31	*	46.30	8.95E-01	2.17E-01
		1120.29	*	15.10	8.50E-01	7.61E-01
		1764.49	*	15.80	9.46E-01	5.10E-01
		2204.22		4.98		
PB-214	0.993	295.21	*	19.19	7.27E-01	3.47E-01
		351.92	*	37.19	8.66E-01	2.15E-01
RA-226	0.992	186.21	*	3.28	2.68E+00	5.13E+00
AC-228	0.949	338.32	*	11.40	1.29E+00	5.73E-01
		911.07	*	27.70	1.57E+00	4.65E-01
		969.11	*	16.60	9.33E-01	7.43E-01

Analysis Report for 1707091-13

HTC-A08-BKGD02-0006-01

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
TH-234	0.996	63.29	*	3.80	3.21E+00	2.04E+00
NP-237	0.926	86.50	*	12.60	9.43E-01	4.22E-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 : 8/24/2017 11:57:04AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
m	2	75.99	2.72151E-01	6.10		
m	4	92.86	6.56846E-02	24.14	Tol.	GA-67
	5	129.31	2.40713E-02	39.42		
	6	172.81	2.01113E-02	44.26		
	9	269.64	1.95556E-02	39.31		
	12	328.12	2.06972E-02	36.62	Tol.	LA-140
	15	480.25	7.00192E-03	58.17	Sum	
M	16	506.07	4.48081E-03	49.08		
m	17	510.69	1.73704E-02	31.23		
	18	562.55	1.00921E-02	47.12	Tol.	CS-134
M	23	763.28	7.80735E-03	35.01	Tol.	AG-110M
m	24	769.99	1.14931E-02	37.44	Sum	
M	26	933.12	6.20093E-03	34.12		
m	27	942.62	5.05063E-03	42.07		
m	28	954.62	6.78418E-03	33.39		
	30	1031.68	5.93750E-03	50.55		
	32	1246.38	1.85218E-02	44.70		
	33	1335.36	3.56481E-03	57.79		
	34	1347.44	3.96111E-03	52.13		
	36	1507.23	2.52137E-03	50.49		
	37	1556.20	2.22222E-03	46.77		
	38	1570.70	1.73611E-03	53.22		
	39	1589.06	4.44444E-03	51.73		
	40	1653.28	1.66667E-03	40.82		
	41	1660.52	1.38889E-03	70.71		
	42	1741.57	2.06790E-03	46.65		
	43	1747.85	1.48810E-03	56.77		

Analysis Report for 1707091-13

HTC-A08-BKGD02-0006-01

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
45	1959.51	2.19444E-03	47.36		
46	2103.45	4.44444E-03	25.00	S-Esc	
47	2112.01	1.66667E-03	40.82		
48	2120.41	1.38889E-03	44.72		

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

NUCLIDE IDENTIFICATION REPORT

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

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.99	1460.81	*	10.67	1.72E+01	2.67E+00
CD-109	0.89	88.03	*	3.72	3.71E+00	1.68E+00
SN-126	0.97	87.57	*	37.00	3.21E-01	1.44E-01
CS-137	1.00	661.65	*	85.12	1.73E-01	1.02E-01
EU-155	0.31	86.50	*	30.90	4.00E-01	1.79E-01
		105.30		20.70		
TL-208	0.87	583.14	*	30.22	1.32E+00	3.66E-01
		860.37		4.48		
		2614.66	*	35.85	1.09E+00	4.07E-01
BI-212	0.77	727.17	*	11.80	1.46E+00	7.51E-01
		1620.62		2.75		
PB-212	0.88	238.63	*	44.60	1.27E+00	2.03E-01
		300.09	*	3.41	9.59E-01	1.10E+00
BI-214	0.90	609.31	*	46.30	8.95E-01	2.17E-01
		1120.29	*	15.10	8.50E-01	7.61E-01
		1764.49	*	15.80	9.46E-01	5.10E-01
		2204.22		4.98		
PB-214	0.99	295.21	*	19.19	7.27E-01	3.47E-01
		351.92	*	37.19	8.66E-01	2.15E-01
RA-226	0.99	186.21	*	3.28	2.68E+00	5.13E+00
AC-228	0.94	338.32	*	11.40	1.29E+00	5.73E-01
		911.07	*	27.70	1.57E+00	4.65E-01
		969.11	*	16.60	9.33E-01	7.43E-01
TH-234	0.99	63.29	*	3.80	3.21E+00	2.04E+00

Analysis Report for 1707091-13

HTC-A08-BKGD02-0006-01

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
NP-237	0.92	86.50	*	12.60	9.43E-01	4.22E-01

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

INTERFERENCE CORRECTED REPORT

	Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
	K-40	0.993	1.72E+01	2.67E+00	
?	CD-109	0.894	3.71E+00	1.68E+00	
?	SN-126	0.978	3.21E-01	1.44E-01	
	CS-137	1.000	1.73E-01	1.02E-01	
?	EU-155	0.317	4.00E-01	1.79E-01	
	TL-208	0.872	1.21E+00	2.72E-01	
	BI-212	0.772	1.46E+00	7.51E-01	
	PB-212	0.880	1.26E+00	2.00E-01	
	BI-214	0.907	9.00E-01	1.93E-01	
	PB-214	0.993	8.28E-01	1.82E-01	
	RA-226	0.992	2.68E+00	5.13E+00	
	AC-228	0.949	1.36E+00	3.25E-01	
	TH-234	0.996	3.21E+00	2.04E+00	
?	NP-237	0.926	9.43E-01	4.22E-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 1707091-13

HTC-A08-BKGD02-0006-01

UNIDENTIFIED PEAKS

Peak Locate Performed on : 8/24/2017 11:57:04AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
m	2	75.99	2.72151E-01	6.10		
m	4	92.86	6.56846E-02	24.14	Tol.	GA-67
	5	129.31	2.40713E-02	39.42		
	6	172.81	2.01113E-02	44.26		
	9	269.64	1.95556E-02	39.31		
	12	328.12	2.06972E-02	36.62	Tol.	LA-140
	15	480.25	7.00192E-03	58.17	Sum	
M	16	506.07	4.48081E-03	49.08		
m	17	510.69	1.73704E-02	31.23		
	18	562.55	1.00921E-02	47.12	Tol.	CS-134
M	23	763.28	7.80735E-03	35.01	Tol.	AG-110M
m	24	769.99	1.14931E-02	37.44	Sum	
M	26	933.12	6.20093E-03	34.12		
m	27	942.62	5.05063E-03	42.07		
m	28	954.62	6.78418E-03	33.39		
	30	1031.68	5.93750E-03	50.55		
	32	1246.38	1.85218E-02	44.70		
	33	1335.36	3.56481E-03	57.79		
	34	1347.44	3.96111E-03	52.13		
	36	1507.23	2.52137E-03	50.49		
	37	1556.20	2.22222E-03	46.77		
	38	1570.70	1.73611E-03	53.22		
	39	1589.06	4.44444E-03	51.73		
	40	1653.28	1.66667E-03	40.82		
	41	1660.52	1.38889E-03	70.71		
	42	1741.57	2.06790E-03	46.65		
	43	1747.85	1.48810E-03	56.77		
	45	1959.51	2.19444E-03	47.36		
	46	2103.45	4.44444E-03	25.00	S-Esc	
	47	2112.01	1.66667E-03	40.82		
	48	2120.41	1.38889E-03	44.72		

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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	1.96E-01	2.79E+00	2.79E+00
+		NA-22	1274.54		99.94	-6.15E-03	1.32E-01	1.32E-01
+	@	NA-24	1368.53		99.99	1.00E+26	1.00E+26	1.00E+26
	@		2754.09		99.86	1.00E+26		1.00E+26
+		AL-26	1808.65		99.76	-4.62E-02	6.48E-02	6.48E-02
+		K-40	1460.81	*	10.67	1.72E+01	2.21E+00	2.21E+00
+	@	AR-41	1293.64		99.16	1.00E+26	1.00E+26	1.00E+26
+		TI-44	67.88		94.40	-1.30E-01	7.26E-02	7.26E-02
			78.34		96.00	2.93E-01		9.39E-02
+		SC-46	889.25		99.98	1.70E-01	2.83E-01	2.83E-01
			1120.51		99.99	2.66E-01		4.04E-01
+		V-48	983.52		99.98	1.28E+00	9.59E+00	9.59E+00
			1312.10		97.50	-2.47E+00		9.84E+00
+		CR-51	320.08		9.83	-3.69E-01	8.23E+00	8.23E+00
+		MN-54	834.83		99.97	1.47E-02	1.51E-01	1.51E-01
+		CO-56	846.75		99.96	-1.31E-01	2.60E-01	2.60E-01
			1037.75		14.03	-5.70E-01		1.80E+00
			1238.25		67.00	4.93E-02		5.73E-01
			1771.40		15.51	1.13E-01		1.54E+00
			2598.48		16.90	8.71E-02		1.41E+00
+		CO-57	122.06		85.51	1.44E-02	8.18E-02	8.18E-02
			136.48		10.60	1.21E-01		6.64E-01
+		CO-58	810.76		99.40	-5.05E-02	3.05E-01	3.05E-01
+		FE-59	1099.22		56.50	4.55E-01	1.13E+00	1.13E+00
			1291.56		43.20	-3.42E-01		1.42E+00
+		CO-60	1173.22		100.00	3.83E-03	1.34E-01	1.44E-01
			1332.49		100.00	1.06E-02		1.34E-01
+		ZN-65	1115.52		50.75	-1.35E-02	4.17E-01	4.17E-01
+		GA-67	93.31		35.70	6.40E+08	3.98E+08	3.98E+08
			208.95		2.24	2.31E+09		6.32E+09
			300.22		16.00	-1.84E+09		9.73E+08
+		SE-75	121.11		16.70	1.11E-01	1.64E-01	5.81E-01

Analysis Report for 1707091-13

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	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	SE-75	136.00		59.20	1.82E-02	1.64E-01	1.64E-01
		264.65		59.80	-1.14E-02		1.82E-01
		279.53		25.20	-1.09E-01		4.71E-01
		400.65		11.40	-5.86E-01		1.16E+00
+	RB-82	776.52		13.00	6.15E-01	1.32E+01	1.32E+01
+	RB-83	520.41		46.00	1.73E-02	3.69E-01	3.69E-01
		529.64		30.30	1.16E-01		6.14E-01
		552.65		16.40	3.61E-01		1.07E+00
+	KR-85	513.99		0.43	1.49E+01	2.44E+01	2.44E+01
+	SR-85	513.99		99.27	1.89E-01	3.08E-01	3.08E-01
+	Y-88	898.02		93.40	-9.43E-02	1.67E-01	2.07E-01
		1836.01		99.38	-4.93E-02		1.67E-01
+	MO-93	263.06		56.72	-3.03E-02	9.93E-02	1.06E-01
		684.67		99.68	4.28E-02		1.10E-01
		1477.11		99.08	8.10E-03		9.93E-02
+	NB-93M	16.57		9.43	1.49E+01	7.52E+00	7.52E+00
+	NB-94	702.63		100.00	2.67E-02	1.13E-01	1.25E-01
		871.10		100.00	5.57E-02		1.13E-01
+	NB-95	765.79		99.81	1.11E-01	9.49E-01	9.49E-01
+	NB-95M	235.69		25.00	1.86E+07	1.09E+08	1.09E+08
+	ZR-95	724.18		43.70	-1.79E-02	5.62E-01	8.25E-01
		756.72		55.30	1.28E-01		5.62E-01
+	MO-99	181.06		6.20	3.22E+10	8.34E+10	1.09E+11
		739.58		12.80	-4.87E+09		8.34E+10
		778.00		4.50	2.62E+10		2.70E+11
+	RU-103	497.08		89.00	-7.23E-02	5.38E-01	5.38E-01
+	RU-106	621.84		9.80	-6.87E-01	1.09E+00	1.09E+00
+	AG-108M	433.93		89.90	-3.83E-02	7.66E-02	7.66E-02
		614.37		90.40	3.60E-02		1.05E-01
		722.95		90.50	-5.64E-03		1.27E-01
+	CD-109	88.03	*	3.72	3.71E+00	4.02E+00	4.02E+00
+	AG-110M	657.75		93.14	2.55E-03	1.63E-01	1.63E-01
		677.61		10.53	-3.09E-01		1.33E+00
		706.67		16.46	1.30E-01		9.80E-01
		763.93		21.98	-4.69E-01		7.00E-01
		884.67		71.63	-8.11E-02		2.19E-01
		1384.27		23.94	-6.09E-02		5.66E-01
+	CD-113M	263.70		0.02	-1.30E+01	2.71E+02	2.71E+02
+	SN-113	255.12		1.93	-8.14E-01	2.26E-01	6.11E+00
		391.69		64.90	-1.41E-02		2.26E-01
+	TE123M	159.00		84.10	1.14E-03	1.27E-01	1.27E-01
+	SB-124	602.71		97.87	3.65E-03	2.95E-01	2.95E-01
		645.85		7.26	5.52E-01		4.04E+00
		722.78		11.10	-1.47E-01		3.30E+00
		1691.02		49.00	-4.59E-02		5.82E-01
+	I-125	35.49		6.49	-3.26E+00	5.13E+00	5.13E+00
+	SB-125	176.33		6.89	-7.90E-02	2.86E-01	9.07E-01
		427.89		29.33	1.28E-01		2.86E-01

Analysis Report for 1707091-13

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	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	SB-125	463.38		10.35	3.93E-01	2.86E-01	8.44E-01
		600.56		17.80	1.48E-01		5.67E-01
		635.90		11.32	-2.05E-01		8.23E-01
+	SB-126	414.70		83.30	-5.44E+00	2.65E+01	2.65E+01
		666.33		99.60	-8.54E+00		3.06E+01
		695.00		99.60	1.23E+00		3.09E+01
		720.50		53.80	2.75E+00		5.54E+01
+	SN-126	87.57	*	37.00	3.21E-01	3.48E-01	3.48E-01
+	SB-127	473.00		25.00	1.73E+07	2.35E+07	2.56E+07
		685.20		35.70	9.16E+06		2.35E+07
		783.80		14.70	2.87E+07		6.56E+07
+	I-129	29.78		57.00	5.67E-02	2.71E-01	2.71E-01
		33.60		13.20	1.23E-01		8.96E-01
		39.58		7.52	-5.05E-01		1.18E+00
+	I-131	284.30		6.05	-2.90E+02	5.09E+02	6.26E+03
		364.48		81.20	6.33E+01		5.09E+02
		636.97		7.26	-1.58E+03		7.27E+03
		722.89		1.80	-1.70E+03		3.83E+04
+	TE-132	49.72		13.10	-6.71E+08	1.56E+08	1.18E+09
		228.16		88.00	3.31E+07		1.56E+08
+	BA-133	81.00		33.00	-1.59E-02	1.51E-01	2.14E-01
		302.84		17.80	-2.82E-03		4.05E-01
		356.01		60.00	1.74E-02		1.51E-01
+	@ I-133	529.87		86.30	1.00E+26	1.00E+26	1.00E+26
+	XE-133	81.00		38.00	-8.46E+03	1.14E+05	1.14E+05
+	CS-134	563.23		8.38	9.37E-01	1.14E-01	1.17E+00
		569.32		15.43	1.22E-01		5.64E-01
		604.70		97.60	1.94E-02		1.14E-01
		795.84		85.40	8.55E-02		1.68E-01
		801.93		8.73	-5.42E-01		1.53E+00
+	CS-135	268.24		16.00	3.17E-02	4.26E-01	4.26E-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	-2.27E+01	2.31E+01	1.52E+02
		163.89		4.61	2.61E+01		2.57E+02
		176.55		13.56	7.15E+00		8.78E+01
		273.65		12.66	2.50E+01		1.22E+02
		340.57		48.50	1.43E+01		3.57E+01
		818.50		99.70	-5.10E+00		2.31E+01
		1048.07		79.60	-1.36E+01		3.40E+01
		1235.34		19.70	1.01E+02		1.72E+02
+	CS-137	661.65	*	85.12	1.73E-01	1.55E-01	1.55E-01
+	LA-138	788.74		34.00	-1.75E-01	1.33E-01	3.43E-01
		1435.80		66.00	2.58E-02		1.33E-01
+	CE-139	165.85		80.35	-3.07E-02	1.17E-01	1.17E-01
+	BA-140	162.64		6.70	8.32E+01	7.76E+01	2.09E+02
		304.84		4.50	3.87E+01		3.44E+02
		423.70		3.20	6.22E+01		5.66E+02

Analysis Report for 1707091-13

HTC-A08-BKGD02-0006-01

		Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
		BA-140	437.55		2.00	-3.77E+02	7.76E+01	8.58E+02
			537.32		25.00	-6.66E-02		7.76E+01
+		LA-140	328.77		20.50	7.45E+01	2.75E+01	8.97E+01
			487.03		45.50	1.51E+01		3.86E+01
			815.85		23.50	-1.63E+01		1.15E+02
			1596.49		95.49	2.30E+00		2.75E+01
+		CE-141	145.44		48.40	6.58E-01	1.02E+00	1.02E+00
+	@	CE-143	57.36		11.80	1.00E+26	1.00E+26	1.00E+26
	@		293.26		42.00	1.00E+26		1.00E+26
	@		664.55		5.20	1.00E+26		1.00E+26
+		CE-144	133.54		10.80	1.52E-01	6.42E-01	6.42E-01
+		PM-144	476.78		42.00	1.28E-02	1.15E-01	2.28E-01
			618.01		98.60	1.66E-02		1.15E-01
			696.49		99.49	-9.17E-02		1.37E-01
+		PM-145	36.85		21.70	-2.92E-01	2.44E-01	4.56E-01
			37.36		39.70	-1.56E-01		2.44E-01
			42.30		15.10	-5.62E-01		5.59E-01
			72.40		2.31	-6.82E+00		3.51E+00
+		PM-146	453.90		39.94	2.82E-03	1.99E-01	1.99E-01
			735.90		14.01	-1.10E-01		7.32E-01
			747.13		13.10	-5.17E-01		7.53E-01
+		ND-147	91.11		28.90	1.71E+02	1.45E+02	1.45E+02
			531.02		13.10	-8.23E+01		3.63E+02
+		PM-149	285.90		3.10	-2.26E+13	1.11E+14	1.11E+14
+		EU-152	121.78		20.50	4.71E-02	2.67E-01	2.67E-01
			244.69		5.40	-2.04E-01		1.35E+00
			344.27		19.13	4.37E-02		3.89E-01
			778.89		9.20	-2.48E-01		1.19E+00
			964.01		10.40	2.02E-01		1.46E+00
			1085.78		7.22	1.39E-02		1.82E+00
			1112.02		9.60	2.14E-01		1.47E+00
			1407.95		14.94	2.37E-02		7.59E-01
+		GD-153	97.43		31.30	2.85E-02	2.46E-01	2.46E-01
			103.18		22.20	7.57E-02		3.30E-01
+		EU-154	123.07		40.50	4.72E-03	1.37E-01	1.37E-01
			723.30		19.70	-1.36E-02		6.26E-01
			873.19		11.50	-5.12E-01		9.00E-01
			996.32		10.30	3.26E-01		1.24E+00
			1004.76		17.90	2.10E-01		7.18E-01
			1274.45		35.50	-1.64E-02		3.53E-01
+		EU-155	86.50	*	30.90	4.00E-01	2.76E-01	4.33E-01
			105.30		20.70	7.80E-04		2.76E-01
+		EU-156	811.77		10.40	1.14E+01	1.10E+02	1.10E+02
			1153.47		7.20	4.26E+01		2.10E+02
			1230.71		8.90	-4.75E+00		1.59E+02
+		HO-166M	184.41		72.60	1.44E-01	9.75E-02	9.75E-02
			280.45		29.60	-2.39E-02		2.21E-01
			410.94		11.10	6.09E-02		7.27E-01
			711.69		54.10	-6.61E-02		2.16E-01

Analysis Report for 1707091-13

HTC-A08-BKGD02-0006-01

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	TM-171	66.72		0.14	-4.32E+01	5.58E+01	5.58E+01
+	HF-172	67.35		5.31	-1.14E+00	5.46E-01	1.47E+00
		125.81		11.30	-2.80E-03		5.46E-01
+	LU-172	181.53		20.60	8.55E+02	6.86E+03	1.06E+04
		900.72		29.81	-1.90E+03		1.32E+04
		1093.66		62.50	-2.50E+03		6.86E+03
+	LU-173	100.72		5.24	-3.24E-02	4.06E-01	1.17E+00
		272.11		21.20	7.16E-03		4.06E-01
+	HF-175	343.40		84.00	2.66E-02	2.37E-01	2.37E-01
+	LU-176	88.34		13.30	-1.01E-01	6.83E-02	5.23E-01
		201.83		86.00	-9.65E-04		7.40E-02
		306.78		94.00	-1.24E-02		6.83E-02
+	HF-181	133.02		41.70	1.56E-01	4.96E-01	6.96E-01
		345.85		17.20	2.51E-01		2.13E+00
		482.03		82.80	9.38E-02		4.96E-01
+	TA-182	67.75		41.20	-5.46E-01	3.06E-01	3.06E-01
		1121.30		34.90	5.97E-02		9.26E-01
		1189.05		16.23	8.68E-01		1.82E+00
		1221.41		26.98	3.46E-02		1.00E+00
		1231.02		11.44	-6.80E-02		2.35E+00
+	IR-192	308.46		29.68	-3.99E-02	4.16E-01	5.60E-01
		468.07		48.10	-1.98E-01		4.16E-01
+	HG-203	279.19		77.30	-6.20E-02	3.93E-01	3.93E-01
+	TL-204	374.74		94.11	9.52E-03	7.94E-02	7.94E-02
		899.15		99.16	-2.60E-02		1.13E-01
		911.74		91.10	3.81E-01		2.17E-01
+	BI-207	569.67		97.72	1.77E-02	8.16E-02	8.16E-02
		1063.62		74.90	-4.99E-03		1.60E-01
+	TL-208	583.14	*	30.22	1.32E+00	3.90E-01	4.67E-01
		860.37		4.48	-6.88E-01		2.66E+00
		2614.66	*	35.85	1.09E+00		3.90E-01
+	BI-210M	262.00		45.00	-1.07E-02	1.31E-01	1.31E-01
		300.00		23.00	-6.15E-01		3.25E-01
+	PB-210	46.50		4.25	1.38E+00	1.91E+00	1.91E+00
+	PB-211	404.84		2.90	-4.90E-01	2.67E+00	2.67E+00
		831.96		2.90	-4.21E-01		4.01E+00
+	BI-212	727.17	*	11.80	1.46E+00	1.11E+00	1.11E+00
		1620.62		2.75	2.23E-01		3.42E+00
+	PB-212	238.63	*	44.60	1.27E+00	2.38E-01	2.38E-01
		300.09	*	3.41	9.59E-01		1.79E+00
+	BI-214	609.31	*	46.30	8.95E-01	2.39E-01	2.39E-01
		1120.29	*	15.10	8.50E-01		1.22E+00
		1764.49	*	15.80	9.46E-01		6.55E-01
		2204.22		4.98	-8.50E-02		2.23E+00
+	PB-214	295.21	*	19.19	7.27E-01	2.87E-01	5.37E-01
		351.92	*	37.19	8.66E-01		2.87E-01
+	RN-219	401.80		6.50	-2.85E-01	1.15E+00	1.15E+00
+	RA-223	323.87		3.88	-2.97E-02	1.79E+00	1.79E+00

Analysis Report for 1707091-13

HTC-A08-BKGD02-0006-01

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	RA-224	240.98		3.95	1.45E+01	3.06E+00	3.06E+00
+	RA-225	40.00		31.00	-1.36E+01	3.17E+01	3.17E+01
+	RA-226	186.21	*	3.28	2.68E+00	2.34E+00	2.34E+00
+	TH-227	50.10		8.40	-4.91E-01	8.63E-01	8.63E-01
		236.00		11.50	1.55E-01		9.10E-01
		256.20		6.30	3.49E-01		1.04E+00
+	AC-228	338.32	*	11.40	1.29E+00	6.16E-01	8.69E-01
		911.07	*	27.70	1.57E+00		6.16E-01
		969.11	*	16.60	9.33E-01		1.18E+00
+	TH-230	48.44		16.90	1.72E-01	4.54E-01	4.54E-01
		62.85		4.60	1.77E+00		1.64E+00
		67.67		0.37	-3.30E+01		1.85E+01
+	PA-231	283.67		1.60	-1.82E-01	3.08E+00	3.93E+00
		302.67		2.30	-2.14E-02		3.08E+00
+	TH-231	25.64		14.70	6.06E-01	1.03E+00	1.53E+00
		84.21		6.40	-8.01E-02		1.03E+00
+	PA-233	311.98		38.60	1.51E-01	2.25E+00	2.25E+00
+	PA-234	131.20		20.40	-2.70E-02	2.77E-01	2.77E-01
		733.99		8.80	1.22E-01		1.15E+00
		946.00		12.00	-6.03E-02		9.56E-01
+	PA-234M	1001.03		0.92	-3.25E+00	1.36E+01	1.36E+01
+	TH-234	63.29	*	3.80	3.21E+00	5.47E+00	5.47E+00
+	U-235	143.76		10.50	3.05E-01	5.47E-01	5.47E-01
		163.35		4.70	5.01E-01		1.26E+00
		205.31		4.70	-9.62E-01		1.35E+00
+	NP-237	86.50	*	12.60	9.43E-01	1.02E+00	1.02E+00
+	NP-239	106.10		22.70	1.05E+12	1.95E+12	1.95E+12
		228.18		10.70	1.03E+12		4.86E+12
		277.60		14.10	1.14E+12		3.90E+12
+	AM-241	59.54		35.90	-4.83E-02	2.04E-01	2.04E-01
+	AM-243	74.67		66.00	6.81E-01	1.46E-01	1.46E-01
+	CM-243	209.75		3.29	3.34E-01	4.95E-01	2.07E+00
		228.14		10.60	1.31E-01		6.18E-01
		277.60		14.00	1.44E-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
? = CAUTION: MDA value is inconsistent with Currie MDA at 95% confidence level

Analysis Report for 1707091-13

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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	2.79E+00	2.79E+00	1.96E-01	1.31E+00
	NA-22	1274.54		99.94	1.32E-01	1.32E-01	-6.15E-03	5.97E-02
@	NA-24	1368.53		99.99	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		2754.09		99.86	1.00E+26		1.00E+26	1.00E+20
	AL-26	1808.65		99.76	6.48E-02	6.48E-02	-4.62E-02	2.43E-02
+	K-40	1460.81	*	10.67	2.21E+00	2.21E+00	1.72E+01	1.04E+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	7.26E-02	7.26E-02	-1.30E-01	3.55E-02
		78.34		96.00	9.39E-02		2.93E-01	4.62E-02
	SC-46	889.25		99.98	2.83E-01	2.83E-01	1.70E-01	1.32E-01
		1120.51		99.99	4.04E-01		2.66E-01	1.90E-01
	V-48	983.52		99.98	9.59E+00	9.59E+00	1.28E+00	4.42E+00
		1312.10		97.50	9.84E+00		-2.47E+00	4.42E+00
	CR-51	320.08		9.83	8.23E+00	8.23E+00	-3.69E-01	3.92E+00
	MN-54	834.83		99.97	1.51E-01	1.51E-01	1.47E-02	7.02E-02
	CO-56	846.75		99.96	2.60E-01	2.60E-01	-1.31E-01	1.20E-01
		1037.75		14.03	1.80E+00		-5.70E-01	8.16E-01
		1238.25		67.00	5.73E-01		4.93E-02	2.66E-01
		1771.40		15.51	1.54E+00		1.13E-01	6.44E-01
		2598.48		16.90	1.41E+00		8.71E-02	5.26E-01
	CO-57	122.06		85.51	8.18E-02	8.18E-02	1.44E-02	3.98E-02
		136.48		10.60	6.64E-01		1.21E-01	3.23E-01
	CO-58	810.76		99.40	3.05E-01	3.05E-01	-5.05E-02	1.42E-01
	FE-59	1099.22		56.50	1.13E+00	1.13E+00	4.55E-01	5.23E-01
		1291.56		43.20	1.42E+00		-3.42E-01	6.43E-01
	CO-60	1173.22		100.00	1.44E-01	1.34E-01	3.83E-03	6.62E-02
		1332.49		100.00	1.34E-01		1.06E-02	6.08E-02
	ZN-65	1115.52		50.75	4.17E-01	4.17E-01	-1.35E-02	1.95E-01
	GA-67	93.31		35.70	3.98E+08	3.98E+08	6.40E+08	1.95E+08
		208.95		2.24	6.32E+09		2.31E+09	3.07E+09
		300.22		16.00	9.73E+08		-1.84E+09	4.67E+08
	SE-75	121.11		16.70	5.81E-01	1.64E-01	1.11E-01	2.83E-01
		136.00		59.20	1.64E-01		1.82E-02	7.97E-02
		264.65		59.80	1.82E-01		-1.14E-02	8.69E-02
		279.53		25.20	4.71E-01		-1.09E-01	2.26E-01
		400.65		11.40	1.16E+00		-5.86E-01	5.50E-01
	RB-82	776.52		13.00	1.32E+01	1.32E+01	6.15E-01	6.15E+00
	RB-83	520.41		46.00	3.69E-01	3.69E-01	1.73E-02	1.72E-01
		529.64		30.30	6.14E-01		1.16E-01	2.88E-01
		552.65		16.40	1.07E+00		3.61E-01	4.99E-01
	KR-85	513.99		0.43	2.44E+01	2.44E+01	1.49E+01	1.16E+01
	SR-85	513.99		99.27	3.08E-01	3.08E-01	1.89E-01	1.46E-01

Analysis Report for 1707091-13

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	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	Y-88	898.02		93.40	2.07E-01	1.67E-01	-9.43E-02	9.46E-02
		1836.01		99.38	1.67E-01		-4.93E-02	6.74E-02
	MO-93	263.06		56.72	1.06E-01	9.93E-02	-3.03E-02	5.06E-02
		684.67		99.68	1.10E-01		4.28E-02	5.15E-02
		1477.11		99.08	9.93E-02		8.10E-03	4.28E-02
	NB-93M	16.57		9.43	7.52E+00	7.52E+00	1.49E+01	3.65E+00
	NB-94	702.63		100.00	1.25E-01	1.13E-01	2.67E-02	5.90E-02
		871.10		100.00	1.13E-01		5.57E-02	5.22E-02
	NB-95	765.79		99.81	9.49E-01	9.49E-01	1.11E-01	4.47E-01
	NB-95M	235.69		25.00	1.09E+08	1.09E+08	1.86E+07	5.34E+07
	ZR-95	724.18		43.70	8.25E-01	5.62E-01	-1.79E-02	3.88E-01
		756.72		55.30	5.62E-01		1.28E-01	2.61E-01
	MO-99	181.06		6.20	1.09E+11	8.34E+10	3.22E+10	5.28E+10
		739.58		12.80	8.34E+10		-4.87E+09	3.86E+10
		778.00		4.50	2.70E+11		2.62E+10	1.26E+11
	RU-103	497.08		89.00	5.38E-01	5.38E-01	-7.23E-02	2.53E-01
	RU-106	621.84		9.80	1.09E+00	1.09E+00	-6.87E-01	5.08E-01
	AG-108M	433.93		89.90	7.66E-02	7.66E-02	-3.83E-02	3.59E-02
		614.37		90.40	1.05E-01		3.60E-02	4.90E-02
		722.95		90.50	1.27E-01		-5.64E-03	5.95E-02
+	CD-109	88.03	*	3.72	4.02E+00	4.02E+00	3.71E+00	1.99E+00
	AG-110M	657.75		93.14	1.63E-01	1.63E-01	2.55E-03	7.71E-02
		677.61		10.53	1.33E+00		-3.09E-01	6.23E-01
		706.67		16.46	9.80E-01		1.30E-01	4.62E-01
		763.93		21.98	7.00E-01		-4.69E-01	3.28E-01
		884.67		71.63	2.19E-01		-8.11E-02	1.01E-01
		1384.27		23.94	5.66E-01		-6.09E-02	2.48E-01
	CD-113M	263.70		0.02	2.71E+02	2.71E+02	-1.30E+01	1.30E+02
	SN-113	255.12		1.93	6.11E+00	2.26E-01	-8.14E-01	2.93E+00
		391.69		64.90	2.26E-01		-1.41E-02	1.08E-01
	TE123M	159.00		84.10	1.27E-01	1.27E-01	1.14E-03	6.16E-02
	SB-124	602.71		97.87	2.95E-01	2.95E-01	3.65E-03	1.38E-01
		645.85		7.26	4.04E+00		5.52E-01	1.88E+00
		722.78		11.10	3.30E+00		-1.47E-01	1.55E+00
		1691.02		49.00	5.82E-01		-4.59E-02	2.42E-01
	I-125	35.49		6.49	5.13E+00	5.13E+00	-3.26E+00	2.49E+00
	SB-125	176.33		6.89	9.07E-01	2.86E-01	-7.90E-02	4.39E-01
		427.89		29.33	2.86E-01		1.28E-01	1.36E-01
		463.38		10.35	8.44E-01		3.93E-01	3.98E-01
		600.56		17.80	5.67E-01		1.48E-01	2.66E-01
		635.90		11.32	8.23E-01		-2.05E-01	3.82E-01
	SB-126	414.70		83.30	2.65E+01	2.65E+01	-5.44E+00	1.26E+01
		666.33		99.60	3.06E+01		-8.54E+00	1.44E+01
		695.00		99.60	3.09E+01		1.23E+00	1.45E+01
		720.50		53.80	5.54E+01		2.75E+00	2.59E+01
+	SN-126	87.57	*	37.00	3.48E-01	3.48E-01	3.21E-01	1.72E-01
	SB-127	473.00		25.00	2.56E+07	2.35E+07	1.73E+07	1.21E+07
		685.20		35.70	2.35E+07		9.16E+06	1.10E+07
		783.80		14.70	6.56E+07		2.87E+07	3.08E+07
	I-129	29.78		57.00	2.71E-01	2.71E-01	5.67E-02	1.32E-01
		33.60		13.20	8.96E-01		1.23E-01	4.36E-01
		39.58		7.52	1.18E+00		-5.05E-01	5.72E-01
	I-131	284.30		6.05	6.26E+03	5.09E+02	-2.90E+02	2.99E+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-131	364.48		81.20	5.09E+02	5.09E+02	6.33E+01	2.41E+02
		636.97		7.26	7.27E+03		-1.58E+03	3.38E+03
		722.89		1.80	3.83E+04		-1.70E+03	1.80E+04
	TE-132	49.72		13.10	1.18E+09	1.56E+08	-6.71E+08	5.75E+08
		228.16		88.00	1.56E+08		3.31E+07	7.55E+07
	BA-133	81.00		33.00	2.14E-01	1.51E-01	-1.59E-02	1.05E-01
		302.84		17.80	4.05E-01		-2.82E-03	1.94E-01
		356.01		60.00	1.51E-01		1.74E-02	7.24E-02
@	I-133	529.87		86.30	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	XE-133	81.00		38.00	1.14E+05	1.14E+05	-8.46E+03	5.59E+04
	CS-134	563.23		8.38	1.17E+00	1.14E-01	9.37E-01	5.50E-01
		569.32		15.43	5.64E-01		1.22E-01	2.62E-01
		604.70		97.60	1.14E-01		1.94E-02	5.38E-02
		795.84		85.40	1.68E-01		8.55E-02	7.89E-02
		801.93		8.73	1.53E+00		-5.42E-01	7.15E-01
	CS-135	268.24		16.00	4.26E-01	4.26E-01	3.17E-02	2.05E-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	1.52E+02	2.31E+01	-2.27E+01	7.40E+01
		163.89		4.61	2.57E+02		2.61E+01	1.25E+02
		176.55		13.56	8.78E+01		7.15E+00	4.25E+01
		273.65		12.66	1.22E+02		2.50E+01	5.87E+01
		340.57		48.50	3.57E+01		1.43E+01	1.71E+01
		818.50		99.70	2.31E+01		-5.10E+00	1.07E+01
		1048.07		79.60	3.40E+01		-1.36E+01	1.57E+01
		1235.34		19.70	1.72E+02		1.01E+02	8.02E+01
+	CS-137	661.65	*	85.12	1.55E-01	1.55E-01	1.73E-01	7.38E-02
	LA-138	788.74		34.00	3.43E-01	1.33E-01	-1.75E-01	1.60E-01
		1435.80		66.00	1.33E-01		2.58E-02	5.66E-02
	CE-139	165.85		80.35	1.17E-01	1.17E-01	-3.07E-02	5.67E-02
	BA-140	162.64		6.70	2.09E+02	7.76E+01	8.32E+01	1.01E+02
		304.84		4.50	3.44E+02		3.87E+01	1.64E+02
		423.70		3.20	5.66E+02		6.22E+01	2.67E+02
		437.55		2.00	8.58E+02		-3.77E+02	4.03E+02
		537.32		25.00	7.76E+01		-6.66E-02	3.63E+01
	LA-140	328.77		20.50	8.97E+01	2.75E+01	7.45E+01	4.30E+01
		487.03		45.50	3.86E+01		1.51E+01	1.81E+01
		815.85		23.50	1.15E+02		-1.63E+01	5.33E+01
		1596.49		95.49	2.75E+01		2.30E+00	1.19E+01
	CE-141	145.44		48.40	1.02E+00	1.02E+00	6.58E-01	4.94E-01
@	CE-143	57.36		11.80	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		293.26		42.00	1.00E+26		1.00E+26	1.00E+20
@		664.55		5.20	1.00E+26		1.00E+26	1.00E+20
	CE-144	133.54		10.80	6.42E-01	6.42E-01	1.52E-01	3.12E-01
	PM-144	476.78		42.00	2.28E-01	1.15E-01	1.28E-02	1.07E-01
		618.01		98.60	1.15E-01		1.66E-02	5.35E-02
		696.49		99.49	1.37E-01		-9.17E-02	6.41E-02
	PM-145	36.85		21.70	4.56E-01	2.44E-01	-2.92E-01	2.22E-01
		37.36		39.70	2.44E-01		-1.56E-01	1.18E-01
		42.30		15.10	5.59E-01		-5.62E-01	2.72E-01
		72.40		2.31	3.51E+00		-6.82E+00	1.72E+00
	PM-146	453.90		39.94	1.99E-01	1.99E-01	2.82E-03	9.35E-02

Analysis Report for 1707091-13

HTC-A08-BKGD02-0006-01

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	PM-146	735.90		14.01	7.32E-01	1.99E-01	-1.10E-01	3.39E-01
		747.13		13.10	7.53E-01		-5.17E-01	3.47E-01
	ND-147	91.11		28.90	1.45E+02	1.45E+02	1.71E+02	7.10E+01
		531.02		13.10	3.63E+02		-8.23E+01	1.70E+02
	PM-149	285.90		3.10	1.11E+14	1.11E+14	-2.26E+13	5.30E+13
	EU-152	121.78		20.50	2.67E-01	2.67E-01	4.71E-02	1.30E-01
		244.69		5.40	1.35E+00		-2.04E-01	6.50E-01
		344.27		19.13	3.89E-01		4.37E-02	1.86E-01
		778.89		9.20	1.19E+00		-2.48E-01	5.53E-01
		964.01		10.40	1.46E+00		2.02E-01	6.87E-01
		1085.78		7.22	1.82E+00		1.39E-02	8.38E-01
		1112.02		9.60	1.47E+00		2.14E-01	6.78E-01
		1407.95		14.94	7.59E-01		2.37E-02	3.36E-01
	GD-153	97.43		31.30	2.46E-01	2.46E-01	2.85E-02	1.20E-01
		103.18		22.20	3.30E-01		7.57E-02	1.61E-01
	EU-154	123.07		40.50	1.37E-01	1.37E-01	4.72E-03	6.66E-02
		723.30		19.70	6.26E-01		-1.36E-02	2.95E-01
		873.19		11.50	9.00E-01		-5.12E-01	4.12E-01
		996.32		10.30	1.24E+00		3.26E-01	5.72E-01
		1004.76		17.90	7.18E-01		2.10E-01	3.32E-01
		1274.45		35.50	3.53E-01		-1.64E-02	1.60E-01
+	EU-155	86.50	*	30.90	4.33E-01	2.76E-01	4.00E-01	2.14E-01
		105.30		20.70	2.76E-01		7.80E-04	1.34E-01
	EU-156	811.77		10.40	1.10E+02	1.10E+02	1.14E+01	5.14E+01
		1153.47		7.20	2.10E+02		4.26E+01	9.73E+01
		1230.71		8.90	1.59E+02		-4.75E+00	7.32E+01
	HO-166M	184.41		72.60	9.75E-02	9.75E-02	1.44E-01	4.75E-02
		280.45		29.60	2.21E-01		-2.39E-02	1.06E-01
		410.94		11.10	7.27E-01		6.09E-02	3.46E-01
		711.69		54.10	2.16E-01		-6.61E-02	1.02E-01
	TM-171	66.72		0.14	5.58E+01	5.58E+01	-4.32E+01	2.74E+01
	HF-172	67.35		5.31	1.47E+00	5.46E-01	-1.14E+00	7.20E-01
		125.81		11.30	5.46E-01		-2.80E-03	2.66E-01
	LU-172	181.53		20.60	1.06E+04	6.86E+03	8.55E+02	5.14E+03
		900.72		29.81	1.32E+04		-1.90E+03	6.12E+03
		1093.66		62.50	6.86E+03		-2.50E+03	3.15E+03
	LU-173	100.72		5.24	1.17E+00	4.06E-01	-3.24E-02	5.70E-01
		272.11		21.20	4.06E-01		7.16E-03	1.96E-01
	HF-175	343.40		84.00	2.37E-01	2.37E-01	2.66E-02	1.13E-01
	LU-176	88.34		13.30	5.23E-01	6.83E-02	-1.01E-01	2.56E-01
		201.83		86.00	7.40E-02		-9.65E-04	3.59E-02
		306.78		94.00	6.83E-02		-1.24E-02	3.26E-02
	HF-181	133.02		41.70	6.96E-01	4.96E-01	1.56E-01	3.39E-01
		345.85		17.20	2.13E+00		2.51E-01	1.01E+00
		482.03		82.80	4.96E-01		9.38E-02	2.33E-01
	TA-182	67.75		41.20	3.06E-01	3.06E-01	-5.46E-01	1.50E-01
		1121.30		34.90	9.26E-01		5.97E-02	4.35E-01
		1189.05		16.23	1.82E+00		8.68E-01	8.45E-01
		1221.41		26.98	1.00E+00		3.46E-02	4.62E-01
		1231.02		11.44	2.35E+00		-6.80E-02	1.08E+00
	IR-192	308.46		29.68	5.60E-01	4.16E-01	-3.99E-02	2.67E-01
		468.07		48.10	4.16E-01		-1.98E-01	1.96E-01
	HG-203	279.19		77.30	3.93E-01	3.93E-01	-6.20E-02	1.88E-01

Analysis Report for 1707091-13

HTC-A08-BKGD02-0006-01

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	TL-204	374.74		94.11	7.94E-02	7.94E-02	9.52E-03	3.77E-02
		899.15		99.16	1.13E-01		-2.60E-02	5.18E-02
		911.74		91.10	2.17E-01		3.81E-01	1.03E-01
	BI-207	569.67		97.72	8.16E-02	8.16E-02	1.77E-02	3.79E-02
		1063.62		74.90	1.60E-01		-4.99E-03	7.34E-02
+	TL-208	583.14	*	30.22	4.67E-01	3.90E-01	1.32E+00	2.24E-01
		860.37		4.48	2.66E+00		-6.88E-01	1.24E+00
		2614.66	*	35.85	3.90E-01		1.09E+00	1.61E-01
	BI-210M	262.00		45.00	1.31E-01	1.31E-01	-1.07E-02	6.26E-02
		300.00		23.00	3.25E-01		-6.15E-01	1.56E-01
	PB-210	46.50		4.25	1.91E+00	1.91E+00	1.38E+00	9.31E-01
	PB-211	404.84		2.90	2.67E+00	2.67E+00	-4.90E-01	1.26E+00
		831.96		2.90	4.01E+00		-4.21E-01	1.87E+00
+	BI-212	727.17	*	11.80	1.11E+00	1.11E+00	1.46E+00	5.24E-01
		1620.62		2.75	3.42E+00		2.23E-01	1.45E+00
+	PB-212	238.63	*	44.60	2.38E-01	2.38E-01	1.27E+00	1.17E-01
		300.09	*	3.41	1.79E+00		9.59E-01	8.52E-01
+	BI-214	609.31	*	46.30	2.39E-01	2.39E-01	8.95E-01	1.13E-01
		1120.29	*	15.10	1.22E+00		8.50E-01	5.74E-01
		1764.49	*	15.80	6.55E-01		9.46E-01	2.77E-01
		2204.22		4.98	2.23E+00		-8.50E-02	9.16E-01
+	PB-214	295.21	*	19.19	5.37E-01	2.87E-01	7.27E-01	2.61E-01
		351.92	*	37.19	2.87E-01		8.66E-01	1.39E-01
	RN-219	401.80		6.50	1.15E+00	1.15E+00	-2.85E-01	5.45E-01
	RA-223	323.87		3.88	1.79E+00	1.79E+00	-2.97E-02	8.54E-01
	RA-224	240.98		3.95	3.06E+00	3.06E+00	1.45E+01	1.50E+00
	RA-225	40.00		31.00	3.17E+01	3.17E+01	-1.36E+01	1.54E+01
+	RA-226	186.21	*	3.28	2.34E+00	2.34E+00	2.68E+00	1.14E+00
	TH-227	50.10		8.40	8.63E-01	8.63E-01	-4.91E-01	4.21E-01
		236.00		11.50	9.10E-01		1.55E-01	4.45E-01
		256.20		6.30	1.04E+00		3.49E-01	4.99E-01
+	AC-228	338.32	*	11.40	8.69E-01	6.16E-01	1.29E+00	4.20E-01
		911.07	*	27.70	6.16E-01		1.57E+00	2.92E-01
		969.11	*	16.60	1.18E+00		9.33E-01	5.63E-01
	TH-230	48.44		16.90	4.54E-01	4.54E-01	1.72E-01	2.21E-01
		62.85		4.60	1.64E+00		1.77E+00	8.05E-01
		67.67		0.37	1.85E+01		-3.30E+01	9.05E+00
	PA-231	283.67		1.60	3.93E+00	3.08E+00	-1.82E-01	1.88E+00
		302.67		2.30	3.08E+00		-2.14E-02	1.47E+00
	TH-231	25.64		14.70	1.53E+00	1.03E+00	6.06E-01	7.46E-01
		84.21		6.40	1.03E+00		-8.01E-02	5.06E-01
	PA-233	311.98		38.60	2.25E+00	2.25E+00	1.51E-01	1.07E+00
	PA-234	131.20		20.40	2.77E-01	2.77E-01	-2.70E-02	1.35E-01
		733.99		8.80	1.15E+00		1.22E-01	5.35E-01
		946.00		12.00	9.56E-01		-6.03E-02	4.40E-01
	PA-234M	1001.03		0.92	1.36E+01	1.36E+01	-3.25E+00	6.29E+00
+	TH-234	63.29	*	3.80	5.47E+00	5.47E+00	3.21E+00	2.71E+00
	U-235	143.76		10.50	5.47E-01	5.47E-01	3.05E-01	2.66E-01
		163.35		4.70	1.26E+00		5.01E-01	6.10E-01
		205.31		4.70	1.35E+00		-9.62E-01	6.55E-01
+	NP-237	86.50	*	12.60	1.02E+00	1.02E+00	9.43E-01	5.05E-01
	NP-239	106.10		22.70	1.95E+12	1.95E+12	1.05E+12	9.50E+11
		228.18		10.70	4.86E+12		1.03E+12	2.35E+12

Analysis Report for 1707091-13

HTC-A08-BKGD02-0006-01

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
NP-239	277.60	14.10	3.90E+12	1.95E+12	1.14E+12	1.87E+12
AM-241	59.54	35.90	2.04E-01	2.04E-01	-4.83E-02	9.99E-02
AM-243	74.67	66.00	1.46E-01	1.46E-01	6.81E-01	7.21E-02
CM-243	209.75	3.29	2.07E+00	4.95E-01	3.34E-01	1.00E+00
	228.14	10.60	6.18E-01		1.31E-01	2.98E-01
	277.60	14.00	4.95E-01		1.44E-01	2.38E-01

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

No Action Level results available for reporting purposes.

DATA REVIEW COMMENTS REPORT

Creation Date	Comment	User

No Data Review Comments Entered.

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

Sample Title: HTC-A08-BKGD02-0006-01

Elapsed Live time: 3600
Elapsed Real Time: 3602

Channel								
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	18	81
17:	83	87	77	63	65	74	74	82
25:	62	78	59	63	59	70	80	56
33:	66	48	77	48	62	62	60	68
41:	73	62	71	75	104	104	73	70
49:	63	70	68	89	80	86	83	79
57:	87	100	90	108	142	137	159	111
65:	102	95	115	114	97	116	125	144
73:	221	277	291	321	249	127	84	92
81:	105	95	111	108	123	155	149	102
89:	139	102	145	152	139	91	77	69
97:	62	70	81	72	68	79	66	81
105:	76	73	77	75	70	59	63	58
113:	76	55	71	54	66	64	66	69
121:	62	57	75	61	65	63	67	82
129:	81	68	49	51	66	81	50	54
137:	56	52	53	59	62	50	77	67
145:	53	65	56	54	44	45	59	67
153:	51	60	51	61	52	61	64	58
161:	60	66	54	44	40	51	40	50
169:	49	33	57	53	62	50	33	37
177:	52	48	54	50	48	52	45	85
185:	105	70	59	30	46	65	49	41
193:	46	47	49	54	43	51	38	57
201:	49	36	44	45	44	44	48	54
209:	60	45	51	36	54	41	36	41
217:	33	18	41	46	39	34	32	30
225:	30	43	48	40	41	35	39	37
233:	50	35	28	55	182	278	136	80
241:	79	59	41	26	20	26	33	19
249:	38	40	24	41	38	25	26	22
257:	32	30	21	27	22	26	20	19
265:	29	35	20	31	32	47	47	25
273:	31	38	31	35	33	19	22	25
281:	28	22	29	20	23	13	21	29
289:	19	26	28	23	46	91	84	32
297:	28	29	38	35	28	15	25	19
305:	19	21	21	21	16	18	26	20
313:	20	20	20	17	16	25	18	23
321:	15	18	20	22	22	29	22	35
329:	27	29	17	12	20	13	25	37
337:	44	55	24	23	25	17	16	24
345:	21	21	12	22	21	70	132	87
353:	32	19	11	17	24	13	16	15
361:	16	12	18	21	14	16	16	14

369:	16	13	21	23	10	9	18	15

Sample Title: HTC-A08-BKGD02-0006-01

Channel								
377:	18	16	16	14	19	18	14	27
385:	18	16	23	24	17	20	20	15
393:	20	17	17	22	18	11	14	12
401:	20	14	18	20	17	13	13	20
409:	22	25	15	14	13	17	19	13
417:	21	11	14	17	16	12	11	14
425:	15	16	18	11	16	15	9	15
433:	10	9	10	9	9	20	16	11
441:	17	17	12	16	13	6	9	10
449:	11	13	11	14	10	14	13	13
457:	21	7	14	13	18	15	16	7
465:	10	17	10	11	15	15	13	17
473:	11	9	13	6	9	20	16	10
481:	12	11	3	10	14	10	11	10
489:	12	10	9	10	11	17	10	8
497:	13	10	12	13	16	18	7	13
505:	12	18	11	16	38	45	27	18
513:	13	11	9	5	10	8	6	13
521:	9	11	6	10	10	13	9	9
529:	12	6	18	7	10	8	15	14
537:	6	10	8	9	14	8	14	15
545:	7	10	7	7	7	11	8	9
553:	12	5	8	7	6	9	13	8
561:	10	17	13	5	11	5	5	12
569:	6	11	8	11	6	8	8	7
577:	12	15	10	13	37	57	59	27
585:	15	11	4	7	7	9	7	12
593:	11	7	15	6	11	12	9	9
601:	9	9	16	11	5	14	23	85
609:	76	36	9	7	11	12	8	16
617:	9	7	10	7	10	8	11	8
625:	14	10	9	11	5	7	14	7
633:	11	4	10	10	9	5	8	9
641:	8	8	9	9	5	10	9	11
649:	8	7	9	7	7	5	4	4
657:	4	5	11	29	26	15	11	8
665:	11	4	12	4	8	8	10	16
673:	6	6	10	8	6	7	11	11
681:	10	6	6	4	9	8	10	12
689:	5	4	8	9	7	7	6	15
697:	8	12	7	9	16	19	9	2
705:	9	16	10	7	7	14	7	8
713:	12	9	10	8	11	7	8	4
721:	5	7	8	8	9	22	16	15
729:	9	4	10	3	5	11	2	8
737:	6	4	6	4	10	6	5	3
745:	5	9	9	4	5	3	10	8
753:	7	8	6	2	12	5	3	7
761:	8	13	7	13	6	5	10	19
769:	8	14	12	12	6	10	8	1
777:	4	8	10	4	10	4	12	9
785:	15	6	8	6	8	3	9	4
793:	13	9	12	13	6	10	9	8

801:	8	10	9	4	8	7	8	5

Sample Title: HTC-A08-BKGD02-0006-01

Channel								
809:	4	10	4	9	6	7	9	8
817:	3	7	7	5	10	3	4	11
825:	4	11	4	7	6	10	7	7
833:	6	5	9	6	8	7	7	7
841:	11	6	9	6	4	13	1	2
849:	3	5	6	7	6	8	7	7
857:	4	7	8	9	7	7	6	5
865:	7	9	5	6	4	4	4	6
873:	4	10	0	4	5	9	6	6
881:	5	6	3	7	9	10	6	4
889:	10	6	4	6	5	3	4	4
897:	5	2	5	6	4	4	9	12
905:	7	7	5	5	20	40	34	19
913:	5	7	6	3	2	2	5	3
921:	1	3	7	4	1	4	8	5
929:	4	1	10	6	10	5	8	5
937:	6	4	5	4	6	9	3	3
945:	4	5	4	6	6	5	7	4
953:	2	11	7	6	1	2	3	6
961:	4	6	14	10	12	11	13	24
969:	12	11	6	6	2	7	5	1
977:	5	5	5	10	4	3	5	6
985:	3	7	4	6	3	2	6	3
993:	5	4	9	6	4	7	3	9
1001:	4	6	4	7	7	6	3	4
1009:	4	4	0	5	4	3	3	4
1017:	8	2	5	3	3	8	4	5
1025:	3	4	7	3	5	4	4	8
1033:	5	7	1	3	2	1	5	1
1041:	6	4	6	7	7	8	4	6
1049:	5	4	5	8	10	8	4	8
1057:	2	6	4	5	4	4	7	2
1065:	5	5	4	5	5	8	3	5
1073:	2	4	9	6	3	8	5	4
1081:	3	3	14	3	3	7	6	6
1089:	1	6	5	6	3	4	6	4
1097:	7	5	7	2	3	6	8	5
1105:	3	4	6	6	4	8	5	6
1113:	5	4	7	6	9	9	17	15
1121:	9	6	4	8	6	5	8	3
1129:	3	5	2	4	11	3	11	4
1137:	4	4	7	3	3	7	4	2
1145:	5	8	4	5	4	7	9	4
1153:	5	11	8	7	2	2	11	3
1161:	6	4	3	7	3	4	4	5
1169:	1	6	7	3	5	4	10	5
1177:	5	5	5	7	6	4	3	5
1185:	5	8	5	6	5	7	12	8
1193:	5	1	7	8	4	0	7	5
1201:	8	8	4	5	7	11	6	3
1209:	6	8	7	5	10	5	6	8
1217:	5	6	4	8	7	3	5	4
1225:	6	5	5	3	3	8	5	5

1233:	9	1	8	4	13	14	3	3

Sample Title: HTC-A08-BKGD02-0006-01

Channel								
1241:	7	2	4	7	5	5	3	5
1249:	2	7	5	9	5	4	4	7
1257:	3	5	2	4	2	1	2	4
1265:	6	4	3	2	6	4	2	3
1273:	3	2	9	3	2	2	4	2
1281:	4	1	3	5	4	4	2	4
1289:	3	1	11	3	2	3	3	5
1297:	2	6	2	5	0	2	1	5
1305:	2	1	5	6	1	5	4	3
1313:	2	4	0	2	3	4	6	4
1321:	3	3	2	0	2	2	2	4
1329:	3	2	1	3	3	4	7	4
1337:	5	0	4	2	1	2	3	3
1345:	0	2	2	5	6	1	0	1
1353:	3	0	0	1	1	2	1	4
1361:	0	3	2	2	4	2	4	2
1369:	3	2	4	2	3	3	2	8
1377:	2	4	1	1	2	2	2	2
1385:	2	4	1	1	3	2	1	5
1393:	1	5	4	2	4	5	2	3
1401:	5	3	3	1	3	4	1	4
1409:	0	3	3	1	0	3	0	0
1417:	2	0	5	3	1	4	1	1
1425:	0	1	0	1	1	3	1	1
1433:	4	1	0	1	2	0	1	0
1441:	1	0	2	1	3	2	2	1
1449:	5	2	0	2	4	2	1	2
1457:	2	25	72	135	126	36	7	3
1465:	1	1	3	3	1	2	1	2
1473:	1	1	3	2	2	0	2	2
1481:	0	1	2	0	2	2	0	1
1489:	1	0	1	2	3	3	2	1
1497:	2	3	3	1	1	0	0	0
1505:	2	2	4	3	2	0	2	1
1513:	0	0	1	0	0	1	0	4
1521:	0	1	2	0	1	1	2	2
1529:	4	2	1	0	3	1	4	1
1537:	0	3	4	0	1	3	1	2
1545:	2	3	1	0	0	1	0	0
1553:	1	0	3	2	2	2	0	1
1561:	1	0	2	2	0	0	0	0
1569:	0	5	2	1	0	1	0	2
1577:	2	3	2	0	3	2	1	2
1585:	0	4	1	7	6	3	3	3
1593:	2	1	1	2	2	2	0	2
1601:	0	0	0	0	0	0	1	0
1609:	2	2	1	2	0	3	2	1
1617:	0	2	1	1	0	3	1	1
1625:	0	1	0	2	1	3	4	1
1633:	0	4	0	2	1	0	1	1
1641:	0	2	1	1	1	0	0	0
1649:	0	0	0	2	2	2	0	0
1657:	1	0	1	2	4	0	1	1

1665:	0	1	0	2	2	0	2	2

Sample Title: HTC-A08-BKGD02-0006-01

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

2097:	0	1	1	0	0	3	3	2

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

2529:	1	0	0	0	1	0	0	0

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Channel								
2537:	0	0	0	1	0	0	0	0
2545:	1	1	0	0	0	1	0	0
2553:	1	0	0	0	0	0	0	1
2561:	0	1	0	0	0	0	1	0
2569:	0	0	0	1	0	0	0	0
2577:	0	2	0	1	0	0	0	0
2585:	0	0	0	0	0	0	0	0
2593:	0	0	0	1	1	1	0	0
2601:	0	0	0	0	0	1	0	0
2609:	1	0	1	2	5	15	12	9
2617:	3	0	1	0	0	0	0	0
2625:	1	0	0	1	0	0	0	0
2633:	1	1	0	0	0	0	2	0
2641:	0	0	0	0	0	0	2	0
2649:	0	1	0	0	1	1	0	0
2657:	0	0	1	0	0	0	0	1
2665:	0	0	1	1	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	1	0	0	1
2697:	0	1	0	0	0	0	0	1
2705:	0	0	1	1	0	0	0	0
2713:	2	1	1	0	0	0	0	0
2721:	0	0	0	0	0	1	0	0
2729:	0	0	0	0	0	0	0	0
2737:	0	0	2	0	0	0	0	0
2745:	0	0	0	0	0	0	0	0
2753:	0	1	0	0	0	0	0	0
2761:	1	0	0	0	0	0	0	0
2769:	0	0	0	0	0	0	0	1
2777:	1	0	0	0	0	0	0	0
2785:	1	0	0	1	0	1	0	1
2793:	0	0	0	0	0	0	1	0
2801:	0	0	0	0	0	1	0	0
2809:	0	0	0	0	0	0	0	0
2817:	0	0	0	0	0	0	0	0
2825:	0	0	0	1	0	0	0	0
2833:	0	0	0	1	0	0	0	0
2841:	0	0	0	0	0	0	0	0
2849:	0	0	2	1	0	0	0	0
2857:	0	0	0	0	0	1	0	0
2865:	0	0	0	0	0	0	0	0
2873:	0	0	0	0	0	1	0	0
2881:	0	0	0	0	1	1	0	0
2889:	0	0	0	0	0	0	0	0
2897:	0	0	0	0	0	1	0	0
2905:	0	0	0	0	0	0	0	0
2913:	0	0	0	0	0	0	0	0
2921:	0	1	0	0	0	0	0	0
2929:	0	1	0	1	0	0	0	0
2937:	0	0	0	0	0	0	0	0
2945:	0	1	0	1	0	0	0	0
2953:	0	0	0	0	2	0	0	0

2961:	1	1	0	0	0	0	1	0

Sample Title: HTC-A08-BKGD02-0006-01

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

3393:	0	0	1	0	0	0	0	1

Sample Title: HTC-A08-BKGD02-0006-01

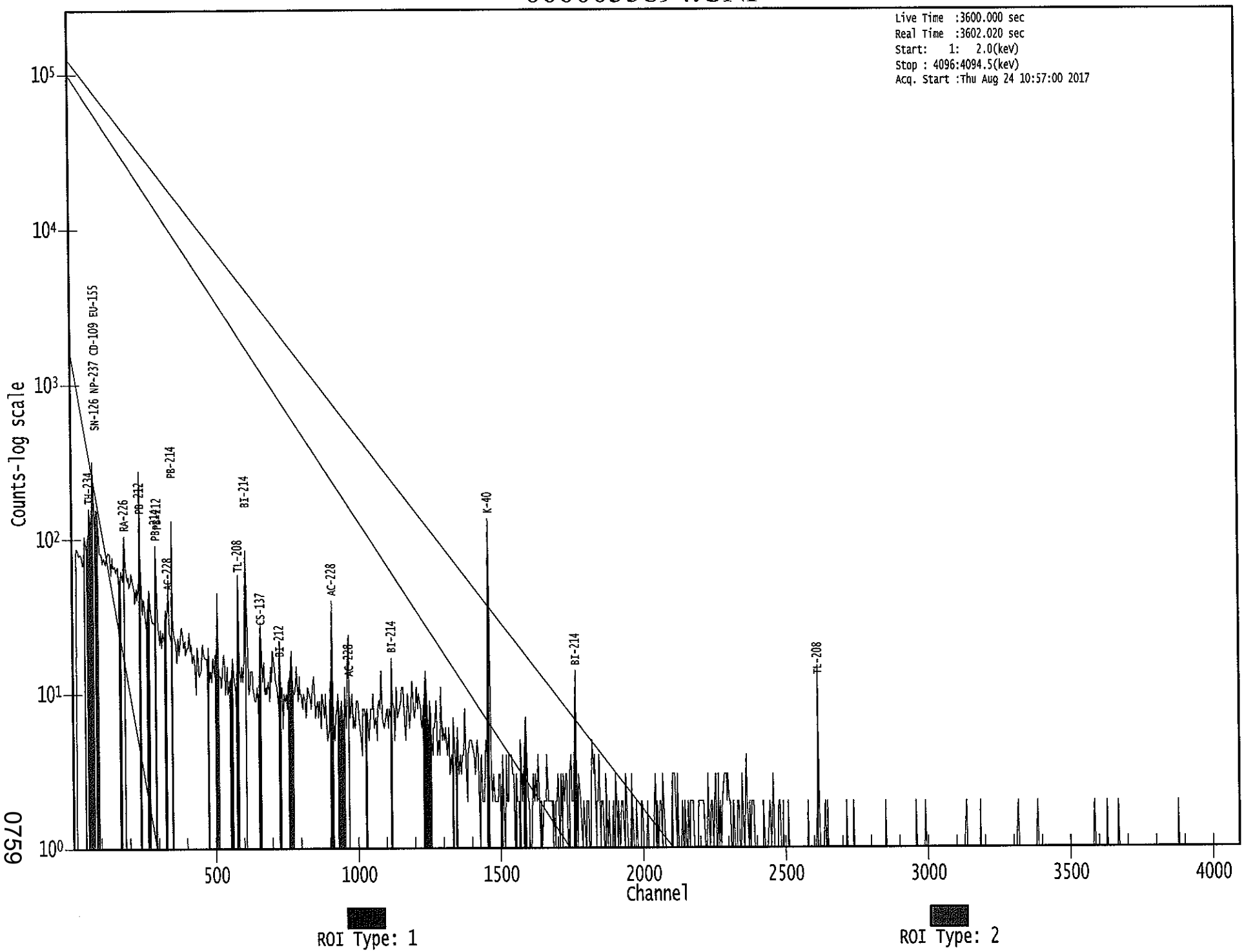
Channel								
3401:	0	0	0	0	0	0	0	0
3409:	0	0	0	0	0	0	0	0
3417:	0	0	0	0	1	0	0	0
3425:	0	0	0	0	0	1	0	0
3433:	0	0	0	0	0	1	0	0
3441:	0	1	1	0	0	0	0	0
3449:	0	1	1	0	0	0	0	0
3457:	0	0	0	1	0	0	0	0
3465:	0	1	0	1	0	0	0	0
3473:	0	0	0	0	0	0	0	0
3481:	0	1	1	0	0	0	0	1
3489:	0	0	0	0	0	0	0	0
3497:	0	0	0	0	1	0	0	0
3505:	0	0	0	0	1	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	1	0	0	1	0
3537:	0	1	0	0	0	0	1	0
3545:	0	0	0	0	0	0	0	0
3553:	0	0	0	0	0	0	0	0
3561:	0	0	0	1	0	0	0	1
3569:	0	0	0	1	0	0	0	0
3577:	0	0	1	0	0	0	0	2
3585:	0	0	1	0	0	1	0	0
3593:	0	0	0	0	0	0	0	0
3601:	0	0	1	1	0	0	0	0
3609:	0	0	0	0	0	0	0	0
3617:	0	1	0	1	0	0	0	0
3625:	0	0	0	2	0	1	0	0
3633:	1	0	0	0	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:	1	0	0	2	1	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:	0	0	0	0	0	0	0	0
3713:	0	0	0	0	0	0	0	0
3721:	0	0	0	0	0	0	0	0
3729:	0	0	0	0	0	0	1	0
3737:	0	0	0	0	0	0	0	0
3745:	0	0	0	0	0	0	0	0
3753:	0	0	0	0	0	0	0	0
3761:	0	0	0	0	0	0	0	0
3769:	0	0	0	0	0	0	0	0
3777:	0	0	0	0	0	0	0	0
3785:	1	0	0	0	0	0	0	0
3793:	0	0	0	0	0	0	0	0
3801:	0	0	0	0	0	0	0	0
3809:	0	0	0	1	0	0	0	0
3817:	1	0	0	0	0	0	0	0

3825:	0	0	0	0	0	0	1	0

Sample Title: HTC-A08-BKGD02-0006-01

Channel								
3833:	0	0	0	0	0	0	0	0
3841:	0	0	0	1	0	0	0	0
3849:	0	1	0	0	0	0	0	1
3857:	0	0	0	0	0	1	0	1
3865:	0	1	0	0	0	0	0	0
3873:	0	0	0	0	1	2	0	0
3881:	1	0	0	0	0	0	0	0
3889:	1	0	0	0	0	0	0	0
3897:	0	0	0	0	0	0	0	0
3905:	0	0	0	0	0	0	0	0
3913:	0	1	0	0	0	0	0	0
3921:	1	0	0	0	0	0	0	0
3929:	0	0	0	0	0	0	0	0
3937:	0	0	0	1	0	0	0	1
3945:	0	0	0	0	0	0	0	0
3953:	0	0	0	0	1	0	0	1
3961:	0	0	0	0	0	0	0	0
3969:	0	0	0	0	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	1	0	0	0
4001:	0	0	1	0	0	0	0	0
4009:	0	0	0	0	0	0	1	0
4017:	0	0	1	0	0	0	0	0
4025:	0	0	0	0	1	0	0	0
4033:	0	0	0	0	0	0	0	0
4041:	0	0	0	0	0	0	0	0
4049:	0	0	0	0	0	0	0	0
4057:	0	0	0	0	0	0	0	0
4065:	0	0	0	0	1	1	0	0
4073:	0	0	0	0	0	0	0	0
4081:	0	0	0	0	0	0	0	0
4089:	0	0	1	0	1	0	0	0

0000055894.CNF



0759

Apex-Gamma

Analysis Report for 1707091-14
HTC-A08-BKGD02-0612-01

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 1707091-14
Sample Description	: HTC-A08-BKGD02-0612-01
Sample Type	: SOIL
Sample Size	: 5.846E+02 grams
Facility	: Countroom
Sample Taken On	: 5/15/2017 12:58:13PM
Acquisition Started	: 8/24/2017 11:12:00AM
Procedure	: GAS-1602 pCi
Operator	: Administrator
Detector Name	: GE3
Geometry	: GAS-1602
Live Time	: 3600.0 seconds
Real Time	: 3608.1 seconds
Dead Time	: 0.22 %
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	: 1/14/2017
Efficiency Calibration Used Done On	: 1/14/2017
Efficiency Calibration Description	:
Sample Number	: 55895

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

Analysis Report for 1707091-14

HTC-A08-BKGD02-0612-01

PEAK LOCATE REPORT

Peak Locate Performed on : 8/24/2017 12:12:10PM
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	25.55	25.87	0.0000	0.00
2	63.51	63.81	0.0000	0.00
3	70.05	70.35	0.0000	0.00
4	75.08	75.39	0.0000	0.00
5	77.46	77.76	0.0000	0.00
6	86.72	87.02	0.0000	0.00
7	93.31	93.61	0.0000	0.00
8	153.55	153.83	0.0000	0.00
9	186.10	186.36	0.0000	0.00
10	198.86	199.12	0.0000	0.00
11	209.37	209.62	0.0000	0.00
12	239.03	239.27	0.0000	0.00
13	242.19	242.44	0.0000	0.00
14	269.82	270.06	0.0000	0.00
15	295.94	296.16	0.0000	0.00
16	326.93	327.15	0.0000	0.00
17	338.67	338.88	0.0000	0.00
18	352.14	352.35	0.0000	0.00
19	465.46	465.63	0.0000	0.00
20	511.08	511.23	0.0000	0.00
21	583.56	583.69	0.0000	0.00
22	609.61	609.73	0.0000	0.00
23	911.47	911.49	0.0000	0.00
24	922.43	922.44	0.0000	0.00
25	952.55	952.56	0.0000	0.00
26	969.53	969.53	0.0000	0.00
27	1120.70	1120.65	0.0000	0.00
28	1132.32	1132.27	0.0000	0.00
29	1154.72	1154.66	0.0000	0.00
30	1238.66	1238.56	0.0000	0.00
31	1375.79	1375.65	0.0000	0.00
32	1461.15	1460.98	0.0000	0.00
33	1475.38	1475.21	0.0000	0.00
34	1588.08	1587.87	0.0000	0.00
35	1592.21	1592.00	0.0000	0.00
36	1696.05	1695.80	0.0000	0.00
37	1728.95	1728.70	0.0000	0.00
38	1736.89	1736.63	0.0000	0.00
39	1764.76	1764.49	0.0000	0.00
40	1770.26	1769.99	0.0000	0.00
41	2072.31	2071.94	0.0000	0.00
42	2101.91	2101.53	0.0000	0.00

Analysis Report for 1707091-14

HTC-A08-BKGD02-0612-01

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
43	2203.79	2203.38	0.0000	0.00
44	2353.17	2352.70	0.0000	0.00
45	2366.21	2365.74	0.0000	0.00
46	2614.82	2614.26	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1707091-14

HTC-A08-BKGD02-0612-01

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 8/24/2017 12:12:10PM

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	25.55	22 -	30	25.87	1.11E+02	94.68	1.30E+03	6.19
M	2	63.51	58 -	80	63.81	2.97E+02	133.40	2.13E+03	3.52
m	3	70.05	58 -	80	70.35	1.79E+02	124.18	1.98E+03	3.38
m	4	75.08	58 -	80	75.39	5.56E+02	119.78	1.63E+03	2.78
m	5	77.46	58 -	80	77.76	6.60E+02	101.71	1.25E+03	2.05
	6	86.72	83 -	90	87.02	2.01E+02	107.31	1.80E+03	2.01
	7	93.31	91 -	98	93.61	2.78E+02	101.29	1.45E+03	2.13
	8	153.55	150 -	157	153.83	1.25E+02	74.51	8.30E+02	4.12
	9	186.10	182 -	191	186.36	1.90E+02	89.16	1.03E+03	2.08
	10	198.86	196 -	203	199.12	7.80E+01	67.56	6.94E+02	3.73
	11	209.37	205 -	214	209.62	1.44E+02	79.66	8.22E+02	2.32
M	12	239.03	234 -	247	239.27	7.94E+02	81.12	5.64E+02	2.26
m	13	242.19	234 -	247	242.44	1.36E+02	77.92	5.04E+02	2.27
	14	269.82	266 -	274	270.06	6.09E+01	65.16	6.14E+02	2.74
	15	295.94	291 -	301	296.16	2.54E+02	78.86	6.96E+02	1.79
	16	326.93	322 -	332	327.15	8.11E+01	59.56	4.32E+02	2.14
	17	338.67	334 -	343	338.88	1.65E+02	59.66	4.12E+02	1.65
	18	352.14	348 -	357	352.35	3.69E+02	64.51	3.80E+02	2.25
	19	465.46	459 -	474	465.63	5.84E+01	66.93	4.27E+02	9.31
	20	511.08	506 -	517	511.23	1.24E+02	56.82	3.40E+02	3.24
	21	583.56	578 -	589	583.69	2.25E+02	49.80	1.97E+02	2.50
	22	609.61	604 -	614	609.73	2.41E+02	51.91	2.31E+02	2.28
	23	911.47	907 -	917	911.49	1.44E+02	37.54	1.15E+02	2.45
	24	922.43	918 -	927	922.44	3.30E+01	27.60	9.00E+01	6.77
	25	952.55	949 -	960	952.56	3.86E+01	30.46	9.87E+01	6.73
	26	969.53	966 -	974	969.53	5.02E+01	35.69	1.52E+02	1.85
M	27	1120.70	1116 -	1138	1120.65	4.95E+01	28.44	9.77E+01	2.94
m	28	1132.32	1116 -	1138	1132.27	1.53E+01	24.68	7.92E+01	2.94
	29	1154.72	1151 -	1158	1154.66	2.37E+01	22.45	6.87E+01	2.87
	30	1238.66	1235 -	1244	1238.56	4.87E+01	30.61	1.09E+02	2.31
	31	1375.79	1371 -	1380	1375.65	1.88E+01	22.18	5.83E+01	4.13
	32	1461.15	1454 -	1465	1460.98	5.20E+02	51.15	7.01E+01	2.81
	33	1475.38	1472 -	1479	1475.21	1.05E+01	10.58	1.10E+01	1.17
M	34	1588.08	1585 -	1596	1587.87	9.94E+00	6.96	5.00E+00	4.27
m	35	1592.21	1585 -	1596	1592.00	1.90E+01	11.68	7.00E+00	2.39
	36	1696.05	1691 -	1698	1695.80	8.85E+00	9.17	8.31E+00	2.95
	37	1728.95	1723 -	1733	1728.70	1.78E+01	13.96	1.64E+01	2.04
	38	1736.89	1733 -	1741	1736.63	9.62E+00	9.62	6.77E+00	2.46
M	39	1764.76	1760 -	1772	1764.49	4.13E+01	15.25	9.00E+00	2.87
m	40	1770.26	1760 -	1772	1769.99	6.36E+00	6.04	5.00E+00	2.96

Analysis Report for 1707091-14

HTC-A08-BKGD02-0612-01

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
41	2072.31	2069 -	2074	2071.94	5.64E+00	6.08	2.71E+00	1.90
42	2101.91	2097 -	2106	2101.53	1.70E+01	8.25	0.00E+00	6.66
43	2203.79	2199 -	2206	2203.38	9.03E+00	10.39	1.19E+01	3.11
44	2353.17	2349 -	2355	2352.70	1.00E+01	6.32	0.00E+00	1.92
45	2366.21	2362 -	2368	2365.74	6.80E+00	8.03	6.40E+00	1.77
46	2614.82	2609 -	2619	2614.26	6.14E+01	16.92	5.19E+00	2.06

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 : 8/24/2017 12:12:10PM

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	25.55	22 -	30	1.11E+02	94.68	1.30E+03	7.59E+01
M	2	63.51	58 -	80	2.97E+02	133.40	2.13E+03	7.58E+01
m	3	70.05	58 -	80	1.79E+02	124.18	1.98E+03	7.31E+01
m	4	75.08	58 -	80	5.56E+02	119.78	1.63E+03	6.63E+01
m	5	77.46	58 -	80	6.60E+02	101.71	1.25E+03	5.81E+01
	6	86.72	83 -	90	2.01E+02	107.31	1.80E+03	8.51E+01
	7	93.31	91 -	98	2.78E+02	101.29	1.45E+03	7.86E+01
	8	153.55	150 -	157	1.25E+02	74.51	8.30E+02	5.84E+01
	9	186.10	182 -	191	1.90E+02	89.16	1.03E+03	6.97E+01
	10	198.86	196 -	203	7.80E+01	67.56	6.94E+02	5.36E+01
	11	209.37	205 -	214	1.44E+02	79.66	8.22E+02	6.24E+01
M	12	239.03	234 -	247	7.94E+02	81.12	5.64E+02	3.90E+01
m	13	242.19	234 -	247	1.36E+02	77.92	5.04E+02	3.69E+01
	14	269.82	266 -	274	6.09E+01	65.16	6.14E+02	5.20E+01
	15	295.94	291 -	301	2.54E+02	78.86	6.96E+02	5.93E+01
	16	326.93	322 -	332	8.11E+01	59.56	4.32E+02	4.67E+01
	17	338.67	334 -	343	1.65E+02	59.66	4.12E+02	4.43E+01
	18	352.14	348 -	357	3.69E+02	64.51	3.80E+02	4.26E+01
	19	465.46	459 -	474	5.84E+01	66.93	4.27E+02	2.34E+01
	20	511.08	506 -	517	1.24E+02	56.82	3.40E+02	4.30E+01
	21	583.56	578 -	589	2.25E+02	49.80	1.97E+02	3.27E+01

Analysis Report for 1707091-14

HTC-A08-BKGD02-0612-01

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	22	609.61	604 -	614	2.41E+02	51.91	2.31E+02	3.42E+01
	23	911.47	907 -	917	1.44E+02	37.54	1.15E+02	3.53E+01
	24	922.43	918 -	927	3.30E+01	27.60	9.00E+01	2.06E+01
	25	952.55	949 -	960	3.86E+01	30.46	9.87E+01	2.29E+01
	26	969.53	966 -	974	5.02E+01	35.69	1.52E+02	2.69E+01
M	27	1120.70	1116 -	1138	4.95E+01	28.44	9.77E+01	1.62E+01
m	28	1132.32	1116 -	1138	1.53E+01	24.68	7.92E+01	1.46E+01
	29	1154.72	1151 -	1158	2.37E+01	22.45	6.87E+01	1.66E+01
	30	1238.66	1235 -	1244	4.87E+01	30.61	1.09E+02	2.24E+01
	31	1375.79	1371 -	1380	1.88E+01	22.18	5.83E+01	1.68E+01
	32	1461.15	1454 -	1465	5.20E+02	51.15	7.01E+01	1.90E+01
	33	1475.38	1472 -	1479	1.05E+01	10.58	1.10E+01	6.88E+00
M	34	1588.08	1585 -	1596	9.94E+00	6.96	5.00E+00	3.68E+00
m	35	1592.21	1585 -	1596	1.90E+01	11.68	7.00E+00	4.35E+00
	36	1696.05	1691 -	1698	8.85E+00	9.17	8.31E+00	5.73E+00
	37	1728.95	1723 -	1733	1.78E+01	13.96	1.64E+01	9.14E+00
	38	1736.89	1733 -	1741	9.62E+00	9.62	6.77E+00	6.04E+00
M	39	1764.76	1760 -	1772	4.13E+01	15.25	9.00E+00	4.93E+00
m	40	1770.26	1760 -	1772	6.36E+00	6.04	5.00E+00	3.68E+00
	41	2072.31	2069 -	2074	5.64E+00	6.08	2.71E+00	3.12E+00
	42	2101.91	2097 -	2106	1.70E+01	8.25	0.00E+00	0.00E+00
	43	2203.79	2199 -	2206	9.03E+00	10.39	1.19E+01	6.97E+00
	44	2353.17	2349 -	2355	1.00E+01	6.32	0.00E+00	0.00E+00
	45	2366.21	2362 -	2368	6.80E+00	8.03	6.40E+00	5.02E+00
	46	2614.82	2609 -	2619	6.14E+01	16.92	5.19E+00	5.24E+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 : 8/24/2017 12:12:10PM

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

Analysis Report for 1707091-14

HTC-A08-BKGD02-0612-01

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	1	25.55	22 -	30	25.87	1.11E+02	94.68	1.30E+03	TH-231
M	2	63.51	58 -	80	63.81	2.97E+02	133.40	2.13E+03	TH-234
									TH-230
m	3	70.05	58 -	80	70.35	1.79E+02	124.18	1.98E+03	.....
m	4	75.08	58 -	80	75.39	5.56E+02	119.78	1.63E+03	AM-243
m	5	77.46	58 -	80	77.76	6.60E+02	101.71	1.25E+03	TI-44
	6	86.72	83 -	90	87.02	2.01E+02	107.31	1.80E+03	NP-237
									EU-155
									SN-126
	7	93.31	91 -	98	93.61	2.78E+02	101.29	1.45E+03	GA-67
	8	153.55	150 -	157	153.83	1.25E+02	74.51	8.30E+02	CS-136
	9	186.10	182 -	191	186.36	1.90E+02	89.16	1.03E+03	RA-226
	10	198.86	196 -	203	199.12	7.80E+01	67.56	6.94E+02	.....
	11	209.37	205 -	214	209.62	1.44E+02	79.66	8.22E+02	CM-243
									GA-67
M	12	239.03	234 -	247	239.27	7.94E+02	81.12	5.64E+02	PB-212
m	13	242.19	234 -	247	242.44	1.36E+02	77.92	5.04E+02	.....
	14	269.82	266 -	274	270.06	6.09E+01	65.16	6.14E+02	.....
	15	295.94	291 -	301	296.16	2.54E+02	78.86	6.96E+02	PB-214
	16	326.93	322 -	332	327.15	8.11E+01	59.56	4.32E+02	.....
	17	338.67	334 -	343	338.88	1.65E+02	59.66	4.12E+02	AC-228
	18	352.14	348 -	357	352.35	3.69E+02	64.51	3.80E+02	PB-214
	19	465.46	459 -	474	465.63	5.84E+01	66.93	4.27E+02	.....
	20	511.08	506 -	517	511.23	1.24E+02	56.82	3.40E+02	.....
	21	583.56	578 -	589	583.69	2.25E+02	49.80	1.97E+02	TL-208
	22	609.61	604 -	614	609.73	2.41E+02	51.91	2.31E+02	BI-214
	23	911.47	907 -	917	911.49	1.44E+02	37.54	1.15E+02	TL-204
									AC-228
	24	922.43	918 -	927	922.44	3.30E+01	27.60	9.00E+01	.....
	25	952.55	949 -	960	952.56	3.86E+01	30.46	9.87E+01	.....
	26	969.53	966 -	974	969.53	5.02E+01	35.69	1.52E+02	AC-228
M	27	1120.70	1116 -	1138	1120.65	4.95E+01	28.44	9.77E+01	SC-46
									BI-214
									TA-182
m	28	1132.32	1116 -	1138	1132.27	1.53E+01	24.68	7.92E+01	I-135
	29	1154.72	1151 -	1158	1154.66	2.37E+01	22.45	6.87E+01	.....
	30	1238.66	1235 -	1244	1238.56	4.87E+01	30.61	1.09E+02	CO-56
	31	1375.79	1371 -	1380	1375.65	1.88E+01	22.18	5.83E+01	.....
	32	1461.15	1454 -	1465	1460.98	5.20E+02	51.15	7.01E+01	K-40
	33	1475.38	1472 -	1479	1475.21	1.05E+01	10.58	1.10E+01	.....
M	34	1588.08	1585 -	1596	1587.87	9.94E+00	6.96	5.00E+00	.....
m	35	1592.21	1585 -	1596	1592.00	1.90E+01	11.68	7.00E+00	.....
	36	1696.05	1691 -	1698	1695.80	8.85E+00	9.17	8.31E+00	.....
	37	1728.95	1723 -	1733	1728.70	1.78E+01	13.96	1.64E+01	.....
	38	1736.89	1733 -	1741	1736.63	9.62E+00	9.62	6.77E+00	.....
M	39	1764.76	1760 -	1772	1764.49	4.13E+01	15.25	9.00E+00	BI-214
m	40	1770.26	1760 -	1772	1769.99	6.36E+00	6.04	5.00E+00	.....
	41	2072.31	2069 -	2074	2071.94	5.64E+00	6.08	2.71E+00	.....
	42	2101.91	2097 -	2106	2101.53	1.70E+01	8.25	0.00E+00	.....
	43	2203.79	2199 -	2206	2203.38	9.03E+00	10.39	1.19E+01	BI-214
	44	2353.17	2349 -	2355	2352.70	1.00E+01	6.32	0.00E+00	.....
	45	2366.21	2362 -	2368	2365.74	6.80E+00	8.03	6.40E+00	.....
	46	2614.82	2609 -	2619	2614.26	6.14E+01	16.92	5.19E+00	TL-208

Analysis Report for 1707091-14

HTC-A08-BKGD02-0612-01

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 : 8/24/2017 12:12:10PM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	25.55	1.11E+02	94.68	2.92E-03	1.73E-03
M	2	63.51	2.97E+02	133.40	2.45E-02	1.80E-03
m	3	70.05	1.79E+02	124.18	2.59E-02	1.92E-03
m	4	75.08	5.56E+02	119.78	2.65E-02	2.02E-03
m	5	77.46	6.60E+02	101.71	2.68E-02	2.06E-03
	6	86.72	2.01E+02	107.31	2.71E-02	2.23E-03
	7	93.31	2.78E+02	101.29	2.71E-02	2.24E-03
	8	153.55	1.25E+02	74.51	2.23E-02	1.77E-03
	9	186.10	1.90E+02	89.16	1.96E-02	1.55E-03
	10	198.86	7.80E+01	67.56	1.86E-02	1.50E-03
	11	209.37	1.44E+02	79.66	1.79E-02	1.46E-03
M	12	239.03	7.94E+02	81.12	1.61E-02	1.34E-03
m	13	242.19	1.36E+02	77.92	1.59E-02	1.33E-03
	14	269.82	6.09E+01	65.16	1.46E-02	1.22E-03
	15	295.94	2.54E+02	78.86	1.34E-02	1.15E-03
	16	326.93	8.11E+01	59.56	1.23E-02	1.08E-03
	17	338.67	1.65E+02	59.66	1.19E-02	1.06E-03
	18	352.14	3.69E+02	64.51	1.15E-02	1.03E-03
	19	465.46	5.84E+01	66.93	8.98E-03	8.55E-04
	20	511.08	1.24E+02	56.82	8.25E-03	7.94E-04
	21	583.56	2.25E+02	49.80	7.32E-03	6.98E-04
	22	609.61	2.41E+02	51.91	7.04E-03	6.64E-04
	23	911.47	1.44E+02	37.54	4.92E-03	3.84E-04
	24	922.43	3.30E+01	27.60	4.87E-03	3.82E-04
	25	952.55	3.86E+01	30.46	4.73E-03	3.77E-04
	26	969.53	5.02E+01	35.69	4.66E-03	3.74E-04
M	27	1120.70	4.95E+01	28.44	4.12E-03	3.50E-04
m	28	1132.32	1.53E+01	24.68	4.08E-03	3.48E-04
	29	1154.72	2.37E+01	22.45	4.01E-03	3.44E-04
	30	1238.66	4.87E+01	30.61	3.78E-03	3.22E-04
	31	1375.79	1.88E+01	22.18	3.47E-03	2.89E-04
	32	1461.15	5.20E+02	51.15	3.31E-03	2.75E-04
	33	1475.38	1.05E+01	10.58	3.28E-03	2.73E-04
M	34	1588.08	9.94E+00	6.96	3.10E-03	2.55E-04

Analysis Report for 1707091-14

HTC-A08-BKGD02-0612-01

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
m	35	1592.21	1.90E+01	11.68	3.09E-03	2.54E-04
	36	1696.05	8.85E+00	9.17	2.95E-03	2.37E-04
	37	1728.95	1.78E+01	13.96	2.91E-03	2.32E-04
	38	1736.89	9.62E+00	9.62	2.90E-03	2.31E-04
M	39	1764.76	4.13E+01	15.25	2.86E-03	2.26E-04
m	40	1770.26	6.36E+00	6.04	2.86E-03	2.26E-04
	41	2072.31	5.64E+00	6.08	2.56E-03	2.15E-04
	42	2101.91	1.70E+01	8.25	2.54E-03	2.15E-04
	43	2203.79	9.03E+00	10.39	2.46E-03	2.15E-04
	44	2353.17	1.00E+01	6.32	2.37E-03	2.15E-04
	45	2366.21	6.80E+00	8.03	2.36E-03	2.15E-04
	46	2614.82	6.14E+01	16.92	2.24E-03	2.15E-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 : 8/24/2017 12:12:10PM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000055575.CNF

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	1	25.55	1.11E+02	94.68			1.11E+02	9.47E+01
M	2	63.51	2.97E+02	133.40	4.12E+01	5.67E+00	2.56E+02	1.34E+02
m	3	70.05	1.79E+02	124.18			1.79E+02	1.24E+02
m	4	75.08	5.56E+02	119.78			5.56E+02	1.20E+02
m	5	77.46	6.60E+02	101.71			6.60E+02	1.02E+02
	6	86.72	2.01E+02	107.31			2.01E+02	1.07E+02
	7	93.31	2.78E+02	101.29	7.98E+01	7.31E+00	1.98E+02	1.02E+02
	8	153.55	1.25E+02	74.51			1.25E+02	7.45E+01
	9	186.10	1.90E+02	89.16	3.06E+01	5.82E+00	1.60E+02	8.93E+01
	10	198.86	7.80E+01	67.56	1.17E+01	6.02E+00	6.63E+01	6.78E+01
	11	209.37	1.44E+02	79.66			1.44E+02	7.97E+01
M	12	239.03	7.94E+02	81.12	1.40E+01	2.71E+00	7.80E+02	8.12E+01
m	13	242.19	1.36E+02	77.92			1.36E+02	7.79E+01
	14	269.82	6.09E+01	65.16			6.09E+01	6.52E+01
	15	295.94	2.54E+02	78.86			2.54E+02	7.89E+01
	16	326.93	8.11E+01	59.56			8.11E+01	5.96E+01
	17	338.67	1.65E+02	59.66			1.65E+02	5.97E+01
	18	352.14	3.69E+02	64.51	6.53E+00	4.43E+00	3.62E+02	6.47E+01

Analysis Report for 1707091-14

HTC-A08-BKGD02-0612-01

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	19	465.46	5.84E+01	66.93			5.84E+01	6.69E+01
	20	511.08	1.24E+02	56.82	5.21E+01	4.74E+00	7.21E+01	5.70E+01
	21	583.56	2.25E+02	49.80			2.25E+02	4.98E+01
	22	609.61	2.41E+02	51.91	3.25E+00	2.97E+00	2.37E+02	5.20E+01
	23	911.47	1.44E+02	37.54	2.85E+00	2.76E+00	1.41E+02	3.76E+01
	24	922.43	3.30E+01	27.60			3.30E+01	2.76E+01
	25	952.55	3.86E+01	30.46			3.86E+01	3.05E+01
	26	969.53	5.02E+01	35.69			5.02E+01	3.57E+01
M	27	1120.70	4.95E+01	28.44			4.95E+01	2.84E+01
m	28	1132.32	1.53E+01	24.68			1.53E+01	2.47E+01
	29	1154.72	2.37E+01	22.45			2.37E+01	2.24E+01
	30	1238.66	4.87E+01	30.61			4.87E+01	3.06E+01
	31	1375.79	1.88E+01	22.18			1.88E+01	2.22E+01
	32	1461.15	5.20E+02	51.15	1.00E+00	1.77E+00	5.19E+02	5.12E+01
	33	1475.38	1.05E+01	10.58			1.05E+01	1.06E+01
M	34	1588.08	9.94E+00	6.96			9.94E+00	6.96E+00
m	35	1592.21	1.90E+01	11.68			1.90E+01	1.17E+01
	36	1696.05	8.85E+00	9.17			8.85E+00	9.17E+00
	37	1728.95	1.78E+01	13.96			1.78E+01	1.40E+01
	38	1736.89	9.62E+00	9.62			9.62E+00	9.62E+00
M	39	1764.76	4.13E+01	15.25			4.13E+01	1.52E+01
m	40	1770.26	6.36E+00	6.04			6.36E+00	6.04E+00
	41	2072.31	5.64E+00	6.08			5.64E+00	6.08E+00
	42	2101.91	1.70E+01	8.25			1.70E+01	8.25E+00
	43	2203.79	9.03E+00	10.39			9.03E+00	1.04E+01
	44	2353.17	1.00E+01	6.32			1.00E+01	6.32E+00
	45	2366.21	6.80E+00	8.03			6.80E+00	8.03E+00
	46	2614.82	6.14E+01	16.92	1.86E+00	1.12E+00	5.95E+01	1.70E+01

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

AREA CORRECTION REPORT
REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 8/24/2017 12:12:10PM

Ref. Peak Energy : 0.00 Reference Date :
Peak Ratio : 0.00 Uncertainty : 0.00
Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000055575.CNF

Corrected Area is: Original * Peak Ratio - Background

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.

Analysis Report for 1707091-14

HTC-A08-BKGD02-0612-01

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	1	25.55	1.11E+02	94.68			1.11E+02	9.47E+01
M	2	63.51	2.97E+02	133.40	4.12E+01	5.67E+00	2.56E+02	1.34E+02
m	3	70.05	1.79E+02	124.18			1.79E+02	1.24E+02
m	4	75.08	5.56E+02	119.78			5.56E+02	1.20E+02
m	5	77.46	6.60E+02	101.71			6.60E+02	1.02E+02
	6	86.72	2.01E+02	107.31			2.01E+02	1.07E+02
	7	93.31	2.78E+02	101.29	7.98E+01	7.31E+00	1.98E+02	1.02E+02
	8	153.55	1.25E+02	74.51			1.25E+02	7.45E+01
	9	186.10	1.90E+02	89.16	3.06E+01	5.82E+00	1.60E+02	8.93E+01
	10	198.86	7.80E+01	67.56	1.17E+01	6.02E+00	6.63E+01	6.78E+01
	11	209.37	1.44E+02	79.66			1.44E+02	7.97E+01
M	12	239.03	7.94E+02	81.12	1.40E+01	2.71E+00	7.80E+02	8.12E+01
m	13	242.19	1.36E+02	77.92			1.36E+02	7.79E+01
	14	269.82	6.09E+01	65.16			6.09E+01	6.52E+01
	15	295.94	2.54E+02	78.86			2.54E+02	7.89E+01
	16	326.93	8.11E+01	59.56			8.11E+01	5.96E+01
	17	338.67	1.65E+02	59.66			1.65E+02	5.97E+01
	18	352.14	3.69E+02	64.51	6.53E+00	4.43E+00	3.62E+02	6.47E+01
	19	465.46	5.84E+01	66.93			5.84E+01	6.69E+01
	20	511.08	1.24E+02	56.82	5.21E+01	4.74E+00	7.21E+01	5.70E+01
	21	583.56	2.25E+02	49.80			2.25E+02	4.98E+01
	22	609.61	2.41E+02	51.91	3.25E+00	2.97E+00	2.37E+02	5.20E+01
	23	911.47	1.44E+02	37.54	2.85E+00	2.76E+00	1.41E+02	3.76E+01
	24	922.43	3.30E+01	27.60			3.30E+01	2.76E+01
	25	952.55	3.86E+01	30.46			3.86E+01	3.05E+01
	26	969.53	5.02E+01	35.69			5.02E+01	3.57E+01
M	27	1120.70	4.95E+01	28.44			4.95E+01	2.84E+01
m	28	1132.32	1.53E+01	24.68			1.53E+01	2.47E+01
	29	1154.72	2.37E+01	22.45			2.37E+01	2.24E+01
	30	1238.66	4.87E+01	30.61			4.87E+01	3.06E+01
	31	1375.79	1.88E+01	22.18			1.88E+01	2.22E+01
	32	1461.15	5.20E+02	51.15	1.00E+00	1.77E+00	5.19E+02	5.12E+01
	33	1475.38	1.05E+01	10.58			1.05E+01	1.06E+01
M	34	1588.08	9.94E+00	6.96			9.94E+00	6.96E+00
m	35	1592.21	1.90E+01	11.68			1.90E+01	1.17E+01
	36	1696.05	8.85E+00	9.17			8.85E+00	9.17E+00
	37	1728.95	1.78E+01	13.96			1.78E+01	1.40E+01
	38	1736.89	9.62E+00	9.62			9.62E+00	9.62E+00
M	39	1764.76	4.13E+01	15.25			4.13E+01	1.52E+01
m	40	1770.26	6.36E+00	6.04			6.36E+00	6.04E+00
	41	2072.31	5.64E+00	6.08			5.64E+00	6.08E+00
	42	2101.91	1.70E+01	8.25			1.70E+01	8.25E+00
	43	2203.79	9.03E+00	10.39			9.03E+00	1.04E+01
	44	2353.17	1.00E+01	6.32			1.00E+01	6.32E+00
	45	2366.21	6.80E+00	8.03			6.80E+00	8.03E+00
	46	2614.82	6.14E+01	16.92	1.86E+00	1.12E+00	5.95E+01	1.70E+01

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

Analysis Report for 1707091-14

HTC-A08-BKGD02-0612-01

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	0.982	1460.81	*	10.67	1.89E+01	2.47E+00
SN-126	0.892	87.57	*	37.00	2.58E-01	1.39E-01
EU-155	0.358	86.50	*	30.90	3.20E-01	1.73E-01
		105.30		20.70		
TL-208	0.874	583.14	*	30.22	1.30E+00	3.15E-01
		860.37		4.48		
		2614.66	*	35.85	9.53E-01	2.86E-01
PB-212	0.873	238.63	*	44.60	1.39E+00	1.86E-01
		300.09		3.41		
BI-214	0.983	609.31	*	46.30	9.35E-01	2.23E-01
		1120.29	*	15.10	1.02E+00	5.94E-01
		1764.49	*	15.80	1.17E+00	4.42E-01
		2204.22	*	4.98	9.45E-01	1.09E+00
PB-214	0.967	295.21	*	19.19	1.26E+00	4.07E-01
		351.92	*	37.19	1.08E+00	2.17E-01
RA-226	0.998	186.21	*	3.28	3.19E+00	6.11E+00
AC-228	0.975	338.32	*	11.40	1.56E+00	5.79E-01
		911.07	*	27.70	1.33E+00	3.69E-01
		969.11	*	16.60	8.33E-01	5.96E-01
TH-234	0.993	63.29	*	3.80	3.53E+00	1.86E+00
NP-237	0.992	86.50	*	12.60	7.56E-01	4.08E-01
AM-243	0.973	74.67	*	66.00	4.08E-01	9.32E-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 : 8/24/2017 12:12:10PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

Analysis Report for 1707091-14

HTC-A08-BKGD02-0612-01

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	25.55	3.07856E-02	42.72	Tol.	TH-231
m	3	70.05	4.97357E-02	34.68		
m	5	77.46	1.83277E-01	7.71	Tol.	TI-44
	7	93.31	5.50425E-02	25.63		
	8	153.55	3.47078E-02	29.82	Tol.	CS-136
	10	198.86	1.84166E-02	51.15		
	11	209.37	3.99800E-02	27.67	Tol.	CM-243
m	13	242.19	3.77932E-02	28.64		
	14	269.82	1.69199E-02	53.49		
	16	326.93	2.25379E-02	36.70		
	19	465.46	1.62173E-02	57.32		
	20	511.08	2.00165E-02	39.56		
	24	922.43	9.16667E-03	41.82	Sum	
	25	952.55	1.07323E-02	39.42		
m	28	1132.32	4.25434E-03	80.56	Tol.	I-135
	29	1154.72	6.57088E-03	47.45	Sum	
	30	1238.66	1.35289E-02	31.43		
	31	1375.79	5.23148E-03	58.89		
	33	1475.38	2.91667E-03	50.40		
M	34	1588.08	2.76118E-03	35.03		
m	35	1592.21	5.26828E-03	30.80	D-Esc	
	36	1696.05	2.45727E-03	51.80		
	37	1728.95	4.94658E-03	39.18		
	38	1736.89	2.67094E-03	50.01		
m	40	1770.26	1.76544E-03	47.53		
	41	2072.31	1.56746E-03	53.90		
	42	2101.91	4.72222E-03	24.25		
	44	2353.17	2.77778E-03	31.62		
	45	2366.21	1.88889E-03	59.05		

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 1707091-14

HTC-A08-BKGD02-0612-01

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.98	1460.81	*	10.67	1.89E+01	2.47E+00
SN-126	0.89	87.57	*	37.00	2.58E-01	1.39E-01
EU-155	0.35	86.50	*	30.90	3.20E-01	1.73E-01
		105.30		20.70		
TL-208	0.87	583.14	*	30.22	1.30E+00	3.15E-01
		860.37		4.48		
		2614.66	*	35.85	9.53E-01	2.86E-01
PB-212	0.87	238.63	*	44.60	1.39E+00	1.86E-01
		300.09		3.41		
BI-214	0.98	609.31	*	46.30	9.35E-01	2.23E-01
		1120.29	*	15.10	1.02E+00	5.94E-01
		1764.49	*	15.80	1.17E+00	4.42E-01
		2204.22	*	4.98	9.45E-01	1.09E+00
PB-214	0.96	295.21	*	19.19	1.26E+00	4.07E-01
		351.92	*	37.19	1.08E+00	2.17E-01
RA-226	0.99	186.21	*	3.28	3.19E+00	6.11E+00
AC-228	0.97	338.32	*	11.40	1.56E+00	5.79E-01
		911.07	*	27.70	1.33E+00	3.69E-01
		969.11	*	16.60	8.33E-01	5.96E-01
TH-234	0.99	63.29	*	3.80	3.53E+00	1.86E+00
NP-237	0.99	86.50	*	12.60	7.56E-01	4.08E-01
AM-243	0.97	74.67	*	66.00	4.08E-01	9.32E-02

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

INTERFERENCE CORRECTED REPORT

	Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
	K-40	0.982	1.89E+01	2.47E+00	
?	SN-126	0.892	2.58E-01	1.39E-01	
?	EU-155	0.358	3.20E-01	1.73E-01	
	TL-208	0.874	1.11E+00	2.12E-01	
	PB-212	0.873	1.39E+00	1.86E-01	

Analysis Report for 1707091-14

HTC-A08-BKGD02-0612-01

	Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
	BI-214	0.983	9.86E-01	1.86E-01	
	PB-214	0.967	1.12E+00	1.91E-01	
	RA-226	0.998	3.19E+00	6.11E+00	
	AC-228	0.975	1.27E+00	2.76E-01	
	TH-234	0.993	3.53E+00	1.86E+00	
?	NP-237	0.992	7.56E-01	4.08E-01	
	AM-243	0.973	4.08E-01	9.32E-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

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UNIDENTIFIED PEAKS

Peak Locate Performed on : 8/24/2017 12:12:10PM
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	25.55	3.07856E-02	42.72	Tol.	TH-231
m	3	70.05	4.97357E-02	34.68		
m	5	77.46	1.83277E-01	7.71	Tol.	TI-44
	7	93.31	5.50425E-02	25.63		
	8	153.55	3.47078E-02	29.82	Tol.	CS-136
	10	198.86	1.84166E-02	51.15		
	11	209.37	3.99800E-02	27.67	Tol.	CM-243
m	13	242.19	3.77932E-02	28.64		
	14	269.82	1.69199E-02	53.49		
	16	326.93	2.25379E-02	36.70		
	19	465.46	1.62173E-02	57.32		
	20	511.08	2.00165E-02	39.56		
	24	922.43	9.16667E-03	41.82	Sum	
	25	952.55	1.07323E-02	39.42		
m	28	1132.32	4.25434E-03	80.56	Tol.	I-135
	29	1154.72	6.57088E-03	47.45	Sum	
	30	1238.66	1.35289E-02	31.43		
	31	1375.79	5.23148E-03	58.89		
	33	1475.38	2.91667E-03	50.40		
M	34	1588.08	2.76118E-03	35.03		
m	35	1592.21	5.26828E-03	30.80	D-Esc	
	36	1696.05	2.45727E-03	51.80		
	37	1728.95	4.94658E-03	39.18		
	38	1736.89	2.67094E-03	50.01		
m	40	1770.26	1.76544E-03	47.53		
	41	2072.31	1.56746E-03	53.90		
	42	2101.91	4.72222E-03	24.25		
	44	2353.17	2.77778E-03	31.62		
	45	2366.21	1.88889E-03	59.05		

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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	-4.24E-01	2.63E+00	2.63E+00
+		NA-22	1274.54		99.94	2.53E-02	1.05E-01	1.05E-01
+	@	NA-24	1368.53		99.99	1.00E+26	1.00E+26	1.00E+26
	@		2754.09		99.86	1.00E+26		1.00E+26
+		AL-26	1808.65		99.76	3.20E-02	6.87E-02	6.87E-02
+		K-40	1460.81	*	10.67	1.89E+01	1.49E+00	1.49E+00
+	@	AR-41	1293.64		99.16	1.00E+26	1.00E+26	1.00E+26
+		TI-44	67.88		94.40	-6.06E-02	6.32E-02	6.32E-02
			78.34		96.00	2.23E-01		8.22E-02
+		SC-46	889.25		99.98	-1.07E-01	1.96E-01	1.96E-01
			1120.51		99.99	3.79E-01		3.38E-01
+		V-48	983.52		99.98	-3.94E+00	6.83E+00	6.83E+00
			1312.10		97.50	1.67E+00		8.94E+00
+		CR-51	320.08		9.83	-9.09E-01	7.72E+00	7.72E+00
+		MN-54	834.83		99.97	5.90E-02	1.15E-01	1.15E-01
+		CO-56	846.75		99.96	5.95E-03	2.12E-01	2.12E-01
			1037.75		14.03	-4.54E-01		1.43E+00
			1238.25		67.00	4.47E-01		5.52E-01
			1771.40		15.51	-1.41E-01		1.28E+00
			2598.48		16.90	2.71E-01		1.31E+00
+		CO-57	122.06		85.51	9.60E-03	6.79E-02	6.79E-02
			136.48		10.60	-1.99E-01		5.95E-01
+		CO-58	810.76		99.40	-8.91E-02	2.24E-01	2.24E-01
+		FE-59	1099.22		56.50	-1.58E-02	8.65E-01	8.65E-01
			1291.56		43.20	-1.19E-01		1.24E+00
+		CO-60	1173.22		100.00	2.10E-02	9.88E-02	1.25E-01
			1332.49		100.00	3.13E-02		9.88E-02
+		ZN-65	1115.52		50.75	7.67E-02	3.01E-01	3.01E-01
+		GA-67	93.31		35.70	6.10E+08	3.48E+08	3.48E+08
			208.95		2.24	9.00E+09		6.58E+09
			300.22		16.00	-3.72E+07		1.02E+09
+		SE-75	121.11		16.70	9.16E-02	1.46E-01	4.83E-01

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	SE-75	136.00	59.20	-8.29E-02	1.46E-01	1.46E-01
		264.65	59.80	1.84E-02		1.88E-01
		279.53	25.20	-1.14E-01		4.60E-01
		400.65	11.40	-1.09E+00		1.01E+00
+	RB-82	776.52	13.00	-2.11E-01	1.06E+01	1.06E+01
+	RB-83	520.41	46.00	1.06E-02	3.55E-01	3.55E-01
		529.64	30.30	-1.27E-01		5.07E-01
		552.65	16.40	-1.21E-01		1.02E+00
+	KR-85	513.99	0.43	2.50E+01	2.43E+01	2.43E+01
+	SR-85	513.99	99.27	3.16E-01	3.07E-01	3.07E-01
+	Y-88	898.02	93.40	-6.27E-02	1.56E-01	1.93E-01
		1836.01	99.38	4.92E-02		1.56E-01
+	MO-93	263.06	56.72	6.14E-03	8.80E-02	1.13E-01
		684.67	99.68	3.37E-02		9.38E-02
		1477.11	99.08	-3.02E-03		8.80E-02
+	NB-93M	16.57	9.43	-4.50E+00	6.87E+01	6.87E+01
+	NB-94	702.63	100.00	2.25E-02	7.28E-02	8.51E-02
		871.10	100.00	1.00E-02		7.28E-02
+	NB-95	765.79	99.81	2.57E-01	7.27E-01	7.27E-01
+	NB-95M	235.69	25.00	9.87E+07	1.11E+08	1.11E+08
+	ZR-95	724.18	43.70	-3.42E-01	4.52E-01	6.09E-01
		756.72	55.30	-1.69E-01		4.52E-01
+	MO-99	181.06	6.20	-1.29E+10	7.97E+10	9.04E+10
		739.58	12.80	1.99E+10		7.97E+10
		778.00	4.50	-5.62E+10		2.18E+11
+	RU-103	497.08	89.00	1.54E-02	4.63E-01	4.63E-01
+	RU-106	621.84	9.80	1.17E-01	1.02E+00	1.02E+00
+	AG-108M	433.93	89.90	-6.36E-03	7.36E-02	7.36E-02
		614.37	90.40	-2.86E-03		1.08E-01
		722.95	90.50	-6.94E-02		9.53E-02
+	CD-109	88.03	3.72	1.14E+00	1.92E+00	1.92E+00
+	AG-110M	657.75	93.14	-7.15E-03	1.11E-01	1.11E-01
		677.61	10.53	-2.69E-01		9.92E-01
		706.67	16.46	-4.68E-02		6.88E-01
		763.93	21.98	-2.47E-01		5.41E-01
		884.67	71.63	2.08E-02		1.56E-01
		1384.27	23.94	-7.70E-02		5.24E-01
+	CD-113M	263.70	0.02	-4.11E+01	2.67E+02	2.67E+02
+	SN-113	255.12	1.93	-2.87E-01	1.99E-01	5.99E+00
		391.69	64.90	-1.54E-01		1.99E-01
+	TE123M	159.00	84.10	-4.37E-02	9.64E-02	9.64E-02
+	SB-124	602.71	97.87	-1.33E-02	2.50E-01	2.50E-01
		645.85	7.26	9.27E-01		3.59E+00
		722.78	11.10	-1.80E+00		2.48E+00
		1691.02	49.00	1.11E-01		5.52E-01
+	I-125	35.49	6.49	2.18E+00	6.37E+00	6.37E+00
+	SB-125	176.33	6.89	3.28E-02	2.46E-01	7.97E-01
		427.89	29.33	-1.53E-02		2.46E-01

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	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	SB-125	463.38		10.35	1.72E-01	2.46E-01	8.07E-01
		600.56		17.80	-9.36E-02		4.60E-01
		635.90		11.32	1.13E-01		7.21E-01
+	SB-126	414.70		83.30	-3.69E-01	2.36E+01	2.36E+01
		666.33		99.60	-3.12E+00		2.54E+01
		695.00		99.60	1.69E+01		2.59E+01
		720.50		53.80	-2.75E+01		4.31E+01
+	SN-126	87.57	*	37.00	2.58E-01	2.21E-01	2.21E-01
+	SB-127	473.00		25.00	-5.86E+06	2.01E+07	2.30E+07
		685.20		35.70	7.24E+06		2.01E+07
		783.80		14.70	7.33E+06		4.96E+07
+	I-129	29.78		57.00	3.89E-02	3.76E-01	3.76E-01
		33.60		13.20	-6.04E-01		1.10E+00
		39.58		7.52	-8.35E-01		1.30E+00
+	I-131	284.30		6.05	-3.49E+03	4.88E+02	6.03E+03
		364.48		81.20	5.55E+01		4.88E+02
		636.97		7.26	1.61E+03		6.28E+03
		722.89		1.80	-2.10E+04		2.88E+04
+	TE-132	49.72		13.10	-6.44E+08	1.58E+08	1.17E+09
		228.16		88.00	4.08E+07		1.58E+08
+	BA-133	81.00		33.00	-1.46E-02	1.55E-01	1.73E-01
		302.84		17.80	-1.81E-01		3.90E-01
		356.01		60.00	-3.37E-03		1.55E-01
+	@ I-133	529.87		86.30	1.00E+26	1.00E+26	1.00E+26
+	XE-133	81.00		38.00	-7.78E+03	9.23E+04	9.23E+04
+	CS-134	563.23		8.38	8.79E-01	1.00E-01	1.09E+00
		569.32		15.43	2.80E-02		5.56E-01
		604.70		97.60	1.21E-02		1.00E-01
		795.84		85.40	9.43E-02		1.35E-01
		801.93		8.73	-4.00E-01		1.02E+00
+	CS-135	268.24		16.00	3.80E-01	4.59E-01	4.59E-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	1.45E+02	1.76E+01	1.46E+02
		163.89		4.61	1.33E+01		2.14E+02
		176.55		13.56	3.17E+00		7.71E+01
		273.65		12.66	1.09E+01		1.12E+02
		340.57		48.50	4.82E+01		3.66E+01
		818.50		99.70	7.84E-01		1.76E+01
		1048.07		79.60	-7.56E+00		2.34E+01
		1235.34		19.70	1.84E+00		1.37E+02
+	CS-137	661.65		85.12	5.80E-03	1.02E-01	1.02E-01
+	LA-138	788.74		34.00	-5.96E-02	1.33E-01	2.68E-01
		1435.80		66.00	2.15E-02		1.33E-01
+	CE-139	165.85		80.35	-3.34E-02	9.87E-02	9.87E-02
+	BA-140	162.64		6.70	5.59E+01	6.53E+01	1.73E+02
		304.84		4.50	-3.02E+02		3.25E+02
		423.70		3.20	1.23E+01		4.94E+02

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		Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
		BA-140	437.55		2.00	3.31E+01	6.53E+01	8.49E+02
			537.32		25.00	-1.77E+01		6.53E+01
+		LA-140	328.77		20.50	4.93E+01	2.49E+01	8.40E+01
			487.03		45.50	-2.47E+00		3.83E+01
			815.85		23.50	5.86E+01		9.63E+01
			1596.49		95.49	3.10E-01		2.49E+01
+		CE-141	145.44		48.40	1.03E-01	8.76E-01	8.76E-01
+	@	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	5.32E-02	5.83E-01	5.83E-01
+		PM-144	476.78		42.00	-8.37E-03	1.02E-01	2.13E-01
			618.01		98.60	3.69E-02		1.02E-01
			696.49		99.49	-1.60E-02		1.05E-01
+		PM-145	36.85		21.70	5.41E-03	2.86E-01	5.44E-01
			37.36		39.70	-2.06E-04		2.86E-01
			42.30		15.10	-4.69E-01		5.85E-01
			72.40		2.31	-6.70E+00		3.02E+00
+		PM-146	453.90		39.94	1.06E-01	1.87E-01	1.87E-01
			735.90		14.01	-4.16E-01		6.33E-01
			747.13		13.10	-1.29E-01		6.44E-01
+		ND-147	91.11		28.90	-1.08E+02	1.21E+02	1.21E+02
			531.02		13.10	-9.70E+01		2.98E+02
+		PM-149	285.90		3.10	-2.99E+13	1.10E+14	1.10E+14
+		EU-152	121.78		20.50	3.13E-02	2.22E-01	2.22E-01
			244.69		5.40	-3.48E+00		1.39E+00
			344.27		19.13	4.33E-02		3.54E-01
			778.89		9.20	3.72E-02		1.01E+00
			964.01		10.40	1.52E-01		1.07E+00
			1085.78		7.22	-4.15E-01		1.43E+00
			1112.02		9.60	7.20E-01		1.23E+00
			1407.95		14.94	1.82E-01		6.52E-01
+		GD-153	97.43		31.30	-2.26E-03	1.95E-01	1.95E-01
			103.18		22.20	3.48E-02		2.67E-01
+		EU-154	123.07		40.50	-1.82E-02	1.12E-01	1.12E-01
			723.30		19.70	-3.25E-01		4.47E-01
			873.19		11.50	2.37E-01		6.57E-01
			996.32		10.30	3.10E-01		9.39E-01
			1004.76		17.90	3.00E-01		5.88E-01
			1274.45		35.50	6.77E-02		2.82E-01
+		EU-155	86.50	*	30.90	3.20E-01	2.25E-01	2.75E-01
			105.30		20.70	-1.51E-02		2.25E-01
+		EU-156	811.77		10.40	-3.24E+01	8.44E+01	8.44E+01
			1153.47		7.20	2.43E+01		1.54E+02
			1230.71		8.90	-5.15E+01		1.29E+02
+		HO-166M	184.41		72.60	1.17E-01	8.75E-02	8.75E-02
			280.45		29.60	-5.01E-02		2.17E-01
			410.94		11.10	-2.13E-01		6.35E-01
			711.69		54.10	3.27E-02		1.69E-01

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	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	TM-171	66.72		0.14	-5.26E+01	4.81E+01	4.81E+01
+	HF-172	67.35		5.31	-1.19E+00	4.37E-01	1.25E+00
		125.81		11.30	-4.01E-01		4.37E-01
+	LU-172	181.53		20.60	-8.31E+02	5.86E+03	8.45E+03
		900.72		29.81	4.66E+03		1.11E+04
		1093.66		62.50	7.67E+02		5.86E+03
+	LU-173	100.72		5.24	-2.96E-01	4.05E-01	9.59E-01
		272.11		21.20	3.34E-01		4.05E-01
+	HF-175	343.40		84.00	2.64E-02	2.15E-01	2.15E-01
+	LU-176	88.34		13.30	1.18E-01	5.91E-02	4.70E-01
		201.83		86.00	-3.01E-02		5.91E-02
		306.78		94.00	-1.08E-02		6.48E-02
+	HF-181	133.02		41.70	-2.31E-01	4.85E-01	6.11E-01
		345.85		17.20	2.48E-01		1.96E+00
		482.03		82.80	-9.35E-02		4.85E-01
+	TA-182	67.75		41.20	-2.55E-01	2.66E-01	2.66E-01
		1121.30		34.90	8.49E-01		7.72E-01
		1189.05		16.23	2.22E-01		1.51E+00
		1221.41		26.98	2.29E-02		9.15E-01
		1231.02		11.44	-7.38E-01		1.84E+00
+	IR-192	308.46		29.68	-4.86E-02	4.16E-01	5.32E-01
		468.07		48.10	6.93E-04		4.16E-01
+	HG-203	279.19		77.30	1.65E-01	3.89E-01	3.89E-01
+	TL-204	374.74		94.11	1.98E-02	7.75E-02	7.75E-02
		899.15		99.16	-1.28E-02		9.92E-02
		911.74		91.10	4.26E-01		1.96E-01
+	BI-207	569.67		97.72	-4.61E-03	7.87E-02	7.87E-02
		1063.62		74.90	-6.63E-03		1.45E-01
+	TL-208	583.14	*	30.22	1.30E+00	2.28E-01	3.95E-01
		860.37		4.48	8.01E-01		2.06E+00
		2614.66	*	35.85	9.53E-01		2.28E-01
+	BI-210M	262.00		45.00	-2.18E-03	1.39E-01	1.39E-01
		300.00		23.00	-1.24E-02		3.42E-01
+	PB-210	46.50		4.25	2.00E+00	1.97E+00	1.97E+00
+	PB-211	404.84		2.90	1.30E-01	2.42E+00	2.42E+00
		831.96		2.90	1.03E-01		3.09E+00
+	BI-212	727.17		11.80	2.54E-01	8.48E-01	8.48E-01
		1620.62		2.75	3.86E-01		3.83E+00
+	PB-212	238.63	*	44.60	1.39E+00	2.84E-01	2.84E-01
		300.09		3.41	-8.37E-02		2.30E+00
+	BI-214	609.31	*	46.30	9.35E-01	2.82E-01	2.82E-01
		1120.29	*	15.10	1.02E+00		1.87E+00
		1764.49	*	15.80	1.17E+00		5.49E-01
		2204.22	*	4.98	9.45E-01		1.74E+00
+	PB-214	295.21	*	19.19	1.26E+00	2.65E-01	6.04E-01
		351.92	*	37.19	1.08E+00		2.65E-01
+	RN-219	401.80		6.50	-1.04E+00	1.01E+00	1.01E+00
+	RA-223	323.87		3.88	-1.88E+00	1.63E+00	1.63E+00

Analysis Report for 1707091-14

HTC-A08-BKGD02-0612-01

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	RA-224	240.98		3.95	1.79E+01	3.28E+00	3.28E+00
+	RA-225	40.00		31.00	-2.24E+01	3.49E+01	3.49E+01
+	RA-226	186.21	*	3.28	3.19E+00	2.87E+00	2.87E+00
+	TH-227	50.10		8.40	-4.69E-01	8.53E-01	8.53E-01
		236.00		11.50	8.21E-01		9.20E-01
		256.20		6.30	1.18E-01		1.00E+00
+	AC-228	338.32	*	11.40	1.56E+00	6.95E-01	8.61E-01
		911.07	*	27.70	1.33E+00		6.95E-01
		969.11	*	16.60	8.33E-01		9.39E-01
+	TH-230	48.44		16.90	-1.05E-01	4.57E-01	4.57E-01
		62.85		4.60	1.93E+00		1.47E+00
		67.67		0.37	-1.54E+01		1.61E+01
+	PA-231	283.67		1.60	-1.79E+00	2.96E+00	3.83E+00
		302.67		2.30	-1.37E+00		2.96E+00
+	TH-231	25.64		14.70	9.81E-02	8.99E-01	3.00E+00
		84.21		6.40	-5.56E-01		8.99E-01
+	PA-233	311.98		38.60	6.05E-01	2.19E+00	2.19E+00
+	PA-234	131.20		20.40	1.95E-01	2.51E-01	2.51E-01
		733.99		8.80	-4.59E-03		1.03E+00
		946.00		12.00	-2.08E-01		7.77E-01
+	PA-234M	1001.03		0.92	3.35E+00	1.07E+01	1.07E+01
+	TH-234	63.29	*	3.80	3.53E+00	5.48E+00	5.48E+00
+	U-235	143.76		10.50	-7.57E-03	4.74E-01	4.74E-01
		163.35		4.70	6.40E-02		1.03E+00
		205.31		4.70	-1.51E+00		1.33E+00
+	NP-237	86.50	*	12.60	7.56E-01	6.49E-01	6.49E-01
+	NP-239	106.10		22.70	-1.06E+11	1.59E+12	1.59E+12
		228.18		10.70	1.27E+12		4.90E+12
		277.60		14.10	2.81E+12		3.84E+12
+	AM-241	59.54		35.90	-1.27E-01	1.71E-01	1.71E-01
+	AM-243	74.67	*	66.00	4.08E-01	2.88E-01	2.88E-01
+	CM-243	209.75		3.29	2.76E+00	4.86E-01	2.17E+00
		228.14		10.60	1.61E-01		6.22E-01
		277.60		14.00	3.56E-01		4.86E-01

+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction
? = CAUTION: MDA value is inconsistent with Currie MDA at 95% confidence level

Analysis Report for 1707091-14

HTC-A08-BKGD02-0612-01

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	2.63E+00	2.63E+00	-4.24E-01	1.25E+00
	NA-22	1274.54		99.94	1.05E-01	1.05E-01	2.53E-02	4.77E-02
@	NA-24	1368.53		99.99	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		2754.09		99.86	1.00E+26		1.00E+26	1.00E+20
	AL-26	1808.65		99.76	6.87E-02	6.87E-02	3.20E-02	2.82E-02
+	K-40	1460.81	*	10.67	1.49E+00	1.49E+00	1.89E+01	6.97E-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	6.32E-02	6.32E-02	-6.06E-02	3.09E-02
		78.34		96.00	8.22E-02		2.23E-01	4.04E-02
	SC-46	889.25		99.98	1.96E-01	1.96E-01	-1.07E-01	8.98E-02
		1120.51		99.99	3.38E-01		3.79E-01	1.60E-01
	V-48	983.52		99.98	6.83E+00	6.83E+00	-3.94E+00	3.11E+00
		1312.10		97.50	8.94E+00		1.67E+00	4.07E+00
	CR-51	320.08		9.83	7.72E+00	7.72E+00	-9.09E-01	3.68E+00
	MN-54	834.83		99.97	1.15E-01	1.15E-01	5.90E-02	5.36E-02
	CO-56	846.75		99.96	2.12E-01	2.12E-01	5.95E-03	9.79E-02
		1037.75		14.03	1.43E+00		-4.54E-01	6.45E-01
		1238.25		67.00	5.52E-01		4.47E-01	2.59E-01
		1771.40		15.51	1.28E+00		-1.41E-01	5.44E-01
		2598.48		16.90	1.31E+00		2.71E-01	5.41E-01
	CO-57	122.06		85.51	6.79E-02	6.79E-02	9.60E-03	3.29E-02
		136.48		10.60	5.95E-01		-1.99E-01	2.89E-01
	CO-58	810.76		99.40	2.24E-01	2.24E-01	-8.91E-02	1.04E-01
	FE-59	1099.22		56.50	8.65E-01	8.65E-01	-1.58E-02	3.97E-01
		1291.56		43.20	1.24E+00		-1.19E-01	5.67E-01
	CO-60	1173.22		100.00	1.25E-01	9.88E-02	2.10E-02	5.80E-02
		1332.49		100.00	9.88E-02		3.13E-02	4.43E-02
	ZN-65	1115.52		50.75	3.01E-01	3.01E-01	7.67E-02	1.39E-01
	GA-67	93.31		35.70	3.48E+08	3.48E+08	6.10E+08	1.70E+08
		208.95		2.24	6.58E+09		9.00E+09	3.20E+09
		300.22		16.00	1.02E+09		-3.72E+07	4.95E+08
	SE-75	121.11		16.70	4.83E-01	1.46E-01	9.16E-02	2.34E-01
		136.00		59.20	1.46E-01		-8.29E-02	7.10E-02
		264.65		59.80	1.88E-01		1.84E-02	9.04E-02
		279.53		25.20	4.60E-01		-1.14E-01	2.21E-01
		400.65		11.40	1.01E+00		-1.09E+00	4.80E-01
	RB-82	776.52		13.00	1.06E+01	1.06E+01	-2.11E-01	4.94E+00
	RB-83	520.41		46.00	3.55E-01	3.55E-01	1.06E-02	1.67E-01
		529.64		30.30	5.07E-01		-1.27E-01	2.37E-01
		552.65		16.40	1.02E+00		-1.21E-01	4.77E-01
	KR-85	513.99		0.43	2.43E+01	2.43E+01	2.50E+01	1.16E+01
	SR-85	513.99		99.27	3.07E-01	3.07E-01	3.16E-01	1.47E-01

Analysis Report for 1707091-14

HTC-A08-BKGD02-0612-01

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	Y-88	898.02		93.40	1.93E-01	1.56E-01	-6.27E-02	8.92E-02
		1836.01		99.38	1.56E-01		4.92E-02	6.58E-02
	MO-93	263.06		56.72	1.13E-01	8.80E-02	6.14E-03	5.45E-02
		684.67		99.68	9.38E-02		3.37E-02	4.41E-02
		1477.11		99.08	8.80E-02		-3.02E-03	3.86E-02
	NB-93M	16.57		9.43	6.87E+01	6.87E+01	-4.50E+00	3.34E+01
	NB-94	702.63		100.00	8.51E-02	7.28E-02	2.25E-02	3.98E-02
		871.10		100.00	7.28E-02		1.00E-02	3.30E-02
	NB-95	765.79		99.81	7.27E-01	7.27E-01	2.57E-01	3.41E-01
	NB-95M	235.69		25.00	1.11E+08	1.11E+08	9.87E+07	5.42E+07
	ZR-95	724.18		43.70	6.09E-01	4.52E-01	-3.42E-01	2.85E-01
		756.72		55.30	4.52E-01		-1.69E-01	2.10E-01
	MO-99	181.06		6.20	9.04E+10	7.97E+10	-1.29E+10	4.36E+10
		739.58		12.80	7.97E+10		1.99E+10	3.73E+10
		778.00		4.50	2.18E+11		-5.62E+10	1.01E+11
	RU-103	497.08		89.00	4.63E-01	4.63E-01	1.54E-02	2.18E-01
	RU-106	621.84		9.80	1.02E+00	1.02E+00	1.17E-01	4.80E-01
	AG-108M	433.93		89.90	7.36E-02	7.36E-02	-6.36E-03	3.48E-02
		614.37		90.40	1.08E-01		-2.86E-03	5.10E-02
		722.95		90.50	9.53E-02		-6.94E-02	4.45E-02
	CD-109	88.03		3.72	1.92E+00	1.92E+00	1.14E+00	9.38E-01
	AG-110M	657.75		93.14	1.11E-01	1.11E-01	-7.15E-03	5.16E-02
		677.61		10.53	9.92E-01		-2.69E-01	4.62E-01
		706.67		16.46	6.88E-01		-4.68E-02	3.21E-01
		763.93		21.98	5.41E-01		-2.47E-01	2.52E-01
		884.67		71.63	1.56E-01		2.08E-02	7.16E-02
		1384.27		23.94	5.24E-01		-7.70E-02	2.34E-01
	CD-113M	263.70		0.02	2.67E+02	2.67E+02	-4.11E+01	1.29E+02
	SN-113	255.12		1.93	5.99E+00	1.99E-01	-2.87E-01	2.89E+00
		391.69		64.90	1.99E-01		-1.54E-01	9.47E-02
	TE123M	159.00		84.10	9.64E-02	9.64E-02	-4.37E-02	4.65E-02
	SB-124	602.71		97.87	2.50E-01	2.50E-01	-1.33E-02	1.17E-01
		645.85		7.26	3.59E+00		9.27E-01	1.68E+00
		722.78		11.10	2.48E+00		-1.80E+00	1.16E+00
		1691.02		49.00	5.52E-01		1.11E-01	2.38E-01
	I-125	35.49		6.49	6.37E+00	6.37E+00	2.18E+00	3.10E+00
	SB-125	176.33		6.89	7.97E-01	2.46E-01	3.28E-02	3.85E-01
		427.89		29.33	2.46E-01		-1.53E-02	1.17E-01
		463.38		10.35	8.07E-01		1.72E-01	3.84E-01
		600.56		17.80	4.60E-01		-9.36E-02	2.15E-01
		635.90		11.32	7.21E-01		1.13E-01	3.36E-01
	SB-126	414.70		83.30	2.36E+01	2.36E+01	-3.69E-01	1.12E+01
		666.33		99.60	2.54E+01		-3.12E+00	1.19E+01
		695.00		99.60	2.59E+01		1.69E+01	1.22E+01
		720.50		53.80	4.31E+01		-2.75E+01	2.00E+01
+	SN-126	87.57	*	37.00	2.21E-01	2.21E-01	2.58E-01	1.09E-01
	SB-127	473.00		25.00	2.30E+07	2.01E+07	-5.86E+06	1.09E+07
		685.20		35.70	2.01E+07		7.24E+06	9.46E+06
		783.80		14.70	4.96E+07		7.33E+06	2.31E+07
	I-129	29.78		57.00	3.76E-01	3.76E-01	3.89E-02	1.83E-01
		33.60		13.20	1.10E+00		-6.04E-01	5.32E-01
		39.58		7.52	1.30E+00		-8.35E-01	6.32E-01
	I-131	284.30		6.05	6.03E+03	4.88E+02	-3.49E+03	2.89E+03

Analysis Report for 1707091-14

HTC-A08-BKGD02-0612-01

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
I-131	364.48	81.20	4.88E+02	4.88E+02	5.55E+01	2.33E+02
	636.97	7.26	6.28E+03		1.61E+03	2.93E+03
	722.89	1.80	2.88E+04		-2.10E+04	1.34E+04
TE-132	49.72	13.10	1.17E+09	1.58E+08	-6.44E+08	5.71E+08
	228.16	88.00	1.58E+08		4.08E+07	7.63E+07
BA-133	81.00	33.00	1.73E-01	1.55E-01	-1.46E-02	8.46E-02
	302.84	17.80	3.90E-01		-1.81E-01	1.88E-01
	356.01	60.00	1.55E-01		-3.37E-03	7.51E-02
@ I-133	529.87	86.30	1.00E+26	1.00E+26	1.00E+26	1.00E+20
XE-133	81.00	38.00	9.23E+04	9.23E+04	-7.78E+03	4.51E+04
CS-134	563.23	8.38	1.09E+00	1.00E-01	8.79E-01	5.15E-01
	569.32	15.43	5.56E-01		2.80E-02	2.62E-01
	604.70	97.60	1.00E-01		1.21E-02	4.74E-02
	795.84	85.40	1.35E-01		9.43E-02	6.34E-02
	801.93	8.73	1.02E+00		-4.00E-01	4.72E-01
CS-135	268.24	16.00	4.59E-01	4.59E-01	3.80E-01	2.22E-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	1.46E+02	1.76E+01	1.45E+02	7.09E+01
	163.89	4.61	2.14E+02		1.33E+01	1.03E+02
	176.55	13.56	7.71E+01		3.17E+00	3.73E+01
	273.65	12.66	1.12E+02		1.09E+01	5.42E+01
	340.57	48.50	3.66E+01		4.82E+01	1.77E+01
	818.50	99.70	1.76E+01		7.84E-01	8.14E+00
	1048.07	79.60	2.34E+01		-7.56E+00	1.07E+01
	1235.34	19.70	1.37E+02		1.84E+00	6.36E+01
CS-137	661.65	85.12	1.02E-01	1.02E-01	5.80E-03	4.77E-02
LA-138	788.74	34.00	2.68E-01	1.33E-01	-5.96E-02	1.25E-01
	1435.80	66.00	1.33E-01		2.15E-02	5.88E-02
CE-139	165.85	80.35	9.87E-02	9.87E-02	-3.34E-02	4.76E-02
BA-140	162.64	6.70	1.73E+02	6.53E+01	5.59E+01	8.35E+01
	304.84	4.50	3.25E+02		-3.02E+02	1.55E+02
	423.70	3.20	4.94E+02		1.23E+01	2.34E+02
	437.55	2.00	8.49E+02		3.31E+01	4.03E+02
	537.32	25.00	6.53E+01		-1.77E+01	3.06E+01
LA-140	328.77	20.50	8.40E+01	2.49E+01	4.93E+01	4.04E+01
	487.03	45.50	3.83E+01		-2.47E+00	1.81E+01
	815.85	23.50	9.63E+01		5.86E+01	4.49E+01
	1596.49	95.49	2.49E+01		3.10E-01	1.10E+01
CE-141	145.44	48.40	8.76E-01	8.76E-01	1.03E-01	4.24E-01
@ CE-143	57.36	11.80	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	293.26	42.00	1.00E+26		1.00E+26	1.00E+20
@	664.55	5.20	1.00E+26		1.00E+26	1.00E+20
CE-144	133.54	10.80	5.83E-01	5.83E-01	5.32E-02	2.83E-01
PM-144	476.78	42.00	2.13E-01	1.02E-01	-8.37E-03	1.01E-01
	618.01	98.60	1.02E-01		3.69E-02	4.81E-02
	696.49	99.49	1.05E-01		-1.60E-02	4.91E-02
PM-145	36.85	21.70	5.44E-01	2.86E-01	5.41E-03	2.64E-01
	37.36	39.70	2.86E-01		-2.06E-04	1.39E-01
	42.30	15.10	5.85E-01		-4.69E-01	2.85E-01
	72.40	2.31	3.02E+00		-6.70E+00	1.48E+00
PM-146	453.90	39.94	1.87E-01	1.87E-01	1.06E-01	8.84E-02

Analysis Report for 1707091-14

HTC-A08-BKGD02-0612-01

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	PM-146	735.90		14.01	6.33E-01	1.87E-01	-4.16E-01	2.95E-01
		747.13		13.10	6.44E-01		-1.29E-01	2.98E-01
	ND-147	91.11		28.90	1.21E+02	1.21E+02	-1.08E+02	5.94E+01
		531.02		13.10	2.98E+02		-9.70E+01	1.39E+02
	PM-149	285.90		3.10	1.10E+14	1.10E+14	-2.99E+13	5.26E+13
	EU-152	121.78		20.50	2.22E-01	2.22E-01	3.13E-02	1.07E-01
		244.69		5.40	1.39E+00		-3.48E+00	6.72E-01
		344.27		19.13	3.54E-01		4.33E-02	1.69E-01
		778.89		9.20	1.01E+00		3.72E-02	4.70E-01
		964.01		10.40	1.07E+00		1.52E-01	5.01E-01
		1085.78		7.22	1.43E+00		-4.15E-01	6.58E-01
		1112.02		9.60	1.23E+00		7.20E-01	5.70E-01
		1407.95		14.94	6.52E-01		1.82E-01	2.92E-01
	GD-153	97.43		31.30	1.95E-01	1.95E-01	-2.26E-03	9.48E-02
		103.18		22.20	2.67E-01		3.48E-02	1.30E-01
	EU-154	123.07		40.50	1.12E-01	1.12E-01	-1.82E-02	5.40E-02
		723.30		19.70	4.47E-01		-3.25E-01	2.09E-01
		873.19		11.50	6.57E-01		2.37E-01	2.99E-01
		996.32		10.30	9.39E-01		3.10E-01	4.32E-01
		1004.76		17.90	5.88E-01		3.00E-01	2.72E-01
		1274.45		35.50	2.82E-01		6.77E-02	1.27E-01
+	EU-155	86.50	*	30.90	2.75E-01	2.25E-01	3.20E-01	1.35E-01
		105.30		20.70	2.25E-01		-1.51E-02	1.09E-01
	EU-156	811.77		10.40	8.44E+01	8.44E+01	-3.24E+01	3.91E+01
		1153.47		7.20	1.54E+02		2.43E+01	7.09E+01
		1230.71		8.90	1.29E+02		-5.15E+01	5.93E+01
	HO-166M	184.41		72.60	8.75E-02	8.75E-02	1.17E-01	4.25E-02
		280.45		29.60	2.17E-01		-5.01E-02	1.04E-01
		410.94		11.10	6.35E-01		-2.13E-01	3.02E-01
		711.69		54.10	1.69E-01		3.27E-02	7.91E-02
	TM-171	66.72		0.14	4.81E+01	4.81E+01	-5.26E+01	2.35E+01
	HF-172	67.35		5.31	1.25E+00	4.37E-01	-1.19E+00	6.09E-01
		125.81		11.30	4.37E-01		-4.01E-01	2.12E-01
	LU-172	181.53		20.60	8.45E+03	5.86E+03	-8.31E+02	4.08E+03
		900.72		29.81	1.11E+04		4.66E+03	5.13E+03
		1093.66		62.50	5.86E+03		7.67E+02	2.70E+03
	LU-173	100.72		5.24	9.59E-01	4.05E-01	-2.96E-01	4.65E-01
		272.11		21.20	4.05E-01		3.34E-01	1.96E-01
	HF-175	343.40		84.00	2.15E-01	2.15E-01	2.64E-02	1.03E-01
	LU-176	88.34		13.30	4.70E-01	5.91E-02	1.18E-01	2.30E-01
		201.83		86.00	5.91E-02		-3.01E-02	2.85E-02
		306.78		94.00	6.48E-02		-1.08E-02	3.10E-02
	HF-181	133.02		41.70	6.11E-01	4.85E-01	-2.31E-01	2.97E-01
		345.85		17.20	1.96E+00		2.48E-01	9.36E-01
		482.03		82.80	4.85E-01		-9.35E-02	2.30E-01
	TA-182	67.75		41.20	2.66E-01	2.66E-01	-2.55E-01	1.30E-01
		1121.30		34.90	7.72E-01		8.49E-01	3.64E-01
		1189.05		16.23	1.51E+00		2.22E-01	7.04E-01
		1221.41		26.98	9.15E-01		2.29E-02	4.26E-01
		1231.02		11.44	1.84E+00		-7.38E-01	8.49E-01
	IR-192	308.46		29.68	5.32E-01	4.16E-01	-4.86E-02	2.54E-01
		468.07		48.10	4.16E-01		6.93E-04	1.98E-01
	HG-203	279.19		77.30	3.89E-01	3.89E-01	1.65E-01	1.87E-01

Analysis Report for 1707091-14

HTC-A08-BKGD02-0612-01

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	TL-204	374.74		94.11	7.75E-02	7.75E-02	1.98E-02	3.70E-02
		899.15		99.16	9.92E-02		-1.28E-02	4.59E-02
		911.74		91.10	1.96E-01		4.26E-01	9.38E-02
	BI-207	569.67		97.72	7.87E-02	7.87E-02	-4.61E-03	3.70E-02
		1063.62		74.90	1.45E-01		-6.63E-03	6.72E-02
+	TL-208	583.14	*	30.22	3.95E-01	2.28E-01	1.30E+00	1.90E-01
		860.37		4.48	2.06E+00		8.01E-01	9.55E-01
		2614.66	*	35.85	2.28E-01		9.53E-01	9.24E-02
	BI-210M	262.00		45.00	1.39E-01	1.39E-01	-2.18E-03	6.69E-02
		300.00		23.00	3.42E-01		-1.24E-02	1.65E-01
	PB-210	46.50		4.25	1.97E+00	1.97E+00	2.00E+00	9.60E-01
	PB-211	404.84		2.90	2.42E+00	2.42E+00	1.30E-01	1.15E+00
		831.96		2.90	3.09E+00		1.03E-01	1.43E+00
	BI-212	727.17		11.80	8.48E-01	8.48E-01	2.54E-01	4.00E-01
		1620.62		2.75	3.83E+00		3.86E-01	1.71E+00
+	PB-212	238.63	*	44.60	2.84E-01	2.84E-01	1.39E+00	1.40E-01
		300.09		3.41	2.30E+00		-8.37E-02	1.11E+00
+	BI-214	609.31	*	46.30	2.82E-01	2.82E-01	9.35E-01	1.36E-01
		1120.29	*	15.10	1.87E+00		1.02E+00	9.06E-01
		1764.49	*	15.80	5.49E-01		1.17E+00	2.36E-01
		2204.22	*	4.98	1.74E+00		9.45E-01	7.30E-01
+	PB-214	295.21	*	19.19	6.04E-01	2.65E-01	1.26E+00	2.95E-01
		351.92	*	37.19	2.65E-01		1.08E+00	1.29E-01
	RN-219	401.80		6.50	1.01E+00	1.01E+00	-1.04E+00	4.79E-01
	RA-223	323.87		3.88	1.63E+00	1.63E+00	-1.88E+00	7.79E-01
	RA-224	240.98		3.95	3.28E+00	3.28E+00	1.79E+01	1.61E+00
	RA-225	40.00		31.00	3.49E+01	3.49E+01	-2.24E+01	1.69E+01
+	RA-226	186.21	*	3.28	2.87E+00	2.87E+00	3.19E+00	1.41E+00
	TH-227	50.10		8.40	8.53E-01	8.53E-01	-4.69E-01	4.16E-01
		236.00		11.50	9.20E-01		8.21E-01	4.51E-01
		256.20		6.30	1.00E+00		1.18E-01	4.82E-01
+	AC-228	338.32	*	11.40	8.61E-01	6.95E-01	1.56E+00	4.18E-01
		911.07	*	27.70	6.95E-01		1.33E+00	3.35E-01
		969.11	*	16.60	9.39E-01		8.33E-01	4.47E-01
	TH-230	48.44		16.90	4.57E-01	4.57E-01	-1.05E-01	2.23E-01
		62.85		4.60	1.47E+00		1.93E+00	7.21E-01
		67.67		0.37	1.61E+01		-1.54E+01	7.87E+00
	PA-231	283.67		1.60	3.83E+00	2.96E+00	-1.79E+00	1.84E+00
		302.67		2.30	2.96E+00		-1.37E+00	1.42E+00
	TH-231	25.64		14.70	3.00E+00	8.99E-01	9.81E-02	1.46E+00
		84.21		6.40	8.99E-01		-5.56E-01	4.39E-01
	PA-233	311.98		38.60	2.19E+00	2.19E+00	6.05E-01	1.05E+00
	PA-234	131.20		20.40	2.51E-01	2.51E-01	1.95E-01	1.22E-01
		733.99		8.80	1.03E+00		-4.59E-03	4.83E-01
		946.00		12.00	7.77E-01		-2.08E-01	3.58E-01
	PA-234M	1001.03		0.92	1.07E+01	1.07E+01	3.35E+00	4.91E+00
+	TH-234	63.29	*	3.80	5.48E+00	5.48E+00	3.53E+00	2.72E+00
	U-235	143.76		10.50	4.74E-01	4.74E-01	-7.57E-03	2.30E-01
		163.35		4.70	1.03E+00		6.40E-02	4.96E-01
		205.31		4.70	1.33E+00		-1.51E+00	6.45E-01
+	NP-237	86.50	*	12.60	6.49E-01	6.49E-01	7.56E-01	3.20E-01
	NP-239	106.10		22.70	1.59E+12	1.59E+12	-1.06E+11	7.70E+11
		228.18		10.70	4.90E+12		1.27E+12	2.37E+12

Analysis Report for 1707091-14

HTC-A08-BKGD02-0612-01

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	NP-239	277.60		14.10	3.84E+12	1.59E+12	2.81E+12	1.85E+12
	AM-241	59.54		35.90	1.71E-01	1.71E-01	-1.27E-01	8.36E-02
+	AM-243	74.67	*	66.00	2.88E-01	2.88E-01	4.08E-01	1.43E-01
	CM-243	209.75		3.29	2.17E+00	4.86E-01	2.76E+00	1.06E+00
		228.14		10.60	6.22E-01		1.61E-01	3.01E-01
		277.60		14.00	4.86E-01		3.56E-01	2.34E-01

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

No Action Level results available for reporting purposes.

DATA REVIEW COMMENTS REPORT

Creation Date	Comment	User

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: HTC-A08-BKGD02-0612-01

Elapsed Live time: 3600
Elapsed Real Time: 3608

Channel								
1:	0	0	0	0	0	0	0	0
9:	7	166	146	142	106	121	96	92
17:	89	81	75	68	86	68	95	87
25:	102	85	103	77	87	59	79	64
33:	69	80	85	75	89	79	79	82
41:	78	86	96	73	95	115	140	110
49:	85	95	107	111	95	111	104	110
57:	90	98	107	103	117	122	152	191
65:	146	119	123	107	137	128	145	134
73:	142	174	287	313	356	436	203	91
81:	121	103	95	121	139	115	181	203
89:	142	103	144	127	192	180	105	96
97:	82	79	64	80	80	59	78	81
105:	71	75	67	80	74	88	69	75
113:	75	64	83	66	73	73	69	65
121:	65	74	67	65	53	68	68	69
129:	93	82	77	76	84	75	58	81
137:	73	65	80	82	70	71	75	72
145:	71	62	63	71	67	55	61	77
153:	83	82	74	60	48	42	65	49
161:	50	70	58	62	47	43	55	61
169:	51	60	52	67	66	65	65	68
177:	50	52	50	56	46	49	63	53
185:	64	113	122	65	67	54	56	54
193:	55	57	55	49	61	67	59	59
201:	46	48	36	39	46	49	61	52
209:	58	83	72	52	50	32	48	47
217:	32	49	31	42	44	38	50	46
225:	40	50	43	40	43	51	48	32
233:	42	51	50	54	60	175	365	293
241:	110	98	86	39	37	31	32	35
249:	32	31	33	35	33	28	34	36
257:	39	35	34	40	24	28	24	42
265:	34	37	21	37	53	63	57	39
273:	28	33	33	38	35	36	32	30
281:	36	26	21	31	33	27	14	31
289:	32	29	28	24	33	42	92	151
297:	73	40	31	45	43	26	27	24
305:	21	23	32	13	28	20	22	24
313:	28	22	25	20	22	18	21	26
321:	17	16	28	23	26	23	25	42
329:	39	26	26	23	22	23	24	28
337:	35	44	93	53	33	19	19	19
345:	16	28	24	18	23	23	72	171
353:	162	44	16	17	13	22	12	22
361:	15	21	14	22	25	14	20	22

369:	19	19	19	17	32	20	16	24

Sample Title: HTC-A08-BKGD02-0612-01

Channel								
377:	19	18	21	16	20	14	17	23
385:	18	18	22	25	16	25	22	17
393:	19	18	21	27	29	15	14	23
401:	13	16	12	17	19	22	29	14
409:	17	19	22	16	23	16	20	14
417:	19	14	16	15	12	12	15	14
425:	20	19	14	16	13	11	14	14
433:	19	12	9	21	11	17	17	17
441:	24	17	17	18	9	17	12	11
449:	14	8	10	14	22	7	24	18
457:	15	10	14	16	15	21	18	29
465:	13	16	13	13	21	20	26	11
473:	12	14	15	8	14	24	15	15
481:	15	20	18	15	15	23	10	12
489:	15	10	10	14	12	13	22	11
497:	7	11	13	9	12	11	23	17
505:	14	16	18	19	21	34	52	46
513:	40	9	16	11	12	15	11	11
521:	15	10	15	9	13	12	11	9
529:	13	6	9	9	16	7	16	8
537:	12	12	8	9	15	8	12	8
545:	6	13	7	16	11	9	9	13
553:	11	8	15	15	13	9	8	18
561:	10	18	8	16	16	13	11	6
569:	15	16	13	11	9	8	12	9
577:	11	7	13	11	15	28	75	87
585:	46	8	12	15	6	9	11	9
593:	11	9	6	10	15	12	9	9
601:	6	14	13	10	13	8	11	31
609:	85	113	54	13	11	7	12	12
617:	7	9	14	15	14	8	12	14
625:	4	12	13	10	7	9	9	9
633:	10	15	5	13	3	13	6	9
641:	7	6	13	10	11	10	7	13
649:	9	11	10	9	7	5	8	11
657:	6	9	6	12	12	13	12	14
665:	9	17	10	14	8	15	11	9
673:	10	8	7	4	12	12	11	10
681:	6	8	15	15	7	11	17	11
689:	11	11	5	15	9	6	19	15
697:	8	9	9	5	11	10	13	11
705:	12	6	5	10	11	13	12	6
713:	11	13	11	9	14	6	13	11
721:	8	8	9	5	14	11	16	18
729:	12	14	14	12	5	13	9	8
737:	11	6	11	12	13	8	11	9
745:	9	7	6	7	8	9	5	12
753:	14	6	9	9	9	8	9	7
761:	9	7	12	10	6	10	11	17
769:	13	13	7	7	8	12	5	7
777:	11	14	7	6	10	10	10	9
785:	3	9	16	12	9	4	9	4
793:	12	13	26	9	13	4	7	8

801:	8	10	5	5	5	8	10	6

Sample Title: HTC-A08-BKGD02-0612-01

Channel								
809:	7	9	7	4	11	5	12	6
817:	17	6	8	4	8	3	6	7
825:	5	10	6	7	6	8	9	11
833:	10	7	4	13	4	9	4	3
841:	14	9	5	5	6	12	5	6
849:	6	10	8	6	3	10	7	4
857:	8	6	10	9	7	9	6	3
865:	9	2	6	2	5	3	6	9
873:	4	3	5	3	2	4	4	3
881:	4	6	6	8	5	6	5	7
889:	4	10	4	7	9	12	8	4
897:	6	8	13	8	5	8	8	5
905:	6	6	5	7	10	24	54	54
913:	22	9	6	6	4	5	4	11
921:	11	11	10	7	6	10	3	6
929:	6	7	6	5	7	10	13	8
937:	7	5	6	8	7	5	7	6
945:	5	9	13	1	6	14	10	10
953:	7	5	7	10	4	6	6	3
961:	6	7	8	11	12	16	5	12
969:	36	30	7	8	5	7	3	10
977:	4	7	4	5	5	4	8	4
985:	5	5	5	7	13	7	5	5
993:	10	5	7	4	3	8	7	1
1001:	8	9	6	8	8	5	9	7
1009:	4	6	2	7	5	8	8	11
1017:	8	2	6	6	10	9	4	6
1025:	5	2	9	8	4	4	9	2
1033:	5	5	5	3	5	5	3	3
1041:	6	6	6	8	1	9	6	6
1049:	6	4	5	5	8	7	2	9
1057:	4	5	8	5	11	6	3	8
1065:	10	8	6	7	10	2	4	3
1073:	5	7	4	10	4	6	8	6
1081:	9	11	6	6	4	6	5	5
1089:	12	1	10	4	9	6	4	9
1097:	6	8	4	4	6	6	5	9
1105:	3	10	5	3	7	8	7	12
1113:	8	6	8	4	7	9	10	17
1121:	27	11	10	6	4	7	4	2
1129:	7	5	9	7	11	2	4	4
1137:	13	1	7	4	4	8	7	8
1145:	7	9	8	8	3	2	4	2
1153:	7	12	11	9	8	5	6	8
1161:	9	8	5	8	10	5	9	5
1169:	10	7	6	7	10	7	7	11
1177:	6	7	10	6	6	7	8	9
1185:	6	8	6	12	7	9	18	6
1193:	11	8	7	6	13	5	5	2
1201:	8	5	4	12	9	3	7	5
1209:	9	4	6	10	11	5	3	7
1217:	11	9	9	7	13	7	8	11
1225:	10	8	13	6	12	5	3	7

1233:	8	4	4	10	11	17	21	9

Sample Title: HTC-A08-BKGD02-0612-01

Channel								
1241:	10	6	8	7	6	8	6	4
1249:	5	11	5	8	6	2	14	4
1257:	3	6	3	8	8	3	9	3
1265:	10	6	10	2	5	4	5	6
1273:	3	2	5	6	3	3	2	5
1281:	5	6	8	3	3	6	9	8
1289:	6	7	1	4	7	6	2	8
1297:	5	2	9	9	3	3	5	9
1305:	3	6	6	5	7	4	5	5
1313:	4	7	4	4	3	7	5	2
1321:	1	5	4	5	5	4	4	3
1329:	6	4	5	3	3	2	3	3
1337:	1	5	4	3	4	0	3	3
1345:	0	6	6	1	2	1	3	1
1353:	1	2	2	5	2	5	2	2
1361:	0	2	5	4	6	0	2	4
1369:	0	2	0	1	4	6	7	6
1377:	11	7	4	2	8	2	3	1
1385:	3	5	2	5	4	1	3	2
1393:	2	0	3	2	4	4	2	1
1401:	1	1	2	4	1	6	2	6
1409:	5	3	1	0	4	1	3	1
1417:	1	6	0	2	1	1	3	0
1425:	4	5	1	2	1	2	5	2
1433:	1	4	1	5	1	4	3	2
1441:	0	1	3	5	2	2	2	0
1449:	0	2	3	4	4	4	4	3
1457:	2	5	35	152	185	119	41	5
1465:	0	3	3	3	3	1	1	1
1473:	1	6	2	3	1	2	0	1
1481:	1	2	1	5	0	1	1	2
1489:	2	1	1	4	3	0	1	4
1497:	5	2	2	2	1	3	3	1
1505:	0	3	2	3	3	2	2	1
1513:	1	1	0	0	2	2	2	2
1521:	1	2	4	0	1	0	1	0
1529:	2	1	0	0	2	0	1	1
1537:	2	1	1	2	2	1	3	1
1545:	3	0	1	0	1	5	0	3
1553:	3	2	0	2	2	1	0	2
1561:	0	2	2	3	1	1	0	1
1569:	1	1	0	3	0	1	0	0
1577:	2	0	4	2	0	2	2	1
1585:	0	1	1	5	2	3	5	8
1593:	1	4	3	0	1	2	1	1
1601:	1	1	1	1	3	1	0	0
1609:	0	0	0	1	3	0	4	4
1617:	0	3	4	2	3	1	2	4
1625:	2	3	0	0	0	2	2	1
1633:	0	1	1	1	2	1	0	1
1641:	3	0	2	1	0	1	1	1
1649:	2	2	1	2	2	2	0	3
1657:	0	0	4	2	3	1	2	2

1665:	1	1	0	1	1	1	0	1

Sample Title: HTC-A08-BKGD02-0612-01

Channel								
1673:	1	0	5	1	0	0	3	1
1681:	0	1	0	2	0	0	1	0
1689:	3	1	1	0	1	1	5	1
1697:	4	0	0	2	2	1	0	0
1705:	1	1	0	0	0	1	0	0
1713:	0	0	1	3	0	1	1	0
1721:	1	0	2	1	0	0	2	7
1729:	8	2	2	2	0	1	4	3
1737:	2	1	1	1	0	0	0	0
1745:	0	2	0	1	1	2	1	2
1753:	1	1	1	0	0	1	1	0
1761:	2	1	8	12	17	5	2	1
1769:	1	3	1	0	1	2	0	2
1777:	2	0	2	3	0	1	1	0
1785:	2	1	1	2	1	0	0	1
1793:	0	0	3	2	0	1	1	1
1801:	0	0	0	0	1	1	1	1
1809:	1	1	0	1	0	0	0	1
1817:	0	2	3	2	1	2	1	1
1825:	2	3	0	1	1	1	0	2
1833:	0	2	1	0	3	1	0	1
1841:	0	1	1	1	1	0	5	0
1849:	2	0	4	0	0	0	1	3
1857:	0	0	1	0	1	0	0	1
1865:	1	0	3	0	2	0	0	0
1873:	2	0	1	2	0	1	0	0
1881:	1	2	0	2	0	0	0	2
1889:	2	0	1	0	0	1	2	2
1897:	0	1	2	1	0	0	0	1
1905:	1	2	0	0	0	0	1	1
1913:	1	0	1	1	3	0	0	0
1921:	0	2	2	0	1	0	2	0
1929:	0	2	1	0	1	1	1	0
1937:	0	0	1	0	2	1	2	2
1945:	0	1	1	2	0	2	1	2
1953:	0	1	1	0	0	1	1	2
1961:	3	0	2	1	2	0	1	0
1969:	0	1	1	0	1	1	0	1
1977:	3	0	2	2	0	0	0	0
1985:	1	0	3	0	1	0	1	1
1993:	0	2	1	2	1	1	1	0
2001:	0	0	0	0	0	1	0	1
2009:	1	0	0	0	0	2	0	1
2017:	1	2	1	0	1	2	0	1
2025:	0	0	5	1	1	1	0	0
2033:	1	3	1	0	0	0	1	3
2041:	0	0	2	1	1	0	2	0
2049:	1	0	0	1	0	0	0	1
2057:	1	2	2	0	0	1	2	0
2065:	0	1	1	0	1	0	1	3
2073:	2	0	0	0	1	0	0	2
2081:	1	2	0	0	0	0	0	1
2089:	0	1	0	2	1	0	1	0

2097:	0	2	1	2	3	3	3	2

Sample Title: HTC-A08-BKGD02-0612-01

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

2529:	0	0	0	0	0	0	0	0

Sample Title: HTC-A08-BKGD02-0612-01

Channel								
2537:	0	0	0	0	0	0	0	0
2545:	1	0	1	0	1	0	0	1
2553:	0	1	1	0	0	0	0	0
2561:	0	1	0	0	0	0	0	0
2569:	0	0	1	0	0	0	0	0
2577:	0	0	1	0	0	0	0	1
2585:	1	0	0	1	0	0	0	1
2593:	0	0	1	2	1	1	1	1
2601:	0	1	2	0	0	1	0	1
2609:	0	2	2	2	14	22	9	6
2617:	5	2	0	0	0	1	0	0
2625:	0	0	1	0	0	0	0	0
2633:	0	0	1	0	1	0	0	0
2641:	1	0	0	0	0	1	0	0
2649:	0	0	0	0	0	0	0	0
2657:	0	0	0	0	0	1	0	0
2665:	0	1	0	1	0	0	0	1
2673:	0	0	0	0	1	0	0	1
2681:	0	0	0	0	0	0	1	0
2689:	0	0	0	0	0	0	0	0
2697:	0	0	0	0	2	1	1	0
2705:	0	0	1	0	0	0	0	0
2713:	0	0	0	0	0	0	0	0
2721:	0	0	0	0	0	0	1	0
2729:	0	1	0	0	0	0	0	0
2737:	0	0	0	0	0	0	1	0
2745:	0	2	0	0	1	0	1	0
2753:	0	0	1	0	1	0	0	0
2761:	0	0	1	0	0	0	0	0
2769:	0	0	0	0	0	0	1	0
2777:	3	1	0	0	0	0	0	0
2785:	0	0	0	0	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	2	0	0	0	1
2817:	0	1	0	0	0	0	0	0
2825:	1	0	0	0	0	0	2	0
2833:	0	0	0	1	1	0	1	0
2841:	0	1	0	1	0	0	0	0
2849:	0	1	0	0	0	0	0	2
2857:	0	1	0	1	0	0	0	0
2865:	0	0	0	0	0	0	0	0
2873:	0	0	0	1	0	0	1	2
2881:	0	0	0	0	0	0	0	0
2889:	0	0	0	1	0	0	0	0
2897:	0	0	0	0	0	0	0	0
2905:	0	0	0	0	0	1	0	0
2913:	0	0	0	0	0	0	0	0
2921:	0	0	0	0	1	0	1	0
2929:	0	0	0	0	0	1	0	1
2937:	0	0	0	0	0	0	0	1
2945:	0	0	0	0	0	0	0	0
2953:	0	0	0	0	0	0	0	1

2961:	1	0	0	0	0	0	0	0

Sample Title: HTC-A08-BKGD02-0612-01

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

3393:	0	0	0	0	0	1	0	0

Sample Title: HTC-A08-BKGD02-0612-01

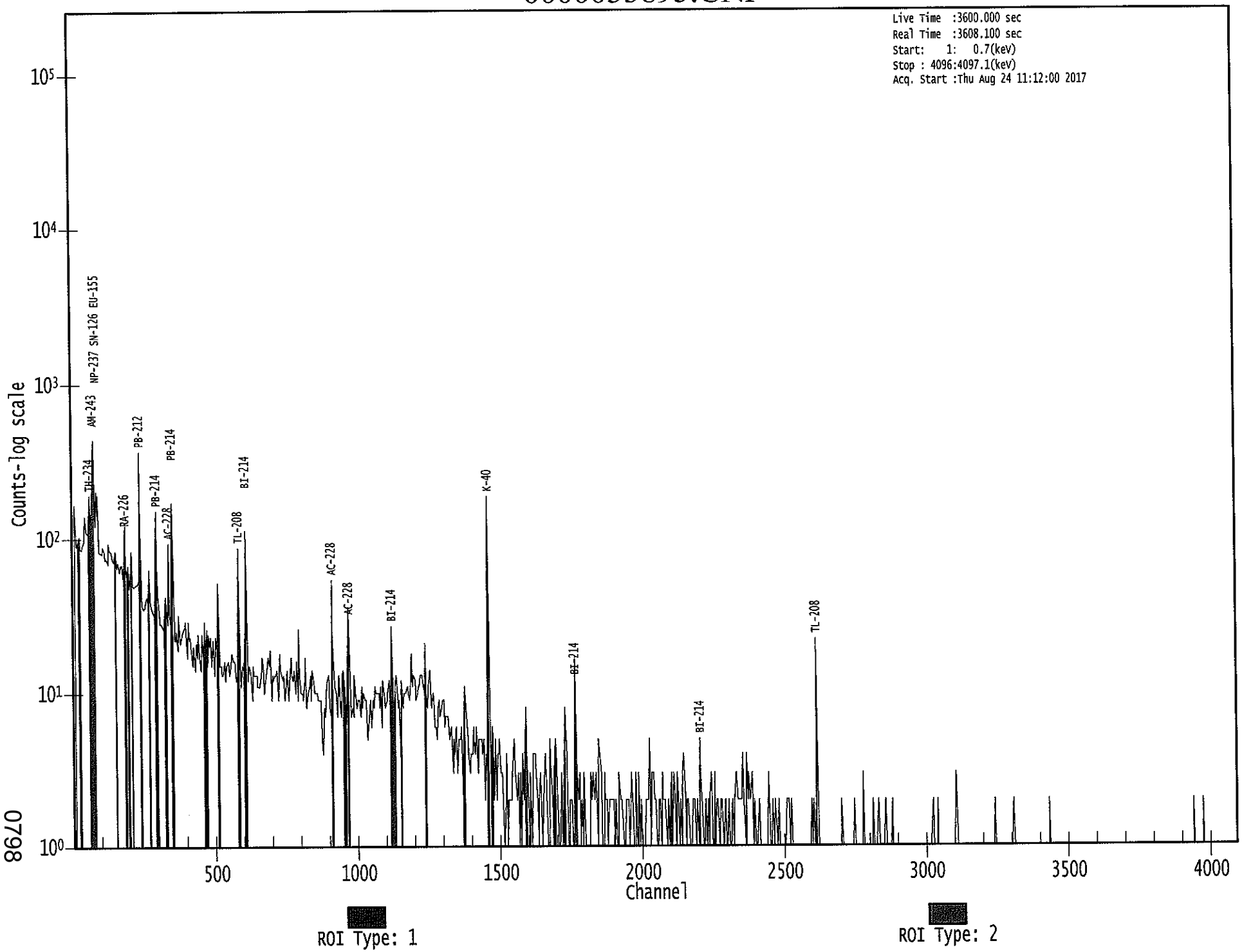
Channel								
3401:	1	0	0	0	0	0	0	0
3409:	0	0	0	1	0	0	0	0
3417:	0	1	0	0	0	0	0	0
3425:	1	0	0	0	0	0	0	0
3433:	2	1	0	0	0	0	0	0
3441:	0	0	0	0	1	0	0	0
3449:	0	0	0	0	0	0	0	0
3457:	0	0	0	1	0	0	0	0
3465:	0	0	1	0	1	1	0	0
3473:	0	0	0	0	0	0	0	0
3481:	0	0	0	0	0	0	0	0
3489:	1	0	0	0	0	0	0	0
3497:	0	0	0	0	1	0	0	0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

3825:	0	0	0	0	0	0	0	0

Sample Title: HTC-A08-BKGD02-0612-01

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

0000055895.CNF



0798

Apex-Gamma

8/24

Analysis Report for 1707091-15

HTC-A08-BKGD02-1218-01

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 1707091-15
Sample Description	: HTC-A08-BKGD02-1218-01
Sample Type	: SOIL
Sample Size	: 5.863E+02 grams
Facility	: Countroom
Sample Taken On	: 5/15/2017 12:58:43PM
Acquisition Started	: 8/24/2017 12:12:29PM
Procedure	: GAS-1602 pCi
Operator	: Administrator
Detector Name	: GE3
Geometry	: GAS-1602
Live Time	: 3600.0 seconds
Real Time	: 3608.3 seconds
Dead Time	: 0.23 %
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	: 1/14/2017
Efficiency Calibration Used Done On	: 1/14/2017
Efficiency Calibration Description	:
Sample Number	: 55902

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

Analysis Report for 1707091-15

HTC-A08-BKGD02-1218-01

PEAK LOCATE REPORT

Peak Locate Performed on : 8/24/2017 1:12:39PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096
Peak Search Sensitivity : 2.50

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
1	47.28	47.59	0.0000	0.00
2	76.41	76.71	0.0000	0.00
3	128.43	128.71	0.0000	0.00
4	186.23	186.49	0.0000	0.00
5	209.80	210.05	0.0000	0.00
6	239.56	239.81	0.0000	0.00
7	270.81	271.05	0.0000	0.00
8	295.46	295.69	0.0000	0.00
9	300.80	301.02	0.0000	0.00
10	339.23	339.45	0.0000	0.00
11	348.27	348.48	0.0000	0.00
12	352.31	352.52	0.0000	0.00
13	463.17	463.34	0.0000	0.00
14	511.13	511.29	0.0000	0.00
15	538.24	538.39	0.0000	0.00
16	549.59	549.73	0.0000	0.00
17	583.35	583.48	0.0000	0.00
18	609.70	609.82	0.0000	0.00
19	637.87	637.98	0.0000	0.00
20	686.90	687.00	0.0000	0.00
21	728.12	728.21	0.0000	0.00
22	756.04	756.11	0.0000	0.00
23	768.44	768.51	0.0000	0.00
24	795.50	795.56	0.0000	0.00
25	811.23	811.28	0.0000	0.00
26	861.87	861.90	0.0000	0.00
27	887.66	887.69	0.0000	0.00
28	911.94	911.96	0.0000	0.00
29	1075.36	1075.33	0.0000	0.00
30	1121.06	1121.01	0.0000	0.00
31	1240.14	1240.05	0.0000	0.00
32	1327.75	1327.63	0.0000	0.00
33	1339.98	1339.85	0.0000	0.00
34	1442.81	1442.65	0.0000	0.00
35	1460.99	1460.83	0.0000	0.00
36	1581.26	1581.05	0.0000	0.00
37	1588.71	1588.50	0.0000	0.00
38	1592.71	1592.50	0.0000	0.00
39	1662.88	1662.64	0.0000	0.00
40	1669.57	1669.33	0.0000	0.00
41	1728.98	1728.72	0.0000	0.00
42	1765.32	1765.05	0.0000	0.00

Analysis Report for 1707091-15

HTC-A08-BKGD02-1218-01

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
43	1984.78	1984.44	0.0000	0.00
44	2204.04	2203.62	0.0000	0.00
45	2302.07	2301.62	0.0000	0.00
46	2327.98	2327.52	0.0000	0.00
47	2362.78	2362.31	0.0000	0.00
48	2615.03	2614.48	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1707091-15

HTC-A08-BKGD02-1218-01

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 8/24/2017 1:12:39PM

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

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
	1	47.28	44 -	51	47.59	1.45E+02	99.38	1.54E+03	1.85
M	2	76.41	71 -	97	76.71	1.43E+03	162.97	2.79E+03	3.91
	3	128.43	123 -	133	128.71	1.73E+02	111.37	1.56E+03	2.81
	4	186.23	182 -	190	186.49	1.64E+02	88.98	1.12E+03	2.44
	5	209.80	206 -	214	210.05	1.10E+02	79.94	9.10E+02	2.82
	6	239.56	235 -	245	239.81	1.02E+03	107.55	9.85E+02	2.06
	7	270.81	268 -	273	271.05	6.45E+01	47.97	4.05E+02	2.70
M	8	295.46	292 -	304	295.69	2.71E+02	52.83	3.49E+02	1.99
m	9	300.80	292 -	304	301.02	5.09E+01	43.76	3.31E+02	2.12
	10	339.23	334 -	344	339.45	1.62E+02	64.90	4.66E+02	2.90
M	11	348.27	346 -	359	348.48	5.19E+01	32.99	1.89E+02	2.38
m	12	352.31	346 -	359	352.52	4.01E+02	53.87	2.44E+02	2.11
	13	463.17	459 -	468	463.34	6.13E+01	48.37	2.97E+02	1.97
	14	511.13	506 -	517	511.29	1.73E+02	54.37	2.85E+02	2.58
	15	538.24	536 -	540	538.39	1.76E+01	22.58	9.48E+01	1.88
	16	549.59	546 -	552	549.73	3.61E+01	30.17	1.38E+02	1.95
	17	583.35	577 -	588	583.48	2.02E+02	57.06	3.05E+02	2.19
	18	609.70	604 -	615	609.82	2.87E+02	56.25	2.51E+02	2.19
	19	637.87	635 -	641	637.98	2.60E+01	29.70	1.38E+02	1.28
	20	686.90	683 -	691	687.00	3.75E+01	32.05	1.35E+02	5.51
	21	728.12	724 -	734	728.21	5.24E+01	45.40	2.45E+02	1.86
	22	756.04	751 -	759	756.11	3.95E+01	28.24	9.70E+01	4.73
	23	768.44	765 -	771	768.51	2.89E+01	28.73	1.28E+02	3.17
	24	795.50	790 -	799	795.56	2.90E+01	36.08	1.68E+02	2.40
	25	811.23	809 -	814	811.28	2.50E+01	16.73	3.60E+01	3.03
	26	861.87	856 -	867	861.90	3.73E+01	38.63	1.67E+02	1.86
	27	887.66	884 -	891	887.69	2.55E+01	24.08	7.90E+01	3.16
	28	911.94	906 -	916	911.96	1.12E+02	45.76	2.17E+02	1.84
	29	1075.36	1073 -	1078	1075.33	2.48E+01	19.77	6.03E+01	3.64
	30	1121.06	1117 -	1127	1121.01	5.32E+01	43.89	2.22E+02	2.37
	31	1240.14	1234 -	1247	1240.05	7.08E+01	41.51	1.56E+02	7.89
	32	1327.75	1325 -	1331	1327.63	1.30E+01	16.82	4.20E+01	1.55
	33	1339.98	1337 -	1343	1339.85	1.29E+01	12.22	1.82E+01	1.41
	34	1442.81	1439 -	1446	1442.65	1.32E+01	11.14	1.15E+01	3.84
	35	1460.99	1455 -	1465	1460.83	7.21E+02	56.32	3.88E+01	2.65
	36	1581.26	1576 -	1584	1581.05	1.07E+01	12.53	1.67E+01	1.08
M	37	1588.71	1585 -	1595	1588.50	3.09E+01	13.60	1.58E+01	2.89
m	38	1592.71	1585 -	1595	1592.50	1.50E+01	14.97	1.18E+01	2.74
	39	1662.88	1658 -	1666	1662.64	6.82E+00	9.19	8.36E+00	4.52
	40	1669.57	1667 -	1671	1669.33	6.00E+00	4.90	0.00E+00	1.92

Analysis Report for 1707091-15

HTC-A08-BKGD02-1218-01

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
41	1728.98	1724 -	1732	1728.72	9.47E+00	11.17	1.31E+01	1.78
42	1765.32	1758 -	1772	1765.05	6.06E+01	17.67	6.86E+00	3.38
43	1984.78	1980 -	1988	1984.44	8.77E+00	8.02	4.45E+00	6.51
44	2204.04	2199 -	2208	2203.62	1.79E+01	11.75	8.27E+00	3.44
45	2302.07	2298 -	2304	2301.62	8.25E+00	7.23	3.50E+00	1.41
46	2327.98	2324 -	2330	2327.52	6.38E+00	6.65	3.25E+00	3.02
47	2362.78	2358 -	2365	2362.31	1.10E+01	8.25	4.08E+00	2.73
48	2615.03	2610 -	2618	2614.48	6.90E+01	16.61	0.00E+00	2.61

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 : 8/24/2017 1:12:39PM

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

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	1	47.28	44 -	51	1.45E+02	99.38	1.54E+03	7.92E+01
M	2	76.41	71 -	97	1.43E+03	162.97	2.79E+03	8.68E+01
	3	128.43	123 -	133	1.73E+02	111.37	1.56E+03	8.90E+01
	4	186.23	182 -	190	1.64E+02	88.98	1.12E+03	7.00E+01
	5	209.80	206 -	214	1.10E+02	79.94	9.10E+02	6.34E+01
	6	239.56	235 -	245	1.02E+03	107.55	9.85E+02	7.12E+01
	7	270.81	268 -	273	6.45E+01	47.97	4.05E+02	3.72E+01
M	8	295.46	292 -	304	2.71E+02	52.83	3.49E+02	3.07E+01
m	9	300.80	292 -	304	5.09E+01	43.76	3.31E+02	2.99E+01
	10	339.23	334 -	344	1.62E+02	64.90	4.66E+02	4.91E+01
M	11	348.27	346 -	359	5.19E+01	32.99	1.89E+02	2.26E+01
m	12	352.31	346 -	359	4.01E+02	53.87	2.44E+02	2.57E+01
	13	463.17	459 -	468	6.13E+01	48.37	2.97E+02	3.76E+01
	14	511.13	506 -	517	1.73E+02	54.37	2.85E+02	3.91E+01
	15	538.24	536 -	540	1.76E+01	22.58	9.48E+01	1.72E+01
	16	549.59	546 -	552	3.61E+01	30.17	1.38E+02	2.27E+01
	17	583.35	577 -	588	2.02E+02	57.06	3.05E+02	4.07E+01
	18	609.70	604 -	615	2.87E+02	56.25	2.51E+02	3.69E+01
	19	637.87	635 -	641	2.60E+01	29.70	1.38E+02	2.29E+01

Analysis Report for 1707091-15

HTC-A08-BKGD02-1218-01

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	20	686.90	683 -	691	3.75E+01	32.05	1.35E+02	2.44E+01
	21	728.12	724 -	734	5.24E+01	45.40	2.45E+02	2.08E+01
	22	756.04	751 -	759	3.95E+01	28.24	9.70E+01	2.08E+01
	23	768.44	765 -	771	2.89E+01	28.73	1.28E+02	2.19E+01
	24	795.50	790 -	799	2.90E+01	36.08	1.68E+02	2.83E+01
	25	811.23	809 -	814	2.50E+01	16.73	3.60E+01	1.10E+01
	26	861.87	856 -	867	3.73E+01	38.63	1.67E+02	3.01E+01
	27	887.66	884 -	891	2.55E+01	24.08	7.90E+01	1.80E+01
	28	911.94	906 -	916	1.12E+02	45.76	2.17E+02	3.33E+01
	29	1075.36	1073 -	1078	2.48E+01	19.77	6.03E+01	1.40E+01
	30	1121.06	1117 -	1127	5.32E+01	43.89	2.22E+02	3.40E+01
	31	1240.14	1234 -	1247	7.08E+01	41.51	1.56E+02	3.12E+01
	32	1327.75	1325 -	1331	1.30E+01	16.82	4.20E+01	1.25E+01
	33	1339.98	1337 -	1343	1.29E+01	12.22	1.82E+01	8.12E+00
	34	1442.81	1439 -	1446	1.32E+01	11.14	1.15E+01	6.93E+00
	35	1460.99	1455 -	1465	7.21E+02	56.32	3.88E+01	1.40E+01
	36	1581.26	1576 -	1584	1.07E+01	12.53	1.67E+01	8.79E+00
M	37	1588.71	1585 -	1595	3.09E+01	13.60	1.58E+01	6.53E+00
m	38	1592.71	1585 -	1595	1.50E+01	14.97	1.18E+01	5.65E+00
	39	1662.88	1658 -	1666	6.82E+00	9.19	8.36E+00	6.22E+00
	40	1669.57	1667 -	1671	6.00E+00	4.90	0.00E+00	0.00E+00
	41	1728.98	1724 -	1732	9.47E+00	11.17	1.31E+01	7.66E+00
	42	1765.32	1758 -	1772	6.06E+01	17.67	6.86E+00	6.88E+00
	43	1984.78	1980 -	1988	8.77E+00	8.02	4.45E+00	4.44E+00
	44	2204.04	2199 -	2208	1.79E+01	11.75	8.27E+00	6.71E+00
	45	2302.07	2298 -	2304	8.25E+00	7.23	3.50E+00	3.61E+00
	46	2327.98	2324 -	2330	6.38E+00	6.65	3.25E+00	3.56E+00
	47	2362.78	2358 -	2365	1.10E+01	8.25	4.08E+00	4.04E+00
	48	2615.03	2610 -	2618	6.90E+01	16.61	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 : 8/24/2017 1:12:39PM

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

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

Analysis Report for 1707091-15

HTC-A08-BKGD02-1218-01

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	1	47.28	44 -	51	47.59	1.45E+02	99.38	1.54E+03	PB-210
M	2	76.41	71 -	97	76.71	1.43E+03	162.97	2.79E+03	.....
	3	128.43	123 -	133	128.71	1.73E+02	111.37	1.56E+03	.....
	4	186.23	182 -	190	186.49	1.64E+02	88.98	1.12E+03	RA-226
	5	209.80	206 -	214	210.05	1.10E+02	79.94	9.10E+02	CM-243
									GA-67
	6	239.56	235 -	245	239.81	1.02E+03	107.55	9.85E+02	PB-212
	7	270.81	268 -	273	271.05	6.45E+01	47.97	4.05E+02	.....
M	8	295.46	292 -	304	295.69	2.71E+02	52.83	3.49E+02	PB-214
m	9	300.80	292 -	304	301.02	5.09E+01	43.76	3.31E+02	GA-67
									PB-212
									BI-210M
	10	339.23	334 -	344	339.45	1.62E+02	64.90	4.66E+02	AC-228
M	11	348.27	346 -	359	348.48	5.19E+01	32.99	1.89E+02	.....
m	12	352.31	346 -	359	352.52	4.01E+02	53.87	2.44E+02	PB-214
	13	463.17	459 -	468	463.34	6.13E+01	48.37	2.97E+02	SB-125
	14	511.13	506 -	517	511.29	1.73E+02	54.37	2.85E+02	.....
	15	538.24	536 -	540	538.39	1.76E+01	22.58	9.48E+01	BA-140
	16	549.59	546 -	552	549.73	3.61E+01	30.17	1.38E+02	.....
	17	583.35	577 -	588	583.48	2.02E+02	57.06	3.05E+02	TL-208
	18	609.70	604 -	615	609.82	2.87E+02	56.25	2.51E+02	BI-214
	19	637.87	635 -	641	637.98	2.60E+01	29.70	1.38E+02	I-131
	20	686.90	683 -	691	687.00	3.75E+01	32.05	1.35E+02	.....
	21	728.12	724 -	734	728.21	5.24E+01	45.40	2.45E+02	BI-212
	22	756.04	751 -	759	756.11	3.95E+01	28.24	9.70E+01	ZR-95
	23	768.44	765 -	771	768.51	2.89E+01	28.73	1.28E+02	.....
	24	795.50	790 -	799	795.56	2.90E+01	36.08	1.68E+02	CS-134
	25	811.23	809 -	814	811.28	2.50E+01	16.73	3.60E+01	CO-58
									EU-156
	26	861.87	856 -	867	861.90	3.73E+01	38.63	1.67E+02	.....
	27	887.66	884 -	891	887.69	2.55E+01	24.08	7.90E+01	.....
	28	911.94	906 -	916	911.96	1.12E+02	45.76	2.17E+02	TL-204
									AC-228
	29	1075.36	1073 -	1078	1075.33	2.48E+01	19.77	6.03E+01	.....
	30	1121.06	1117 -	1127	1121.01	5.32E+01	43.89	2.22E+02	TA-182
									SC-46
									BI-214
	31	1240.14	1234 -	1247	1240.05	7.08E+01	41.51	1.56E+02	.....
	32	1327.75	1325 -	1331	1327.63	1.30E+01	16.82	4.20E+01	.....
	33	1339.98	1337 -	1343	1339.85	1.29E+01	12.22	1.82E+01	.....
	34	1442.81	1439 -	1446	1442.65	1.32E+01	11.14	1.15E+01	.....
	35	1460.99	1455 -	1465	1460.83	7.21E+02	56.32	3.88E+01	K-40
	36	1581.26	1576 -	1584	1581.05	1.07E+01	12.53	1.67E+01	.....
M	37	1588.71	1585 -	1595	1588.50	3.09E+01	13.60	1.58E+01	.....
m	38	1592.71	1585 -	1595	1592.50	1.50E+01	14.97	1.18E+01	.....
	39	1662.88	1658 -	1666	1662.64	6.82E+00	9.19	8.36E+00	.....
	40	1669.57	1667 -	1671	1669.33	6.00E+00	4.90	0.00E+00	.....
	41	1728.98	1724 -	1732	1728.72	9.47E+00	11.17	1.31E+01	.....
	42	1765.32	1758 -	1772	1765.05	6.06E+01	17.67	6.86E+00	BI-214
	43	1984.78	1980 -	1988	1984.44	8.77E+00	8.02	4.45E+00	.....
	44	2204.04	2199 -	2208	2203.62	1.79E+01	11.75	8.27E+00	BI-214

Analysis Report for 1707091-15

HTC-A08-BKGD02-1218-01

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
45	2302.07	2298 -	2304	2301.62	8.25E+00	7.23	3.50E+00	.....
46	2327.98	2324 -	2330	2327.52	6.38E+00	6.65	3.25E+00	.....
47	2362.78	2358 -	2365	2362.31	1.10E+01	8.25	4.08E+00	.....
48	2615.03	2610 -	2618	2614.48	6.90E+01	16.61	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 : 8/24/2017 1:12:39PM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	47.28	1.45E+02	99.38	1.77E-02	1.73E-03
M	2	76.41	1.43E+03	162.97	2.67E-02	2.04E-03
	3	128.43	1.73E+02	111.37	2.46E-02	2.05E-03
	4	186.23	1.64E+02	88.98	1.96E-02	1.55E-03
	5	209.80	1.10E+02	79.94	1.79E-02	1.45E-03
	6	239.56	1.02E+03	107.55	1.61E-02	1.34E-03
	7	270.81	6.45E+01	47.97	1.45E-02	1.21E-03
M	8	295.46	2.71E+02	52.83	1.35E-02	1.15E-03
m	9	300.80	5.09E+01	43.76	1.33E-02	1.14E-03
	10	339.23	1.62E+02	64.90	1.19E-02	1.06E-03
M	11	348.27	5.19E+01	32.99	1.16E-02	1.04E-03
m	12	352.31	4.01E+02	53.87	1.15E-02	1.03E-03
	13	463.17	6.13E+01	48.37	9.02E-03	8.58E-04
	14	511.13	1.73E+02	54.37	8.25E-03	7.94E-04
	15	538.24	1.76E+01	22.58	7.88E-03	7.58E-04
	16	549.59	3.61E+01	30.17	7.73E-03	7.43E-04
	17	583.35	2.02E+02	57.06	7.32E-03	6.98E-04
	18	609.70	2.87E+02	56.25	7.04E-03	6.63E-04
	19	637.87	2.60E+01	29.70	6.76E-03	6.26E-04
	20	686.90	3.75E+01	32.05	6.32E-03	5.72E-04
	21	728.12	5.24E+01	45.40	6.00E-03	5.36E-04
	22	756.04	3.95E+01	28.24	5.80E-03	5.11E-04
	23	768.44	2.89E+01	28.73	5.72E-03	5.00E-04
	24	795.50	2.90E+01	36.08	5.55E-03	4.76E-04
	25	811.23	2.50E+01	16.73	5.45E-03	4.63E-04
	26	861.87	3.73E+01	38.63	5.17E-03	4.18E-04

Analysis Report for 1707091-15

HTC-A08-BKGD02-1218-01

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	27	887.66	2.55E+01	24.08	5.04E-03	3.95E-04
	28	911.94	1.12E+02	45.76	4.92E-03	3.84E-04
	29	1075.36	2.48E+01	19.77	4.26E-03	3.57E-04
	30	1121.06	5.32E+01	43.89	4.12E-03	3.49E-04
	31	1240.14	7.08E+01	41.51	3.78E-03	3.22E-04
	32	1327.75	1.30E+01	16.82	3.57E-03	2.97E-04
	33	1339.98	1.29E+01	12.22	3.55E-03	2.94E-04
	34	1442.81	1.32E+01	11.14	3.34E-03	2.78E-04
	35	1460.99	7.21E+02	56.32	3.31E-03	2.75E-04
	36	1581.26	1.07E+01	12.53	3.11E-03	2.56E-04
M	37	1588.71	3.09E+01	13.60	3.10E-03	2.55E-04
m	38	1592.71	1.50E+01	14.97	3.09E-03	2.54E-04
	39	1662.88	6.82E+00	9.19	2.99E-03	2.43E-04
	40	1669.57	6.00E+00	4.90	2.98E-03	2.42E-04
	41	1728.98	9.47E+00	11.17	2.91E-03	2.32E-04
	42	1765.32	6.06E+01	17.67	2.86E-03	2.26E-04
	43	1984.78	8.77E+00	8.02	2.64E-03	2.15E-04
	44	2204.04	1.79E+01	11.75	2.46E-03	2.15E-04
	45	2302.07	8.25E+00	7.23	2.40E-03	2.15E-04
	46	2327.98	6.38E+00	6.65	2.38E-03	2.15E-04
	47	2362.78	1.10E+01	8.25	2.36E-03	2.15E-04
	48	2615.03	6.90E+01	16.61	2.24E-03	2.15E-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 : 8/24/2017 1:12:39PM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000055575.CNF

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	1	47.28	1.45E+02	99.38	4.47E+01	1.09E+01	1.01E+02	1.00E+02
M	2	76.41	1.43E+03	162.97			1.43E+03	1.63E+02
	3	128.43	1.73E+02	111.37			1.73E+02	1.11E+02
	4	186.23	1.64E+02	88.98	3.06E+01	5.82E+00	1.34E+02	8.92E+01
	5	209.80	1.10E+02	79.94			1.10E+02	7.99E+01
	6	239.56	1.02E+03	107.55	1.40E+01	2.71E+00	1.00E+03	1.08E+02
	7	270.81	6.45E+01	47.97			6.45E+01	4.80E+01
M	8	295.46	2.71E+02	52.83			2.71E+02	5.28E+01

Analysis Report for 1707091-15

HTC-A08-BKGD02-1218-01

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
m	9	300.80	5.09E+01	43.76			5.09E+01	4.38E+01
	10	339.23	1.62E+02	64.90			1.62E+02	6.49E+01
M	11	348.27	5.19E+01	32.99			5.19E+01	3.30E+01
m	12	352.31	4.01E+02	53.87	6.53E+00	4.43E+00	3.94E+02	5.41E+01
	13	463.17	6.13E+01	48.37			6.13E+01	4.84E+01
	14	511.13	1.73E+02	54.37	5.21E+01	4.74E+00	1.21E+02	5.46E+01
	15	538.24	1.76E+01	22.58			1.76E+01	2.26E+01
	16	549.59	3.61E+01	30.17			3.61E+01	3.02E+01
	17	583.35	2.02E+02	57.06			2.02E+02	5.71E+01
	18	609.70	2.87E+02	56.25	3.25E+00	2.97E+00	2.84E+02	5.63E+01
	19	637.87	2.60E+01	29.70			2.60E+01	2.97E+01
	20	686.90	3.75E+01	32.05			3.75E+01	3.21E+01
	21	728.12	5.24E+01	45.40			5.24E+01	4.54E+01
	22	756.04	3.95E+01	28.24			3.95E+01	2.82E+01
	23	768.44	2.89E+01	28.73			2.89E+01	2.87E+01
	24	795.50	2.90E+01	36.08	0.00E+00	0.00E+00	2.90E+01	3.61E+01
	25	811.23	2.50E+01	16.73			2.50E+01	1.67E+01
	26	861.87	3.73E+01	38.63			3.73E+01	3.86E+01
	27	887.66	2.55E+01	24.08			2.55E+01	2.41E+01
	28	911.94	1.12E+02	45.76	2.85E+00	2.76E+00	1.09E+02	4.58E+01
	29	1075.36	2.48E+01	19.77			2.48E+01	1.98E+01
	30	1121.06	5.32E+01	43.89			5.32E+01	4.39E+01
	31	1240.14	7.08E+01	41.51			7.08E+01	4.15E+01
	32	1327.75	1.30E+01	16.82			1.30E+01	1.68E+01
	33	1339.98	1.29E+01	12.22			1.29E+01	1.22E+01
	34	1442.81	1.32E+01	11.14			1.32E+01	1.11E+01
	35	1460.99	7.21E+02	56.32	1.00E+00	1.77E+00	7.20E+02	5.63E+01
	36	1581.26	1.07E+01	12.53			1.07E+01	1.25E+01
M	37	1588.71	3.09E+01	13.60			3.09E+01	1.36E+01
m	38	1592.71	1.50E+01	14.97			1.50E+01	1.50E+01
	39	1662.88	6.82E+00	9.19			6.82E+00	9.19E+00
	40	1669.57	6.00E+00	4.90			6.00E+00	4.90E+00
	41	1728.98	9.47E+00	11.17			9.47E+00	1.12E+01
	42	1765.32	6.06E+01	17.67			6.06E+01	1.77E+01
	43	1984.78	8.77E+00	8.02			8.77E+00	8.02E+00
	44	2204.04	1.79E+01	11.75			1.79E+01	1.17E+01
	45	2302.07	8.25E+00	7.23			8.25E+00	7.23E+00
	46	2327.98	6.38E+00	6.65			6.38E+00	6.65E+00
	47	2362.78	1.10E+01	8.25			1.10E+01	8.25E+00
	48	2615.03	6.90E+01	16.61	1.86E+00	1.12E+00	6.71E+01	1.67E+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 1707091-15

HTC-A08-BKGD02-1218-01

AREA CORRECTION REPORT
REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 8/24/2017 1:12:39PM

Ref. Peak Energy : 0.00 Reference Date :
Peak Ratio : 0.00 Uncertainty : 0.00
Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000055575.CNF

Corrected Area is: Original * Peak Ratio - Background

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	1	47.28	1.45E+02	99.38	4.47E+01	1.09E+01	1.01E+02	1.00E+02
M	2	76.41	1.43E+03	162.97			1.43E+03	1.63E+02
	3	128.43	1.73E+02	111.37			1.73E+02	1.11E+02
	4	186.23	1.64E+02	88.98	3.06E+01	5.82E+00	1.34E+02	8.92E+01
	5	209.80	1.10E+02	79.94			1.10E+02	7.99E+01
	6	239.56	1.02E+03	107.55	1.40E+01	2.71E+00	1.00E+03	1.08E+02
	7	270.81	6.45E+01	47.97			6.45E+01	4.80E+01
M	8	295.46	2.71E+02	52.83			2.71E+02	5.28E+01
m	9	300.80	5.09E+01	43.76			5.09E+01	4.38E+01
	10	339.23	1.62E+02	64.90			1.62E+02	6.49E+01
M	11	348.27	5.19E+01	32.99			5.19E+01	3.30E+01
m	12	352.31	4.01E+02	53.87	6.53E+00	4.43E+00	3.94E+02	5.41E+01
	13	463.17	6.13E+01	48.37			6.13E+01	4.84E+01
	14	511.13	1.73E+02	54.37	5.21E+01	4.74E+00	1.21E+02	5.46E+01
	15	538.24	1.76E+01	22.58			1.76E+01	2.26E+01
	16	549.59	3.61E+01	30.17			3.61E+01	3.02E+01
	17	583.35	2.02E+02	57.06			2.02E+02	5.71E+01
	18	609.70	2.87E+02	56.25	3.25E+00	2.97E+00	2.84E+02	5.63E+01
	19	637.87	2.60E+01	29.70			2.60E+01	2.97E+01
	20	686.90	3.75E+01	32.05			3.75E+01	3.21E+01
	21	728.12	5.24E+01	45.40			5.24E+01	4.54E+01
	22	756.04	3.95E+01	28.24			3.95E+01	2.82E+01
	23	768.44	2.89E+01	28.73			2.89E+01	2.87E+01
	24	795.50	2.90E+01	36.08	0.00E+00	0.00E+00	2.90E+01	3.61E+01
	25	811.23	2.50E+01	16.73			2.50E+01	1.67E+01
	26	861.87	3.73E+01	38.63			3.73E+01	3.86E+01
	27	887.66	2.55E+01	24.08			2.55E+01	2.41E+01
	28	911.94	1.12E+02	45.76	2.85E+00	2.76E+00	1.09E+02	4.58E+01
	29	1075.36	2.48E+01	19.77			2.48E+01	1.98E+01
	30	1121.06	5.32E+01	43.89			5.32E+01	4.39E+01
	31	1240.14	7.08E+01	41.51			7.08E+01	4.15E+01
	32	1327.75	1.30E+01	16.82			1.30E+01	1.68E+01
	33	1339.98	1.29E+01	12.22			1.29E+01	1.22E+01
	34	1442.81	1.32E+01	11.14			1.32E+01	1.11E+01
	35	1460.99	7.21E+02	56.32	1.00E+00	1.77E+00	7.20E+02	5.63E+01
	36	1581.26	1.07E+01	12.53			1.07E+01	1.25E+01
M	37	1588.71	3.09E+01	13.60			3.09E+01	1.36E+01
m	38	1592.71	1.50E+01	14.97			1.50E+01	1.50E+01
	39	1662.88	6.82E+00	9.19			6.82E+00	9.19E+00
	40	1669.57	6.00E+00	4.90			6.00E+00	4.90E+00
	41	1728.98	9.47E+00	11.17			9.47E+00	1.12E+01

Analysis Report for 1707091-15

HTC-A08-BKGD02-1218-01

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
42	1765.32	6.06E+01	17.67			6.06E+01	1.77E+01
43	1984.78	8.77E+00	8.02			8.77E+00	8.02E+00
44	2204.04	1.79E+01	11.75			1.79E+01	1.17E+01
45	2302.07	8.25E+00	7.23			8.25E+00	7.23E+00
46	2327.98	6.38E+00	6.65			6.38E+00	6.65E+00
47	2362.78	1.10E+01	8.25			1.10E+01	8.25E+00
48	2615.03	6.90E+01	16.61	1.86E+00	1.12E+00	6.71E+01	1.67E+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	0.995	1460.81	*	10.67	2.61E+01	3.03E+00
CO-58	0.956	810.76	*	99.40	1.59E-01	1.07E-01
TL-208	0.874	583.14	*	30.22	1.17E+00	3.49E-01
		860.37		4.48		
		2614.66	*	35.85	1.07E+00	2.85E-01
PB-210	0.908	46.50	*	4.25	1.73E+00	1.72E+00
BI-212	0.661	727.17	*	11.80	9.48E-01	8.25E-01
		1620.62		2.75		
PB-212	0.874	238.63	*	44.60	1.79E+00	2.43E-01
		300.09	*	3.41	1.44E+00	1.25E+00
BI-214	0.949	609.31	*	46.30	1.12E+00	2.45E-01
		1120.29	*	15.10	1.10E+00	9.09E-01
		1764.49	*	15.80	1.71E+00	5.18E-01
		2204.22	*	4.98	1.86E+00	1.24E+00
PB-214	0.981	295.21	*	19.19	1.34E+00	2.86E-01
		351.92	*	37.19	1.18E+00	1.93E-01
RA-226	1.000	186.21	*	3.28	2.66E+00	5.19E+00
AC-228	0.497	338.32	*	11.40	1.53E+00	6.26E-01
		911.07	*	27.70	1.03E+00	4.38E-01
		969.11		16.60		

Analysis Report for 1707091-15

HTC-A08-BKGD02-1218-01

* = 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 : 8/24/2017 1:12:39PM
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	76.41	3.97678E-01	5.69		
	3	128.43	4.81149E-02	32.15		
	5	209.80	3.05543E-02	36.34	Tol.	CM-243
	7	270.81	1.79286E-02	37.16		
M	11	348.27	1.44145E-02	31.79	Sum	
	13	463.17	1.70238E-02	39.47		
	14	511.13	3.36941E-02	22.50		
	15	538.24	4.88248E-03	64.24	Sum	
	16	549.59	1.00357E-02	41.75		
	19	637.87	7.22807E-03	57.07	Tol.	I-131
	20	686.90	1.04167E-02	42.74		
	22	756.04	1.09722E-02	35.75		
	23	768.44	8.02867E-03	49.70		
	24	795.50	8.05064E-03	62.25	Sum	
	26	861.87	1.03535E-02	51.82		
	27	887.66	7.08974E-03	47.18		
	29	1075.36	6.90151E-03	39.79		
	31	1240.14	1.96756E-02	29.30		
	32	1327.75	3.61111E-03	64.70		
	33	1339.98	3.58586E-03	47.32		
	34	1442.81	3.67690E-03	42.06		
	36	1581.26	2.96053E-03	58.78		
M	37	1588.71	8.57578E-03	22.03		
m	38	1592.71	4.15428E-03	50.04	D-Esc	
	39	1662.88	1.89394E-03	67.41		
	40	1669.57	1.66667E-03	40.82		
	41	1728.98	2.63021E-03	58.98		
	43	1984.78	2.43687E-03	45.68		
	45	2302.07	2.29167E-03	43.81		
	46	2327.98	1.77083E-03	52.17		
	47	2362.78	3.04487E-03	37.61		

Analysis Report for 1707091-15

HTC-A08-BKGD02-1218-01

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	0.99	1460.81	*	10.67	2.61E+01	3.03E+00
CO-58	0.95	810.76	*	99.40	1.59E-01	1.07E-01
TL-208	0.87	583.14	*	30.22	1.17E+00	3.49E-01
		860.37		4.48		
		2614.66	*	35.85	1.07E+00	2.85E-01
PB-210	0.90	46.50	*	4.25	1.73E+00	1.72E+00
BI-212	0.66	727.17	*	11.80	9.48E-01	8.25E-01
		1620.62		2.75		
PB-212	0.87	238.63	*	44.60	1.79E+00	2.43E-01
		300.09	*	3.41	1.44E+00	1.25E+00
BI-214	0.94	609.31	*	46.30	1.12E+00	2.45E-01
		1120.29	*	15.10	1.10E+00	9.09E-01
		1764.49	*	15.80	1.71E+00	5.18E-01
		2204.22	*	4.98	1.86E+00	1.24E+00
PB-214	0.98	295.21	*	19.19	1.34E+00	2.86E-01
		351.92	*	37.19	1.18E+00	1.93E-01
RA-226	1.00	186.21	*	3.28	2.66E+00	5.19E+00
AC-228	0.49	338.32	*	11.40	1.53E+00	6.26E-01
		911.07	*	27.70	1.03E+00	4.38E-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

Analysis Report for 1707091-15

HTC-A08-BKGD02-1218-01

INTERFERENCE CORRECTED REPORT

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
K-40	0.995	2.61E+01	3.03E+00	
CO-58	0.956	1.59E-01	1.07E-01	
TL-208	0.874	1.11E+00	2.21E-01	
PB-210	0.908	1.73E+00	1.72E+00	
BI-212	0.661	9.48E-01	8.25E-01	
PB-212	0.874	1.78E+00	2.38E-01	
BI-214	0.949	1.24E+00	2.12E-01	
PB-214	0.981	1.23E+00	1.60E-01	
RA-226	1.000	2.66E+00	5.19E+00	
AC-228	0.497	1.19E+00	3.59E-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 1707091-15

HTC-A08-BKGD02-1218-01

UNIDENTIFIED PEAKS

Peak Locate Performed on : 8/24/2017 1:12:39PM
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	76.41	3.97678E-01	5.69		
	3	128.43	4.81149E-02	32.15		
	5	209.80	3.05543E-02	36.34	Tol.	CM-243
	7	270.81	1.79286E-02	37.16		
M	11	348.27	1.44145E-02	31.79	Sum	
	13	463.17	1.70238E-02	39.47		
	14	511.13	3.36941E-02	22.50		
	15	538.24	4.88248E-03	64.24	Sum	
	16	549.59	1.00357E-02	41.75		
	19	637.87	7.22807E-03	57.07	Tol.	I-131
	20	686.90	1.04167E-02	42.74		
	22	756.04	1.09722E-02	35.75		
	23	768.44	8.02867E-03	49.70		
	24	795.50	8.05064E-03	62.25	Sum	
	26	861.87	1.03535E-02	51.82		
	27	887.66	7.08974E-03	47.18		
	29	1075.36	6.90151E-03	39.79		
	31	1240.14	1.96756E-02	29.30		
	32	1327.75	3.61111E-03	64.70		
	33	1339.98	3.58586E-03	47.32		
	34	1442.81	3.67690E-03	42.06		
	36	1581.26	2.96053E-03	58.78		
M	37	1588.71	8.57578E-03	22.03		
m	38	1592.71	4.15428E-03	50.04	D-Esc	
	39	1662.88	1.89394E-03	67.41		
	40	1669.57	1.66667E-03	40.82		
	41	1728.98	2.63021E-03	58.98		
	43	1984.78	2.43687E-03	45.68		
	45	2302.07	2.29167E-03	43.81		
	46	2327.98	1.77083E-03	52.17		
	47	2362.78	3.04487E-03	37.61		

Analysis Report for 1707091-15

HTC-A08-BKGD02-1218-01

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	1.92E-01	2.74E+00	2.74E+00
+		NA-22	1274.54		99.94	-1.08E-02	1.29E-01	1.29E-01
+	@	NA-24	1368.53		99.99	1.00E+26	1.00E+26	1.00E+26
	@		2754.09		99.86	1.00E+26		1.00E+26
+		AL-26	1808.65		99.76	1.71E-02	8.58E-02	8.58E-02
+		K-40	1460.81	*	10.67	2.61E+01	1.13E+00	1.13E+00
+	@	AR-41	1293.64		99.16	1.00E+26	1.00E+26	1.00E+26
+		TI-44	67.88		94.40	-6.38E-03	6.68E-02	6.68E-02
			78.34		96.00	1.84E-01		8.53E-02
+		SC-46	889.25		99.98	1.65E-01	2.31E-01	2.31E-01
			1120.51		99.99	4.02E-01		3.98E-01
+		V-48	983.52		99.98	-2.51E+00	7.84E+00	8.43E+00
			1312.10		97.50	-1.31E+00		7.84E+00
+		CR-51	320.08		9.83	4.94E+00	9.07E+00	9.07E+00
+		MN-54	834.83		99.97	-1.77E-02	1.27E-01	1.27E-01
+		CO-56	846.75		99.96	5.70E-03	2.13E-01	2.13E-01
			1037.75		14.03	-6.33E-01		1.81E+00
			1238.25		67.00	5.53E-01		5.87E-01
			1771.40		15.51	-1.23E-01		1.41E+00
			2598.48		16.90	0.00E+00		2.22E-01
+		CO-57	122.06		85.51	2.23E-03	7.06E-02	7.06E-02
			136.48		10.60	3.46E-02		6.35E-01
+		CO-58	810.76	*	99.40	1.59E-01	1.57E-01	1.57E-01
+		FE-59	1099.22		56.50	2.51E-01	1.01E+00	1.01E+00
			1291.56		43.20	5.31E-02		1.21E+00
+		CO-60	1173.22		100.00	1.84E-02	9.50E-02	1.35E-01
			1332.49		100.00	3.40E-02		9.50E-02
+		ZN-65	1115.52		50.75	1.44E-02	3.47E-01	3.47E-01
+		GA-67	93.31		35.70	6.06E+08	3.66E+08	3.66E+08
			208.95		2.24	6.16E+09		6.88E+09
			300.22		16.00	-2.35E+09		1.04E+09
+		SE-75	121.11		16.70	9.83E-02	1.56E-01	5.07E-01

Analysis Report for 1707091-15

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	SE-75	136.00	59.20	-1.08E-02	1.56E-01	1.56E-01
		264.65	59.80	1.94E-02		1.99E-01
		279.53	25.20	1.64E-01		5.25E-01
		400.65	11.40	3.28E-01		1.22E+00
+	RB-82	776.52	13.00	-9.43E+00	1.03E+01	1.03E+01
+	RB-83	520.41	46.00	6.56E-02	3.98E-01	3.98E-01
		529.64	30.30	1.31E-01		5.81E-01
		552.65	16.40	-3.60E-01		1.12E+00
+	KR-85	513.99	0.43	3.55E+01	2.62E+01	2.62E+01
+	SR-85	513.99	99.27	4.49E-01	3.31E-01	3.31E-01
+	Y-88	898.02	93.40	-2.60E-02	1.34E-01	1.54E-01
		1836.01	99.38	-1.78E-02		1.34E-01
+	MO-93	263.06	56.72	-4.16E-02	6.36E-02	1.18E-01
		684.67	99.68	-8.32E-03		9.14E-02
		1477.11	99.08	-2.93E-02		6.36E-02
+	NB-93M	16.57	9.43	2.87E+01	7.33E+01	7.33E+01
+	NB-94	702.63	100.00	5.83E-02	9.77E-02	1.01E-01
		871.10	100.00	-3.49E-03		9.77E-02
+	NB-95	765.79	99.81	-4.60E-02	7.63E-01	7.63E-01
+	NB-95M	235.69	25.00	6.40E+06	1.16E+08	1.16E+08
+	ZR-95	724.18	43.70	1.13E-01	4.93E-01	7.11E-01
		756.72	55.30	4.02E-02		4.93E-01
+	MO-99	181.06	6.20	8.73E+09	7.76E+10	9.75E+10
		739.58	12.80	1.65E+10		7.76E+10
		778.00	4.50	-2.42E+11		2.11E+11
+	RU-103	497.08	89.00	1.56E-01	5.38E-01	5.38E-01
+	RU-106	621.84	9.80	6.34E-02	1.05E+00	1.05E+00
+	AG-108M	433.93	89.90	-5.18E-03	7.94E-02	7.94E-02
		614.37	90.40	-1.20E-02		1.12E-01
		722.95	90.50	2.49E-02		1.05E-01
+	CD-109	88.03	3.72	1.95E+00	2.08E+00	2.08E+00
+	AG-110M	657.75	93.14	-8.17E-02	1.20E-01	1.20E-01
		677.61	10.53	4.17E-01		1.12E+00
		706.67	16.46	-4.15E-01		7.18E-01
		763.93	21.98	1.35E-01		5.69E-01
		884.67	71.63	2.34E-03		1.79E-01
		1384.27	23.94	1.05E-01		5.22E-01
+	CD-113M	263.70	0.02	-2.08E+00	2.92E+02	2.92E+02
+	SN-113	255.12	1.93	2.43E-01	2.06E-01	6.43E+00
		391.69	64.90	2.46E-02		2.06E-01
+	TE123M	159.00	84.10	-2.38E-02	1.07E-01	1.07E-01
+	SB-124	602.71	97.87	5.52E-04	2.62E-01	2.62E-01
		645.85	7.26	1.27E+00		3.49E+00
		722.78	11.10	6.48E-01		2.74E+00
		1691.02	49.00	-1.46E-01		3.99E-01
+	I-125	35.49	6.49	3.03E+00	6.63E+00	6.63E+00
+	SB-125	176.33	6.89	-1.85E-01	2.72E-01	7.99E-01
		427.89	29.33	5.85E-03		2.72E-01

Analysis Report for 1707091-15

HTC-A08-BKGD02-1218-01

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	SB-125	463.38	10.35	9.33E-01	2.72E-01	9.24E-01
		600.56	17.80	3.96E-03		4.90E-01
		635.90	11.32	1.99E-02		8.89E-01
+	SB-126	414.70	83.30	-8.52E+00	2.48E+01	2.53E+01
		666.33	99.60	1.18E+01		2.76E+01
		695.00	99.60	-1.96E+00		2.48E+01
		720.50	53.80	2.13E+01		4.93E+01
+	SN-126	87.57	37.00	1.68E-01	1.80E-01	1.80E-01
+	SB-127	473.00	25.00	-5.69E+06	1.98E+07	2.24E+07
		685.20	35.70	-1.80E+06		1.98E+07
		783.80	14.70	-7.36E+06		5.25E+07
+	I-129	29.78	57.00	1.42E-01	4.05E-01	4.05E-01
		33.60	13.20	5.66E-01		1.17E+00
		39.58	7.52	2.64E-01		1.41E+00
+	I-131	284.30	6.05	-1.22E+03	5.16E+02	6.84E+03
		364.48	81.20	-5.11E+01		5.16E+02
		636.97	7.26	5.22E+03		7.79E+03
		722.89	1.80	7.55E+03		3.19E+04
+	TE-132	49.72	13.10	-1.21E+09	1.72E+08	1.21E+09
		228.16	88.00	9.79E+07		1.72E+08
+	BA-133	81.00	33.00	-8.37E-01	1.71E-01	1.85E-01
		302.84	17.80	1.57E-02		4.23E-01
		356.01	60.00	9.79E-02		1.71E-01
+	@ I-133	529.87	86.30	1.00E+26	1.00E+26	1.00E+26
+	XE-133	81.00	38.00	-4.49E+05	9.92E+04	9.92E+04
+	CS-134	563.23	8.38	1.54E-01	1.00E-01	1.04E+00
		569.32	15.43	-2.57E-01		5.20E-01
		604.70	97.60	8.12E-03		1.00E-01
		795.84	85.40	8.79E-02		1.37E-01
		801.93	8.73	-6.73E-01		1.08E+00
+	CS-135	268.24	16.00	2.48E-02	4.51E-01	4.51E-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	-2.09E+01	1.92E+01	1.45E+02
		163.89	4.61	3.34E+01		2.29E+02
		176.55	13.56	-1.80E+01		7.74E+01
		273.65	12.66	-4.42E+01		1.17E+02
		340.57	48.50	6.61E+01		3.74E+01
		818.50	99.70	1.16E+01		1.92E+01
		1048.07	79.60	-6.09E+00		2.63E+01
		1235.34	19.70	6.12E+00		1.55E+02
+	CS-137	661.65	85.12	-3.00E-02	1.07E-01	1.07E-01
+	LA-138	788.74	34.00	8.36E-02	1.20E-01	2.84E-01
		1435.80	66.00	2.41E-02		1.20E-01
+	CE-139	165.85	80.35	1.90E-02	1.10E-01	1.10E-01
+	BA-140	162.64	6.70	2.06E+01	7.13E+01	1.82E+02
		304.84	4.50	-4.72E+00		3.59E+02
		423.70	3.20	-6.34E+01		5.71E+02

Analysis Report for 1707091-15

HTC-A08-BKGD02-1218-01

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	BA-140	437.55	2.00	2.42E+02	7.13E+01	8.93E+02
		537.32	25.00	-2.07E+00		7.13E+01
+	LA-140	328.77	20.50	4.44E+01	2.59E+01	8.72E+01
		487.03	45.50	-5.44E+00		4.04E+01
		815.85	23.50	-7.58E+00		7.86E+01
		1596.49	95.49	-1.03E+00		2.59E+01
+	CE-141	145.44	48.40	-2.14E-01	9.20E-01	9.20E-01
+	@ CE-143	57.36	11.80	1.00E+26	1.00E+26	1.00E+26
	@	293.26	42.00	1.00E+26		1.00E+26
	@	664.55	5.20	1.00E+26		1.00E+26
+	CE-144	133.54	10.80	1.66E-01	6.08E-01	6.08E-01
+	PM-144	476.78	42.00	1.84E-03	9.80E-02	2.19E-01
		618.01	98.60	-3.03E-02		9.80E-02
		696.49	99.49	-4.05E-02		1.06E-01
+	PM-145	36.85	21.70	-1.86E-01	3.00E-01	5.63E-01
		37.36	39.70	-9.64E-02		3.00E-01
		42.30	15.10	-8.99E-02		6.31E-01
		72.40	2.31	-5.61E+00		3.24E+00
+	PM-146	453.90	39.94	6.02E-02	1.95E-01	1.95E-01
		735.90	14.01	6.37E-02		6.49E-01
		747.13	13.10	6.13E-02		6.58E-01
+	ND-147	91.11	28.90	-1.44E+02	1.30E+02	1.30E+02
		531.02	13.10	-1.14E+02		3.34E+02
+	PM-149	285.90	3.10	-3.49E+13	1.21E+14	1.21E+14
+	EU-152	121.78	20.50	7.28E-03	2.30E-01	2.30E-01
		244.69	5.40	-1.87E-02		1.50E+00
		344.27	19.13	-9.09E-01		3.56E-01
		778.89	9.20	-3.60E-01		9.90E-01
		964.01	10.40	-2.15E+00		1.22E+00
		1085.78	7.22	4.29E-02		1.54E+00
		1112.02	9.60	-5.90E-01		1.17E+00
		1407.95	14.94	1.32E-01		6.97E-01
+	GD-153	97.43	31.30	6.19E-02	2.04E-01	2.04E-01
		103.18	22.20	-7.18E-02		2.95E-01
+	EU-154	123.07	40.50	-7.78E-04	1.20E-01	1.20E-01
		723.30	19.70	1.17E-01		4.93E-01
		873.19	11.50	5.40E-02		8.63E-01
		996.32	10.30	2.27E-02		1.00E+00
		1004.76	17.90	2.95E-01		6.32E-01
		1274.45	35.50	-2.89E-02		3.45E-01
+	EU-155	86.50	30.90	1.74E-01	2.24E-01	2.24E-01
		105.30	20.70	9.14E-02		2.53E-01
+	EU-156	811.77	10.40	-8.39E+00	7.69E+01	7.69E+01
		1153.47	7.20	-6.74E+01		1.51E+02
		1230.71	8.90	4.78E+01		1.64E+02
+	HO-166M	184.41	72.60	9.66E-02	9.08E-02	9.08E-02
		280.45	29.60	1.54E-01		2.51E-01
		410.94	11.10	1.46E-02		6.98E-01
		711.69	54.10	7.34E-02		1.69E-01

Analysis Report for 1707091-15

HTC-A08-BKGD02-1218-01

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	TM-171	66.72		0.14	-3.77E+01	5.09E+01	5.09E+01
+	HF-172	67.35		5.31	-1.26E-01	5.06E-01	1.32E+00
		125.81		11.30	-1.32E-01		5.06E-01
+	LU-172	181.53		20.60	4.56E+02	6.36E+03	8.99E+03
		900.72		29.81	-7.03E+03		9.46E+03
		1093.66		62.50	1.99E+03		6.36E+03
+	LU-173	100.72		5.24	1.68E-01	3.98E-01	1.08E+00
		272.11		21.20	-8.37E-02		3.98E-01
+	HF-175	343.40		84.00	-5.53E-01	2.17E-01	2.17E-01
+	LU-176	88.34		13.30	3.56E-01	6.37E-02	5.07E-01
		201.83		86.00	-1.18E-02		6.37E-02
		306.78		94.00	-3.24E-03		7.06E-02
+	HF-181	133.02		41.70	1.31E-01	5.15E-01	6.39E-01
		345.85		17.20	-2.12E+00		2.13E+00
		482.03		82.80	7.85E-02		5.15E-01
+	TA-182	67.75		41.20	-2.69E-02	2.82E-01	2.82E-01
		1121.30		34.90	1.02E+00		9.07E-01
		1189.05		16.23	1.28E-01		1.54E+00
		1221.41		26.98	-3.68E-02		9.39E-01
		1231.02		11.44	6.84E-01		2.35E+00
+	IR-192	308.46		29.68	2.10E-01	3.97E-01	5.77E-01
		468.07		48.10	9.96E-02		3.97E-01
+	HG-203	279.19		77.30	3.23E-01	4.38E-01	4.38E-01
+	TL-204	374.74		94.11	-4.07E-02	7.78E-02	7.78E-02
		899.15		99.16	-2.67E-02		7.92E-02
		911.74		91.10	4.12E-01		1.99E-01
+	BI-207	569.67		97.72	-1.99E-03	7.71E-02	7.71E-02
		1063.62		74.90	-1.81E-02		1.56E-01
+	TL-208	583.14	*	30.22	1.17E+00	1.21E-01	4.86E-01
		860.37		4.48	6.93E-01		2.33E+00
		2614.66	*	35.85	1.07E+00		1.21E-01
+	BI-210M	262.00		45.00	2.58E-04	1.48E-01	1.48E-01
		300.00		23.00	-7.78E-01		3.45E-01
+	PB-210	46.50	*	4.25	1.73E+00	2.81E+00	2.81E+00
+	PB-211	404.84		2.90	-1.87E-01	2.67E+00	2.67E+00
		831.96		2.90	1.84E+00		3.54E+00
+	BI-212	727.17	*	11.80	9.48E-01	1.33E+00	1.33E+00
		1620.62		2.75	3.05E-01		3.59E+00
+	PB-212	238.63	*	44.60	1.79E+00	2.60E-01	2.60E-01
		300.09	*	3.41	1.44E+00		3.54E+00
+	BI-214	609.31	*	46.30	1.12E+00	3.02E-01	3.02E-01
		1120.29	*	15.10	1.10E+00		1.46E+00
		1764.49	*	15.80	1.71E+00		4.66E-01
		2204.22	*	4.98	1.86E+00		1.68E+00
+	PB-214	295.21	*	19.19	1.34E+00	3.40E-01	6.21E-01
		351.92	*	37.19	1.18E+00		3.40E-01
+	RN-219	401.80		6.50	-3.20E-01	1.18E+00	1.18E+00
+	RA-223	323.87		3.88	-4.64E-01	1.88E+00	1.88E+00

Analysis Report for 1707091-15

HTC-A08-BKGD02-1218-01

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	RA-224	240.98		3.95	2.09E+01	3.49E+00	3.49E+00
+	RA-225	40.00		31.00	7.09E+00	3.77E+01	3.77E+01
+	RA-226	186.21	*	3.28	2.66E+00	2.88E+00	2.88E+00
+	TH-227	50.10		8.40	-8.71E-01	8.76E-01	8.76E-01
		236.00		11.50	5.28E-02		9.60E-01
		256.20		6.30	3.20E-01		1.08E+00
+	AC-228	338.32	*	11.40	1.53E+00	6.56E-01	9.51E-01
		911.07	*	27.70	1.03E+00		6.56E-01
		969.11		16.60	1.26E+00		1.00E+00
+	TH-230	48.44		16.90	4.27E-01	4.82E-01	4.82E-01
		62.85		4.60	1.94E-01		1.53E+00
		67.67		0.37	-1.63E+00		1.70E+01
+	PA-231	283.67		1.60	-8.49E-01	3.21E+00	4.36E+00
		302.67		2.30	1.20E-01		3.21E+00
+	TH-231	25.64		14.70	-1.44E+00	9.87E-01	3.00E+00
		84.21		6.40	5.43E-02		9.87E-01
+	PA-233	311.98		38.60	-5.55E-01	2.22E+00	2.22E+00
+	PA-234	131.20		20.40	-2.07E-02	2.60E-01	2.60E-01
		733.99		8.80	4.80E-02		1.09E+00
		946.00		12.00	-1.51E-01		7.52E-01
+	PA-234M	1001.03		0.92	4.67E+00	1.16E+01	1.16E+01
+	TH-234	63.29		3.80	1.93E+00	1.86E+00	1.86E+00
+	U-235	143.76		10.50	8.96E-02	5.02E-01	5.02E-01
		163.35		4.70	1.60E-01		1.10E+00
		205.31		4.70	1.72E-01		1.46E+00
+	NP-237	86.50		12.60	4.11E-01	5.30E-01	5.30E-01
+	NP-239	106.10		22.70	6.51E+11	1.81E+12	1.81E+12
		228.18		10.70	3.05E+12		5.36E+12
		277.60		14.10	3.34E+12		4.24E+12
+	AM-241	59.54		35.90	-8.74E-02	1.92E-01	1.92E-01
+	AM-243	74.67		66.00	2.56E-01	1.36E-01	1.36E-01
+	CM-243	209.75		3.29	2.41E+00	5.30E-01	2.25E+00
		228.14		10.60	3.82E-01		6.72E-01
		277.60		14.00	4.18E-01		5.30E-01

+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction
? = CAUTION: MDA value is inconsistent with Currie MDA at 95% confidence level

Analysis Report for 1707091-15

HTC-A08-BKGD02-1218-01

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	2.74E+00	2.74E+00	1.92E-01	1.30E+00
	NA-22	1274.54		99.94	1.29E-01	1.29E-01	-1.08E-02	5.95E-02
@	NA-24	1368.53		99.99	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		2754.09		99.86	1.00E+26		1.00E+26	1.00E+20
	AL-26	1808.65		99.76	8.58E-02	8.58E-02	1.71E-02	3.68E-02
+	K-40	1460.81	*	10.67	1.13E+00	1.13E+00	2.61E+01	5.14E-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	6.68E-02	6.68E-02	-6.38E-03	3.27E-02
		78.34		96.00	8.53E-02		1.84E-01	4.20E-02
	SC-46	889.25		99.98	2.31E-01	2.31E-01	1.65E-01	1.08E-01
		1120.51		99.99	3.98E-01		4.02E-01	1.89E-01
	V-48	983.52		99.98	8.43E+00	7.84E+00	-2.51E+00	3.91E+00
		1312.10		97.50	7.84E+00		-1.31E+00	3.52E+00
	CR-51	320.08		9.83	9.07E+00	9.07E+00	4.94E+00	4.36E+00
	MN-54	834.83		99.97	1.27E-01	1.27E-01	-1.77E-02	5.95E-02
	CO-56	846.75		99.96	2.13E-01	2.13E-01	5.70E-03	9.86E-02
		1037.75		14.03	1.81E+00		-6.33E-01	8.39E-01
		1238.25		67.00	5.87E-01		5.53E-01	2.77E-01
		1771.40		15.51	1.41E+00		-1.23E-01	6.12E-01
		2598.48		16.90	2.22E-01		0.00E+00	0.00E+00
	CO-57	122.06		85.51	7.06E-02	7.06E-02	2.23E-03	3.42E-02
		136.48		10.60	6.35E-01		3.46E-02	3.08E-01
+	CO-58	810.76	*	99.40	1.57E-01	1.57E-01	1.59E-01	7.01E-02
	FE-59	1099.22		56.50	1.01E+00	1.01E+00	2.51E-01	4.68E-01
		1291.56		43.20	1.21E+00		5.31E-02	5.51E-01
	CO-60	1173.22		100.00	1.35E-01	9.50E-02	1.84E-02	6.29E-02
		1332.49		100.00	9.50E-02		3.40E-02	4.25E-02
	ZN-65	1115.52		50.75	3.47E-01	3.47E-01	1.44E-02	1.63E-01
	GA-67	93.31		35.70	3.66E+08	3.66E+08	6.06E+08	1.79E+08
		208.95		2.24	6.88E+09		6.16E+09	3.35E+09
		300.22		16.00	1.04E+09		-2.35E+09	5.04E+08
	SE-75	121.11		16.70	5.07E-01	1.56E-01	9.83E-02	2.46E-01
		136.00		59.20	1.56E-01		-1.08E-02	7.58E-02
		264.65		59.80	1.99E-01		1.94E-02	9.61E-02
		279.53		25.20	5.25E-01		1.64E-01	2.54E-01
		400.65		11.40	1.22E+00		3.28E-01	5.84E-01
	RB-82	776.52		13.00	1.03E+01	1.03E+01	-9.43E+00	4.81E+00
	RB-83	520.41		46.00	3.98E-01	3.98E-01	6.56E-02	1.88E-01
		529.64		30.30	5.81E-01		1.31E-01	2.74E-01
		552.65		16.40	1.12E+00		-3.60E-01	5.29E-01
	KR-85	513.99		0.43	2.62E+01	2.62E+01	3.55E+01	1.26E+01
	SR-85	513.99		99.27	3.31E-01	3.31E-01	4.49E-01	1.59E-01

Analysis Report for 1707091-15

HTC-A08-BKGD02-1218-01

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
Y-88	898.02	93.40	1.54E-01	1.34E-01	-2.60E-02	6.98E-02
	1836.01	99.38	1.34E-01		-1.78E-02	5.49E-02
MO-93	263.06	56.72	1.18E-01	6.36E-02	-4.16E-02	5.67E-02
	684.67	99.68	9.14E-02		-8.32E-03	4.29E-02
	1477.11	99.08	6.36E-02		-2.93E-02	2.64E-02
NB-93M	16.57	9.43	7.33E+01	7.33E+01	2.87E+01	3.57E+01
NB-94	702.63	100.00	1.01E-01	9.77E-02	5.83E-02	4.78E-02
	871.10	100.00	9.77E-02		-3.49E-03	4.54E-02
NB-95	765.79	99.81	7.63E-01	7.63E-01	-4.60E-02	3.59E-01
NB-95M	235.69	25.00	1.16E+08	1.16E+08	6.40E+06	5.71E+07
ZR-95	724.18	43.70	7.11E-01	4.93E-01	1.13E-01	3.36E-01
	756.72	55.30	4.93E-01		4.02E-02	2.30E-01
MO-99	181.06	6.20	9.75E+10	7.76E+10	8.73E+09	4.72E+10
	739.58	12.80	7.76E+10		1.65E+10	3.62E+10
	778.00	4.50	2.11E+11		-2.42E+11	9.77E+10
RU-103	497.08	89.00	5.38E-01	5.38E-01	1.56E-01	2.56E-01
RU-106	621.84	9.80	1.05E+00	1.05E+00	6.34E-02	4.96E-01
AG-108M	433.93	89.90	7.94E-02	7.94E-02	-5.18E-03	3.77E-02
	614.37	90.40	1.12E-01		-1.20E-02	5.32E-02
	722.95	90.50	1.05E-01		2.49E-02	4.94E-02
CD-109	88.03	3.72	2.08E+00	2.08E+00	1.95E+00	1.02E+00
AG-110M	657.75	93.14	1.20E-01	1.20E-01	-8.17E-02	5.61E-02
	677.61	10.53	1.12E+00		4.17E-01	5.26E-01
	706.67	16.46	7.18E-01		-4.15E-01	3.36E-01
	763.93	21.98	5.69E-01		1.35E-01	2.66E-01
	884.67	71.63	1.79E-01		2.34E-03	8.30E-02
	1384.27	23.94	5.22E-01		1.05E-01	2.34E-01
CD-113M	263.70	0.02	2.92E+02	2.92E+02	-2.08E+00	1.41E+02
SN-113	255.12	1.93	6.43E+00	2.06E-01	2.43E-01	3.11E+00
	391.69	64.90	2.06E-01		2.46E-02	9.81E-02
TE123M	159.00	84.10	1.07E-01	1.07E-01	-2.38E-02	5.16E-02
SB-124	602.71	97.87	2.62E-01	2.62E-01	5.52E-04	1.23E-01
	645.85	7.26	3.49E+00		1.27E+00	1.63E+00
	722.78	11.10	2.74E+00		6.48E-01	1.29E+00
	1691.02	49.00	3.99E-01		-1.46E-01	1.61E-01
I-125	35.49	6.49	6.63E+00	6.63E+00	3.03E+00	3.23E+00
SB-125	176.33	6.89	7.99E-01	2.72E-01	-1.85E-01	3.86E-01
	427.89	29.33	2.72E-01		5.85E-03	1.30E-01
	463.38	10.35	9.24E-01		9.33E-01	4.42E-01
	600.56	17.80	4.90E-01		3.96E-03	2.30E-01
	635.90	11.32	8.89E-01		1.99E-02	4.20E-01
SB-126	414.70	83.30	2.53E+01	2.48E+01	-8.52E+00	1.21E+01
	666.33	99.60	2.76E+01		1.18E+01	1.30E+01
	695.00	99.60	2.48E+01		-1.96E+00	1.16E+01
	720.50	53.80	4.93E+01		2.13E+01	2.31E+01
SN-126	87.57	37.00	1.80E-01	1.80E-01	1.68E-01	8.84E-02
SB-127	473.00	25.00	2.24E+07	1.98E+07	-5.69E+06	1.06E+07
	685.20	35.70	1.98E+07		-1.80E+06	9.28E+06
	783.80	14.70	5.25E+07		-7.36E+06	2.46E+07
I-129	29.78	57.00	4.05E-01	4.05E-01	1.42E-01	1.97E-01
	33.60	13.20	1.17E+00		5.66E-01	5.69E-01
	39.58	7.52	1.41E+00		2.64E-01	6.84E-01
I-131	284.30	6.05	6.84E+03	5.16E+02	-1.22E+03	3.30E+03

Analysis Report for 1707091-15

HTC-A08-BKGD02-1218-01

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
I-131	364.48	81.20	5.16E+02	5.16E+02	-5.11E+01	2.47E+02
	636.97	7.26	7.79E+03		5.22E+03	3.68E+03
	722.89	1.80	3.19E+04		7.55E+03	1.50E+04
TE-132	49.72	13.10	1.21E+09	1.72E+08	-1.21E+09	5.92E+08
	228.16	88.00	1.72E+08		9.79E+07	8.34E+07
BA-133	81.00	33.00	1.85E-01	1.71E-01	-8.37E-01	9.05E-02
	302.84	17.80	4.23E-01		1.57E-02	2.04E-01
	356.01	60.00	1.71E-01		9.79E-02	8.27E-02
@ I-133	529.87	86.30	1.00E+26	1.00E+26	1.00E+26	1.00E+20
XE-133	81.00	38.00	9.92E+04	9.92E+04	-4.49E+05	4.85E+04
CS-134	563.23	8.38	1.04E+00	1.00E-01	1.54E-01	4.92E-01
	569.32	15.43	5.20E-01		-2.57E-01	2.43E-01
	604.70	97.60	1.00E-01		8.12E-03	4.75E-02
	795.84	85.40	1.37E-01		8.79E-02	6.44E-02
	801.93	8.73	1.08E+00		-6.73E-01	5.00E-01
CS-135	268.24	16.00	4.51E-01	4.51E-01	2.48E-02	2.18E-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	1.45E+02	1.92E+01	-2.09E+01	7.02E+01
	163.89	4.61	2.29E+02		3.34E+01	1.11E+02
	176.55	13.56	7.74E+01		-1.80E+01	3.74E+01
	273.65	12.66	1.17E+02		-4.42E+01	5.65E+01
	340.57	48.50	3.74E+01		6.61E+01	1.81E+01
	818.50	99.70	1.92E+01		1.16E+01	8.95E+00
	1048.07	79.60	2.63E+01		-6.09E+00	1.21E+01
	1235.34	19.70	1.55E+02		6.12E+00	7.28E+01
CS-137	661.65	85.12	1.07E-01	1.07E-01	-3.00E-02	5.05E-02
LA-138	788.74	34.00	2.84E-01	1.20E-01	8.36E-02	1.33E-01
	1435.80	66.00	1.20E-01		2.41E-02	5.21E-02
CE-139	165.85	80.35	1.10E-01	1.10E-01	1.90E-02	5.34E-02
BA-140	162.64	6.70	1.82E+02	7.13E+01	2.06E+01	8.84E+01
	304.84	4.50	3.59E+02		-4.72E+00	1.72E+02
	423.70	3.20	5.71E+02		-6.34E+01	2.72E+02
	437.55	2.00	8.93E+02		2.42E+02	4.25E+02
	537.32	25.00	7.13E+01		-2.07E+00	3.36E+01
LA-140	328.77	20.50	8.72E+01	2.59E+01	4.44E+01	4.20E+01
	487.03	45.50	4.04E+01		-5.44E+00	1.91E+01
	815.85	23.50	7.86E+01		-7.58E+00	3.61E+01
	1596.49	95.49	2.59E+01		-1.03E+00	1.15E+01
CE-141	145.44	48.40	9.20E-01	9.20E-01	-2.14E-01	4.47E-01
@ CE-143	57.36	11.80	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	293.26	42.00	1.00E+26		1.00E+26	1.00E+20
@	664.55	5.20	1.00E+26		1.00E+26	1.00E+20
CE-144	133.54	10.80	6.08E-01	6.08E-01	1.66E-01	2.95E-01
PM-144	476.78	42.00	2.19E-01	9.80E-02	1.84E-03	1.04E-01
	618.01	98.60	9.80E-02		-3.03E-02	4.59E-02
	696.49	99.49	1.06E-01		-4.05E-02	4.97E-02
PM-145	36.85	21.70	5.63E-01	3.00E-01	-1.86E-01	2.74E-01
	37.36	39.70	3.00E-01		-9.64E-02	1.46E-01
	42.30	15.10	6.31E-01		-8.99E-02	3.07E-01
	72.40	2.31	3.24E+00		-5.61E+00	1.59E+00
PM-146	453.90	39.94	1.95E-01	1.95E-01	6.02E-02	9.28E-02

Analysis Report for 1707091-15

HTC-A08-BKGD02-1218-01

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
PM-146	735.90	14.01	6.49E-01	1.95E-01	6.37E-02	3.03E-01
	747.13	13.10	6.58E-01		6.13E-02	3.06E-01
ND-147	91.11	28.90	1.30E+02	1.30E+02	-1.44E+02	6.37E+01
	531.02	13.10	3.34E+02		-1.14E+02	1.57E+02
PM-149	285.90	3.10	1.21E+14	1.21E+14	-3.49E+13	5.83E+13
EU-152	121.78	20.50	2.30E-01	2.30E-01	7.28E-03	1.12E-01
	244.69	5.40	1.50E+00		-1.87E-02	7.27E-01
	344.27	19.13	3.56E-01		-9.09E-01	1.70E-01
	778.89	9.20	9.90E-01		-3.60E-01	4.61E-01
	964.01	10.40	1.22E+00		-2.15E+00	5.72E-01
	1085.78	7.22	1.54E+00		4.29E-02	7.14E-01
	1112.02	9.60	1.17E+00		-5.90E-01	5.42E-01
	1407.95	14.94	6.97E-01		1.32E-01	3.14E-01
GD-153	97.43	31.30	2.04E-01	2.04E-01	6.19E-02	9.92E-02
	103.18	22.20	2.95E-01		-7.18E-02	1.44E-01
EU-154	123.07	40.50	1.20E-01	1.20E-01	-7.78E-04	5.81E-02
	723.30	19.70	4.93E-01		1.17E-01	2.32E-01
	873.19	11.50	8.63E-01		5.40E-02	4.01E-01
	996.32	10.30	1.00E+00		2.27E-02	4.64E-01
	1004.76	17.90	6.32E-01		2.95E-01	2.94E-01
	1274.45	35.50	3.45E-01		-2.89E-02	1.59E-01
EU-155	86.50	30.90	2.24E-01	2.24E-01	1.74E-01	1.10E-01
	105.30	20.70	2.53E-01		9.14E-02	1.23E-01
EU-156	811.77	10.40	7.69E+01	7.69E+01	-8.39E+00	3.54E+01
	1153.47	7.20	1.51E+02		-6.74E+01	6.93E+01
	1230.71	8.90	1.64E+02		4.78E+01	7.69E+01
HO-166M	184.41	72.60	9.08E-02	9.08E-02	9.66E-02	4.42E-02
	280.45	29.60	2.51E-01		1.54E-01	1.21E-01
	410.94	11.10	6.98E-01		1.46E-02	3.34E-01
	711.69	54.10	1.69E-01		7.34E-02	7.94E-02
TM-171	66.72	0.14	5.09E+01	5.09E+01	-3.77E+01	2.49E+01
HF-172	67.35	5.31	1.32E+00	5.06E-01	-1.26E-01	6.44E-01
	125.81	11.30	5.06E-01		-1.32E-01	2.46E-01
LU-172	181.53	20.60	8.99E+03	6.36E+03	4.56E+02	4.35E+03
	900.72	29.81	9.46E+03		-7.03E+03	4.33E+03
	1093.66	62.50	6.36E+03		1.99E+03	2.95E+03
LU-173	100.72	5.24	1.08E+00	3.98E-01	1.68E-01	5.27E-01
	272.11	21.20	3.98E-01		-8.37E-02	1.92E-01
HF-175	343.40	84.00	2.17E-01	2.17E-01	-5.53E-01	1.04E-01
LU-176	88.34	13.30	5.07E-01	6.37E-02	3.56E-01	2.49E-01
	201.83	86.00	6.37E-02		-1.18E-02	3.08E-02
	306.78	94.00	7.06E-02		-3.24E-03	3.39E-02
HF-181	133.02	41.70	6.39E-01	5.15E-01	1.31E-01	3.10E-01
	345.85	17.20	2.13E+00		-2.12E+00	1.02E+00
	482.03	82.80	5.15E-01		7.85E-02	2.45E-01
TA-182	67.75	41.20	2.82E-01	2.82E-01	-2.69E-02	1.38E-01
	1121.30	34.90	9.07E-01		1.02E+00	4.31E-01
	1189.05	16.23	1.54E+00		1.28E-01	7.18E-01
	1221.41	26.98	9.39E-01		-3.68E-02	4.38E-01
	1231.02	11.44	2.35E+00		6.84E-01	1.10E+00
IR-192	308.46	29.68	5.77E-01	3.97E-01	2.10E-01	2.77E-01
	468.07	48.10	3.97E-01		9.96E-02	1.88E-01
HG-203	279.19	77.30	4.38E-01	4.38E-01	3.23E-01	2.12E-01

Analysis Report for 1707091-15

HTC-A08-BKGD02-1218-01

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	TL-204	374.74		94.11	7.78E-02	7.78E-02	-4.07E-02	3.71E-02
		899.15		99.16	7.92E-02		-2.67E-02	3.59E-02
		911.74		91.10	1.99E-01		4.12E-01	9.56E-02
	BI-207	569.67		97.72	7.71E-02	7.71E-02	-1.99E-03	3.62E-02
		1063.62		74.90	1.56E-01		-1.81E-02	7.26E-02
+	TL-208	583.14	*	30.22	4.86E-01	1.21E-01	1.17E+00	2.35E-01
		860.37		4.48	2.33E+00		6.93E-01	1.09E+00
		2614.66	*	35.85	1.21E-01		1.07E+00	3.87E-02
	BI-210M	262.00		45.00	1.48E-01	1.48E-01	2.58E-04	7.14E-02
		300.00		23.00	3.45E-01		-7.78E-01	1.67E-01
+	PB-210	46.50	*	4.25	2.81E+00	2.81E+00	1.73E+00	1.38E+00
	PB-211	404.84		2.90	2.67E+00	2.67E+00	-1.87E-01	1.28E+00
		831.96		2.90	3.54E+00		1.84E+00	1.66E+00
+	BI-212	727.17	*	11.80	1.33E+00	1.33E+00	9.48E-01	6.40E-01
		1620.62		2.75	3.59E+00		3.05E-01	1.59E+00
+	PB-212	238.63	*	44.60	2.60E-01	2.60E-01	1.79E+00	1.28E-01
		300.09	*	3.41	3.54E+00		1.44E+00	1.73E+00
+	BI-214	609.31	*	46.30	3.02E-01	3.02E-01	1.12E+00	1.46E-01
		1120.29	*	15.10	1.46E+00		1.10E+00	7.02E-01
		1764.49	*	15.80	4.66E-01		1.71E+00	1.95E-01
		2204.22	*	4.98	1.68E+00		1.86E+00	7.00E-01
+	PB-214	295.21	*	19.19	6.21E-01	3.40E-01	1.34E+00	3.04E-01
		351.92	*	37.19	3.40E-01		1.18E+00	1.66E-01
	RN-219	401.80		6.50	1.18E+00	1.18E+00	-3.20E-01	5.64E-01
	RA-223	323.87		3.88	1.88E+00	1.88E+00	-4.64E-01	9.06E-01
	RA-224	240.98		3.95	3.49E+00	3.49E+00	2.09E+01	1.72E+00
	RA-225	40.00		31.00	3.77E+01	3.77E+01	7.09E+00	1.84E+01
+	RA-226	186.21	*	3.28	2.88E+00	2.88E+00	2.66E+00	1.41E+00
	TH-227	50.10		8.40	8.76E-01	8.76E-01	-8.71E-01	4.27E-01
		236.00		11.50	9.60E-01		5.28E-02	4.71E-01
		256.20		6.30	1.08E+00		3.20E-01	5.20E-01
+	AC-228	338.32	*	11.40	9.51E-01	6.56E-01	1.53E+00	4.63E-01
		911.07	*	27.70	6.56E-01		1.03E+00	3.15E-01
		969.11		16.60	1.00E+00		1.26E+00	4.77E-01
	TH-230	48.44		16.90	4.82E-01	4.82E-01	4.27E-01	2.36E-01
		62.85		4.60	1.53E+00		1.94E-01	7.52E-01
		67.67		0.37	1.70E+01		-1.63E+00	8.32E+00
	PA-231	283.67		1.60	4.36E+00	3.21E+00	-8.49E-01	2.10E+00
		302.67		2.30	3.21E+00		1.20E-01	1.55E+00
	TH-231	25.64		14.70	3.00E+00	9.87E-01	-1.44E+00	1.46E+00
		84.21		6.40	9.87E-01		5.43E-02	4.83E-01
	PA-233	311.98		38.60	2.22E+00	2.22E+00	-5.55E-01	1.06E+00
	PA-234	131.20		20.40	2.60E-01	2.60E-01	-2.07E-02	1.27E-01
		733.99		8.80	1.09E+00		4.80E-02	5.14E-01
		946.00		12.00	7.52E-01		-1.51E-01	3.46E-01
	PA-234M	1001.03		0.92	1.16E+01	1.16E+01	4.67E+00	5.39E+00
	TH-234	63.29		3.80	1.86E+00	1.86E+00	1.93E+00	9.13E-01
	U-235	143.76		10.50	5.02E-01	5.02E-01	8.96E-02	2.44E-01
		163.35		4.70	1.10E+00		1.60E-01	5.33E-01
		205.31		4.70	1.46E+00		1.72E-01	7.11E-01
	NP-237	86.50		12.60	5.30E-01	5.30E-01	4.11E-01	2.60E-01
	NP-239	106.10		22.70	1.81E+12	1.81E+12	6.51E+11	8.79E+11
		228.18		10.70	5.36E+12		3.05E+12	2.60E+12

Analysis Report for 1707091-15

HTC-A08-BKGD02-1218-01

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
NP-239	277.60	14.10	4.24E+12	1.81E+12	3.34E+12	2.05E+12
AM-241	59.54	35.90	1.92E-01	1.92E-01	-8.74E-02	9.40E-02
AM-243	74.67	66.00	1.36E-01	1.36E-01	2.56E-01	6.68E-02
CM-243	209.75	3.29	2.25E+00	5.30E-01	2.41E+00	1.10E+00
	228.14	10.60	6.72E-01		3.82E-01	3.26E-01
	277.60	14.00	5.30E-01		4.18E-01	2.56E-01

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

No Action Level results available for reporting purposes.

DATA REVIEW COMMENTS REPORT

Creation Date	Comment	User

No Data Review Comments Entered.

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

Sample Title: HTC-A08-BKGD02-1218-01

Elapsed Live time: 3600
Elapsed Real Time: 3608

Channel								
1:	0	0	0	0	0	0	0	0
9:	8	145	180	157	129	112	109	115
17:	110	79	84	79	93	90	101	91
25:	83	115	85	85	102	92	62	88
33:	75	89	87	90	86	93	83	98
41:	103	99	95	107	98	109	159	138
49:	97	118	91	95	113	137	119	121
57:	112	122	148	170	132	124	176	210
65:	154	145	135	150	130	131	132	138
73:	149	243	364	370	411	445	223	134
81:	96	119	134	156	173	134	195	232
89:	155	172	155	129	204	219	138	78
97:	76	85	107	96	98	83	83	88
105:	104	97	88	101	94	89	79	75
113:	89	98	73	91	89	65	89	75
121:	69	79	66	77	86	86	89	102
129:	92	125	75	94	61	78	99	77
137:	81	69	84	86	90	71	86	77
145:	81	83	67	69	74	87	77	66
153:	66	84	77	76	72	75	59	58
161:	50	56	66	87	63	53	78	58
169:	70	64	55	66	58	63	57	58
177:	54	59	60	64	60	59	61	59
185:	84	132	115	93	61	60	69	65
193:	55	56	53	54	62	50	69	54
201:	50	53	60	51	58	51	55	59
209:	83	89	80	45	52	51	44	42
217:	62	45	50	63	41	55	46	43
225:	48	44	63	60	44	64	49	47
233:	46	57	49	46	54	173	451	310
241:	133	110	88	60	34	43	38	49
249:	36	48	34	42	39	42	36	43
257:	36	42	42	35	36	31	48	27
265:	40	32	39	36	33	59	55	60
273:	24	38	27	43	39	40	52	48
281:	40	37	29	41	36	22	43	30
289:	27	33	34	27	23	49	119	148
297:	72	28	30	45	52	30	35	27
305:	27	32	27	27	25	29	29	24
313:	27	17	24	24	31	30	21	27
321:	33	30	36	24	25	37	30	33
329:	47	31	21	22	34	21	27	24
337:	30	69	70	54	27	28	27	18
345:	14	23	24	26	43	28	53	184
353:	168	65	32	25	21	17	21	24
361:	22	19	21	19	30	20	28	18

369:	21	25	23	12	20	17	23	28

Sample Title: HTC-A08-BKGD02-1218-01

Channel								
377:	31	17	21	33	26	21	20	24
385:	26	19	19	25	25	20	19	25
393:	17	18	25	15	23	23	30	22
401:	21	20	25	23	18	27	26	21
409:	22	28	22	23	24	16	21	17
417:	23	17	22	21	22	19	16	27
425:	22	10	28	25	18	15	15	19
433:	15	17	19	18	15	15	21	27
441:	14	14	19	19	20	14	16	17
449:	16	12	15	12	21	11	16	26
457:	21	19	13	19	17	21	43	36
465:	17	18	15	11	17	15	18	13
473:	11	19	11	13	20	15	18	16
481:	23	15	19	17	21	16	18	12
489:	16	12	16	18	15	20	15	18
497:	12	20	12	22	12	15	13	12
505:	11	9	16	15	14	43	63	70
513:	21	14	22	16	13	14	13	17
521:	14	19	17	16	9	20	17	13
529:	14	13	17	13	11	7	15	10
537:	13	17	18	7	8	12	11	11
545:	12	11	16	12	13	24	21	8
553:	9	14	14	9	20	12	9	14
561:	13	10	20	18	8	8	17	9
569:	12	10	7	11	12	16	11	17
577:	14	18	11	17	11	29	99	85
585:	39	13	9	10	10	9	10	14
593:	11	14	8	15	14	13	14	12
601:	10	13	13	9	13	11	10	32
609:	100	129	53	19	11	13	13	7
617:	11	12	11	7	15	15	10	11
625:	18	11	14	12	9	14	15	13
633:	11	16	9	16	14	24	12	10
641:	10	6	10	13	7	7	12	8
649:	12	9	6	10	13	11	12	10
657:	12	13	17	8	4	15	19	9
665:	16	17	15	8	16	15	10	16
673:	5	18	16	12	5	11	12	12
681:	13	6	9	13	10	9	16	17
689:	14	9	8	7	20	5	10	11
697:	6	15	13	13	11	13	21	12
705:	14	15	6	8	8	12	13	12
713:	16	6	11	9	10	11	12	12
721:	13	8	15	9	7	18	29	37
729:	12	11	19	15	10	8	13	6
737:	11	9	10	10	8	10	9	9
745:	6	4	16	11	5	7	8	5
753:	7	13	11	15	12	11	6	1
761:	6	16	8	9	11	8	15	17
769:	20	16	6	11	14	15	9	7
777:	6	5	8	9	11	17	10	10
785:	8	11	8	16	11	9	7	10
793:	13	12	15	17	11	11	8	6

801:	10	5	9	9	7	17	9	3

Sample Title: HTC-A08-BKGD02-1218-01

Channel								
809:	3	10	11	10	5	4	2	7
817:	8	4	12	10	10	12	3	13
825:	9	16	5	5	10	10	10	8
833:	7	13	16	9	10	9	10	14
841:	11	8	4	7	10	8	3	6
849:	9	8	8	8	15	6	5	10
857:	5	7	3	17	20	10	10	11
865:	8	13	7	6	11	4	11	11
873:	9	9	3	13	9	7	9	8
881:	14	6	7	4	5	9	15	12
889:	13	4	3	6	6	4	4	6
897:	2	3	8	3	6	4	7	8
905:	13	14	7	9	7	16	40	71
913:	35	10	8	4	9	8	4	5
921:	10	7	8	4	10	2	9	8
929:	6	7	7	5	10	13	7	8
937:	5	12	3	8	10	10	4	7
945:	6	4	5	5	13	3	6	7
953:	5	5	9	8	5	4	6	7
961:	8	10	11	11	22	15	8	24
969:	53	33	9	12	7	7	4	4
977:	9	6	9	15	9	3	11	9
985:	9	9	7	12	4	11	7	12
993:	9	9	5	8	5	4	11	7
1001:	4	13	9	9	9	2	8	11
1009:	5	8	4	5	8	6	8	8
1017:	7	8	6	9	7	4	9	5
1025:	8	5	7	4	10	3	5	6
1033:	10	6	10	4	2	8	8	13
1041:	6	9	11	9	6	6	4	3
1049:	8	12	9	8	4	5	7	3
1057:	8	8	9	11	10	9	11	12
1065:	9	8	2	12	6	5	9	3
1073:	3	12	13	11	12	4	9	11
1081:	10	4	9	7	5	6	10	8
1089:	7	7	8	11	4	7	5	12
1097:	10	3	9	10	9	7	8	8
1105:	8	10	10	5	5	3	6	10
1113:	4	11	12	11	14	12	10	28
1121:	33	22	10	12	7	7	9	8
1129:	13	2	9	7	9	6	8	12
1137:	10	9	8	11	9	11	7	6
1145:	8	12	5	5	8	5	6	5
1153:	8	3	10	8	13	8	7	8
1161:	7	10	10	13	8	11	8	8
1169:	9	11	10	6	8	7	11	12
1177:	10	7	11	6	8	16	7	7
1185:	10	5	13	16	9	5	13	8
1193:	13	7	10	10	8	10	6	12
1201:	5	14	6	9	12	6	14	17
1209:	9	11	16	5	7	4	9	8
1217:	9	10	11	12	7	7	9	12
1225:	9	13	12	12	13	16	10	11

1233:	9	5	11	11	12	21	18	11

Sample Title: HTC-A08-BKGD02-1218-01

Channel								
1241:	10	5	9	10	13	8	5	4
1249:	18	4	6	7	7	4	6	5
1257:	5	9	4	4	10	6	7	7
1265:	6	3	2	8	6	4	5	13
1273:	6	5	6	7	5	6	11	11
1281:	6	11	3	6	4	3	6	6
1289:	6	3	8	6	2	6	3	8
1297:	3	5	5	9	7	7	7	6
1305:	2	3	5	4	3	2	5	5
1313:	5	4	3	4	5	3	3	9
1321:	3	4	3	4	2	2	9	13
1329:	2	3	3	3	7	2	4	1
1337:	1	3	3	9	4	2	0	3
1345:	5	1	6	5	3	3	0	2
1353:	5	5	7	4	3	6	3	2
1361:	4	4	7	3	3	3	2	3
1369:	4	5	4	5	1	2	4	3
1377:	5	9	6	1	2	3	6	1
1385:	3	6	3	2	2	2	5	2
1393:	3	8	1	4	4	4	1	1
1401:	2	3	1	5	3	3	2	6
1409:	6	4	4	5	2	1	4	3
1417:	2	4	0	3	5	2	3	5
1425:	1	3	0	2	5	6	4	3
1433:	3	6	0	3	1	2	0	2
1441:	4	2	5	5	1	0	1	1
1449:	4	2	1	7	5	2	2	4
1457:	4	8	65	189	269	164	31	3
1465:	1	2	1	5	1	1	1	3
1473:	1	0	2	1	1	1	1	1
1481:	0	2	1	0	1	2	4	2
1489:	1	1	1	2	4	2	2	1
1497:	6	3	4	4	1	4	2	4
1505:	0	3	0	3	3	2	2	4
1513:	3	0	0	2	0	1	1	1
1521:	2	1	0	6	3	2	2	1
1529:	2	0	0	5	0	3	4	1
1537:	3	1	5	1	3	2	3	2
1545:	1	0	3	2	0	3	1	1
1553:	2	1	2	0	2	1	3	3
1561:	2	2	2	0	1	2	0	0
1569:	3	2	1	0	0	1	0	1
1577:	0	0	2	1	8	2	4	1
1585:	2	1	5	10	9	6	1	7
1593:	3	4	0	1	0	0	4	4
1601:	2	2	3	4	1	0	0	1
1609:	3	1	1	1	0	2	2	1
1617:	1	2	2	3	2	5	1	3
1625:	2	2	1	1	1	2	7	1
1633:	2	4	0	3	1	2	1	1
1641:	1	0	0	2	1	2	1	1
1649:	1	1	1	0	2	3	1	0
1657:	1	1	0	0	4	1	2	1

1665:	2	0	0	1	2	3	0	0

Sample Title: HTC-A08-BKGD02-1218-01

Channel								
1673:	0	0	1	1	2	1	1	1
1681:	0	1	1	0	2	1	1	0
1689:	0	1	1	1	1	0	1	2
1697:	0	3	0	1	0	2	0	0
1705:	1	0	1	1	0	0	0	0
1713:	2	1	0	2	1	1	1	0
1721:	1	1	1	1	1	1	2	3
1729:	5	2	1	0	1	0	0	4
1737:	1	0	0	1	0	1	1	0
1745:	0	1	0	1	1	3	1	1
1753:	2	0	2	2	0	1	2	1
1761:	2	2	6	13	14	11	4	2
1769:	3	1	2	0	0	1	1	2
1777:	1	0	0	2	3	0	2	4
1785:	2	2	0	1	0	1	0	3
1793:	0	2	1	0	2	1	0	1
1801:	1	2	1	3	1	0	2	1
1809:	1	1	1	2	1	0	0	0
1817:	1	2	1	2	1	3	1	2
1825:	2	0	1	0	1	2	0	0
1833:	1	1	2	0	1	1	0	1
1841:	0	2	1	0	5	3	2	4
1849:	3	2	0	0	1	0	1	2
1857:	0	0	2	0	1	0	0	1
1865:	1	0	1	1	1	1	1	0
1873:	0	0	0	0	1	1	1	1
1881:	3	1	0	0	0	1	2	0
1889:	0	2	1	2	0	1	0	2
1897:	1	0	2	1	0	1	1	0
1905:	0	0	1	2	0	1	1	0
1913:	1	0	2	1	2	0	0	1
1921:	1	0	0	0	1	2	0	0
1929:	2	0	0	2	0	2	0	3
1937:	1	0	1	0	0	1	0	1
1945:	0	1	1	3	0	1	0	0
1953:	3	2	1	1	3	1	1	1
1961:	2	1	1	0	2	0	1	0
1969:	2	0	1	2	2	2	1	0
1977:	0	1	0	0	2	2	0	0
1985:	2	1	4	0	1	1	0	1
1993:	0	1	1	1	0	0	2	0
2001:	0	1	1	0	0	0	1	0
2009:	1	3	0	0	0	2	0	1
2017:	0	1	1	0	0	0	0	2
2025:	0	1	2	1	2	0	2	0
2033:	0	0	0	0	0	0	0	2
2041:	1	0	0	1	0	1	0	0
2049:	0	0	2	1	0	0	1	2
2057:	0	0	1	1	0	2	0	0
2065:	0	0	1	0	0	2	1	0
2073:	1	0	1	1	2	0	0	0
2081:	1	0	0	1	0	0	3	2
2089:	2	2	0	2	2	0	1	2

2097:	0	2	0	2	1	5	4	3

Sample Title: HTC-A08-BKGD02-1218-01

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

2529:	0	0	0	0	0	1	1	0

Sample Title: HTC-A08-BKGD02-1218-01

Channel								
2537:	0	0	1	0	1	0	2	0
2545:	1	1	0	0	0	0	0	0
2553:	1	0	1	0	0	0	0	0
2561:	1	0	1	0	0	0	0	1
2569:	0	0	0	1	1	0	0	0
2577:	2	0	0	1	0	0	0	0
2585:	0	1	0	0	0	0	1	0
2593:	0	0	0	0	0	0	0	0
2601:	0	0	1	0	0	1	0	0
2609:	0	0	0	4	8	23	21	11
2617:	2	0	0	0	1	0	0	1
2625:	0	0	0	0	0	1	1	0
2633:	0	0	0	1	0	0	2	0
2641:	0	0	0	1	0	0	0	0
2649:	0	0	0	0	0	0	0	0
2657:	0	1	0	0	0	0	1	0
2665:	0	1	0	1	0	0	0	1
2673:	0	0	0	0	1	1	0	0
2681:	0	0	0	0	1	0	0	1
2689:	0	0	1	1	0	0	1	0
2697:	0	1	0	0	1	0	0	0
2705:	0	0	1	1	0	0	1	0
2713:	0	0	0	1	0	0	1	1
2721:	0	0	0	0	0	0	0	0
2729:	1	0	0	0	0	1	0	0
2737:	1	0	0	0	0	0	1	0
2745:	0	0	1	1	0	1	0	0
2753:	0	0	1	1	0	0	0	0
2761:	0	0	0	0	1	0	1	0
2769:	1	0	0	1	0	0	0	0
2777:	0	0	1	0	1	1	0	0
2785:	0	0	1	0	0	1	1	1
2793:	0	0	0	0	1	0	0	0
2801:	0	0	0	1	1	0	0	0
2809:	0	0	0	0	1	0	0	0
2817:	0	0	0	1	0	0	0	0
2825:	0	0	1	0	0	1	0	0
2833:	0	0	0	0	0	0	1	0
2841:	2	0	0	0	0	0	0	0
2849:	0	0	0	0	0	1	1	0
2857:	0	1	0	0	0	0	0	0
2865:	0	0	1	0	1	0	1	1
2873:	0	0	1	0	0	0	0	0
2881:	0	0	0	0	0	1	0	0
2889:	1	0	0	0	0	0	0	0
2897:	0	0	0	0	0	0	0	0
2905:	0	0	0	1	0	0	0	0
2913:	0	0	0	1	0	0	0	0
2921:	0	1	0	0	1	0	0	0
2929:	0	0	0	1	0	0	0	1
2937:	0	0	0	1	0	0	0	0
2945:	0	0	0	0	1	0	0	0
2953:	0	0	0	0	0	0	0	0

2961:	1	0	0	0	0	0	1	0

Sample Title: HTC-A08-BKGD02-1218-01

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

Sample Title: HTC-A08-BKGD02-1218-01

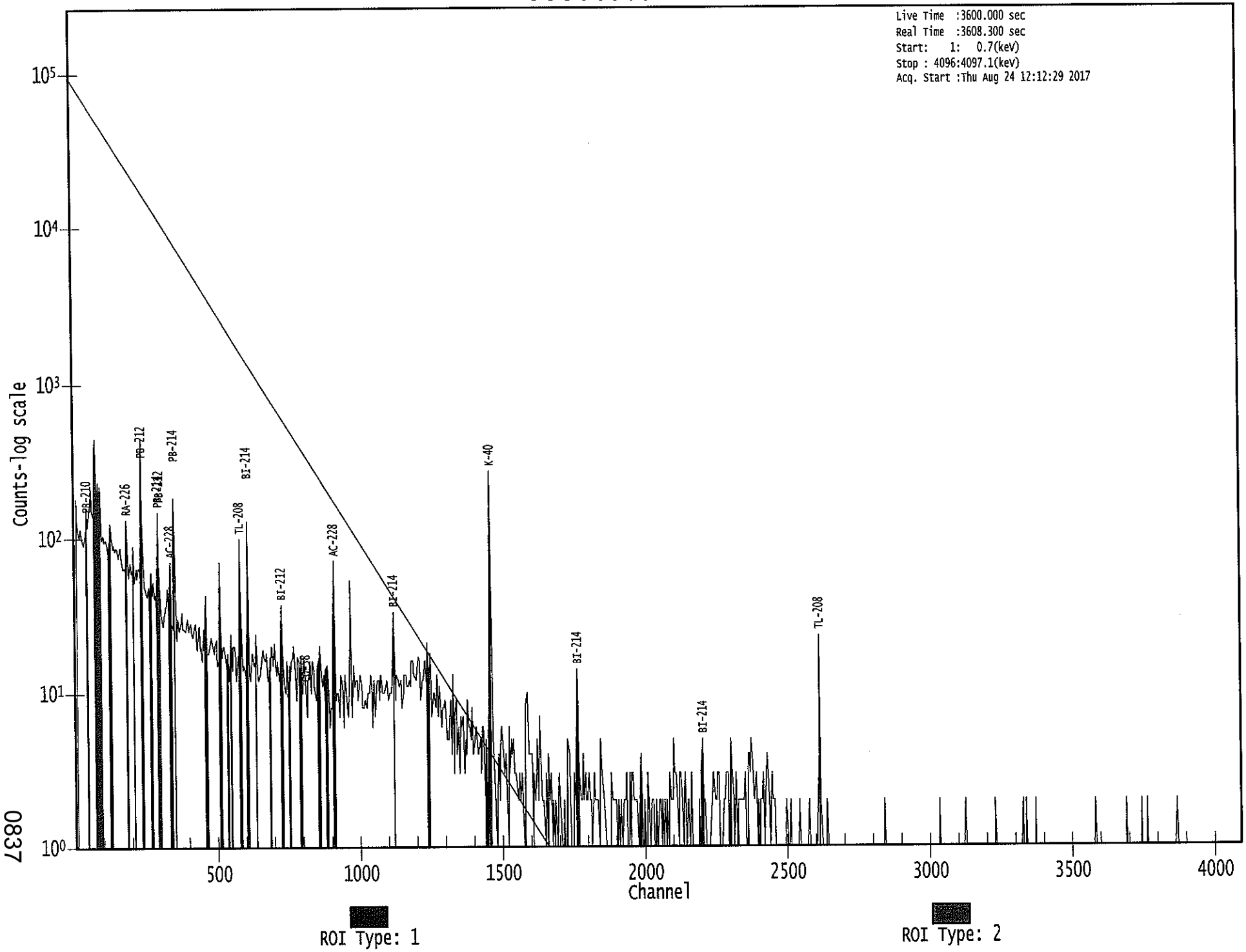
Channel								
3401:	0	0	0	0	1	0	0	0
3409:	0	0	0	0	0	0	0	0
3417:	0	0	0	0	0	0	0	0
3425:	0	0	0	0	0	0	0	0
3433:	1	0	0	0	0	0	0	0
3441:	0	0	0	0	0	0	0	0
3449:	0	1	1	0	0	0	1	0
3457:	0	1	0	1	0	0	1	0
3465:	0	0	0	0	0	0	0	1
3473:	0	0	0	0	0	0	0	0
3481:	0	0	0	0	0	0	0	1
3489:	1	0	0	0	0	0	0	0
3497:	0	0	0	0	0	0	0	0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

3825:	0	0	0	0	0	0	0	0

Sample Title: HTC-A08-BKGD02-1218-01

Channel								
3833:	0	0	0	0	0	0	0	0
3841:	1	0	1	0	0	0	0	0
3849:	0	0	1	0	0	0	0	0
3857:	0	0	0	0	0	1	0	0
3865:	0	0	0	2	0	0	1	0
3873:	0	0	0	0	0	1	0	0
3881:	0	0	0	0	0	0	0	0
3889:	0	0	0	0	0	0	0	0
3897:	0	0	0	0	0	0	0	0
3905:	0	0	0	0	1	0	0	0
3913:	0	0	0	0	0	0	0	0
3921:	0	0	0	0	0	1	1	0
3929:	0	0	0	0	0	0	0	0
3937:	0	0	0	0	0	0	1	0
3945:	0	0	1	0	0	0	0	0
3953:	0	0	1	0	1	1	0	0
3961:	0	0	0	0	0	0	0	1
3969:	0	1	0	0	0	0	0	0
3977:	0	0	0	0	0	1	0	1
3985:	0	0	0	0	0	0	0	1
3993:	0	0	0	1	0	0	0	0
4001:	0	0	0	0	0	0	0	0
4009:	0	0	0	0	0	1	0	0
4017:	0	0	0	0	1	0	0	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	1
4049:	0	0	0	0	0	0	0	0
4057:	0	0	0	0	0	0	0	0
4065:	0	0	0	0	0	0	0	0
4073:	0	0	0	0	0	0	0	0
4081:	0	0	0	0	0	0	0	0
4089:	0	0	1	0	0	0	0	0

0000055902.CNF



0837

Apex-Gamma

8/24

Analysis Report for 1707091-16

HTC-A08-BKGD02-1824-01

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 1707091-16
Sample Description	: HTC-A08-BKGD02-1824-01
Sample Type	: SOIL
Sample Size	: 6.726E+02 grams
Facility	: Countroom
Sample Taken On	: 5/15/2017 12:59:14PM
Acquisition Started	: 8/24/2017 12:14:34PM
Procedure	: GAS-1602 pCi
Operator	: Administrator
Detector Name	: GE1
Geometry	: GAS-1602
Live Time	: 3600.0 seconds
Real Time	: 3601.6 seconds
Dead Time	: 0.04 %
Peak Locate Threshold	: 2.50
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 19 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 1/14/2017
Efficiency Calibration Used Done On	: 1/14/2017
Efficiency Calibration Description	:
Sample Number	: 55903

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

Analysis Report for 1707091-16

HTC-A08-BKGD02-1824-01

PEAK LOCATE REPORT

Peak Locate Performed on : 8/24/2017 1:14:41PM
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	43.82	44.45	0.0000	0.00
2	46.28	46.91	0.0000	0.00
3	73.82	74.42	0.0000	0.00
4	76.93	77.52	0.0000	0.00
5	90.42	91.00	0.0000	0.00
6	127.60	128.13	0.0000	0.00
7	185.47	185.95	0.0000	0.00
8	209.53	209.98	0.0000	0.00
9	238.66	239.08	0.0000	0.00
10	241.73	242.15	0.0000	0.00
11	269.93	270.32	0.0000	0.00
12	278.81	279.20	0.0000	0.00
13	295.16	295.53	0.0000	0.00
14	299.99	300.36	0.0000	0.00
15	338.42	338.74	0.0000	0.00
16	342.04	342.36	0.0000	0.00
17	351.87	352.18	0.0000	0.00
18	462.23	462.43	0.0000	0.00
19	510.78	510.93	0.0000	0.00
20	560.86	560.95	0.0000	0.00
21	583.53	583.61	0.0000	0.00
22	609.31	609.36	0.0000	0.00
23	727.66	727.59	0.0000	0.00
24	764.94	764.84	0.0000	0.00
25	769.01	768.90	0.0000	0.00
26	795.32	795.18	0.0000	0.00
27	861.11	860.90	0.0000	0.00
28	904.71	904.47	0.0000	0.00
29	911.50	911.25	0.0000	0.00
30	965.10	964.80	0.0000	0.00
31	969.27	968.96	0.0000	0.00
32	1049.76	1049.37	0.0000	0.00
33	1120.58	1120.12	0.0000	0.00
34	1407.43	1406.69	0.0000	0.00
35	1461.49	1460.69	0.0000	0.00
36	1466.09	1465.29	0.0000	0.00
37	1588.84	1587.92	0.0000	0.00
38	1622.09	1621.14	0.0000	0.00
39	1646.98	1646.00	0.0000	0.00
40	1668.45	1667.45	0.0000	0.00
41	1729.67	1728.61	0.0000	0.00
42	1752.15	1751.07	0.0000	0.00

Analysis Report for 1707091-16

HTC-A08-BKGD02-1824-01

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
43	1765.24	1764.15	0.0000	0.00
44	1783.36	1782.25	0.0000	0.00
45	1824.16	1823.01	0.0000	0.00
46	2037.36	2036.00	0.0000	0.00
47	2103.61	2102.19	0.0000	0.00
48	2113.13	2111.70	0.0000	0.00
49	2183.38	2181.88	0.0000	0.00
50	2204.51	2202.99	0.0000	0.00
51	2360.27	2358.60	0.0000	0.00
52	2406.21	2404.50	0.0000	0.00
53	2459.29	2457.53	0.0000	0.00
54	2610.75	2608.85	0.0000	0.00
55	2615.21	2613.30	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1707091-16

HTC-A08-BKGD02-1824-01

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 8/24/2017 1:14:41PM

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	43.82	43 -	49	44.45	3.40E+01	32.94	3.39E+02	1.42
m	2	46.28	43 -	49	46.91	1.35E+02	67.16	9.05E+02	1.55
M	3	73.82	71 -	81	74.42	2.57E+02	123.96	2.20E+03	2.91
m	4	76.93	71 -	81	77.52	1.01E+03	130.18	2.12E+03	2.39
m	5	90.42	82 -	97	91.00	1.19E+02	84.38	1.19E+03	1.52
	6	127.60	124 -	131	128.13	1.18E+02	98.33	1.53E+03	4.37
	7	185.47	181 -	190	185.95	2.47E+02	106.29	1.48E+03	1.92
	8	209.53	206 -	213	209.98	8.53E+01	82.66	1.08E+03	1.77
M	9	238.66	234 -	250	239.08	1.08E+03	81.48	5.69E+02	1.75
m	10	241.73	234 -	250	242.15	2.98E+02	93.48	6.90E+02	2.21
	11	269.93	267 -	274	270.32	7.77E+01	70.31	7.73E+02	1.83
	12	278.81	276 -	283	279.20	8.14E+01	60.79	5.49E+02	4.17
	13	295.16	291 -	298	295.53	3.38E+02	69.86	5.88E+02	1.82
	14	299.99	299 -	304	300.36	6.58E+01	49.50	4.36E+02	1.61
M	15	338.42	335 -	345	338.74	2.54E+02	47.63	3.06E+02	1.76
m	16	342.04	335 -	345	342.36	4.78E+01	51.16	3.55E+02	2.09
	17	351.87	347 -	357	352.18	5.47E+02	89.07	7.71E+02	1.98
	18	462.23	456 -	467	462.43	1.30E+02	61.09	4.00E+02	2.24
	19	510.78	507 -	515	510.93	2.20E+02	54.16	3.17E+02	1.92
	20	560.86	559 -	564	560.95	3.14E+01	26.81	1.21E+02	1.48
	21	583.53	579 -	589	583.61	3.57E+02	66.61	3.99E+02	2.15
	22	609.31	603 -	612	609.36	4.21E+02	62.64	3.20E+02	1.93
	23	727.66	723 -	732	727.59	1.12E+02	44.17	2.14E+02	2.03
M	24	764.94	762 -	775	764.84	2.85E+01	21.90	8.47E+01	3.78
m	25	769.01	762 -	775	768.90	4.65E+01	36.32	1.30E+02	2.84
	26	795.32	791 -	798	795.18	5.22E+01	31.50	1.28E+02	1.78
	27	861.11	858 -	866	860.90	5.00E+01	37.01	1.80E+02	2.26
	28	904.71	901 -	907	904.47	2.10E+01	24.63	9.60E+01	3.05
	29	911.50	907 -	915	911.25	2.42E+02	47.23	1.95E+02	2.02
M	30	965.10	959 -	973	964.80	5.29E+01	31.34	1.40E+02	2.22
m	31	969.27	959 -	973	968.96	1.30E+02	36.08	1.40E+02	2.22
	32	1049.76	1046 -	1052	1049.37	2.05E+01	24.14	9.10E+01	4.56
	33	1120.58	1115 -	1123	1120.12	1.07E+02	39.21	1.69E+02	2.06
	34	1407.43	1404 -	1410	1406.69	1.36E+01	17.41	4.48E+01	1.72
M	35	1461.49	1455 -	1469	1460.69	1.19E+03	70.71	4.90E+01	2.30
m	36	1466.09	1455 -	1469	1465.29	3.88E+01	57.10	5.60E+01	2.65
	37	1588.84	1582 -	1592	1587.92	1.87E+01	22.99	6.06E+01	2.22
	38	1622.09	1615 -	1624	1621.14	1.62E+01	15.52	2.56E+01	3.65
	39	1646.98	1644 -	1648	1646.00	8.00E+00	5.66	0.00E+00	2.00
	40	1668.45	1664 -	1671	1667.45	1.08E+01	11.66	1.44E+01	3.28

Analysis Report for 1707091-16

HTC-A08-BKGD02-1824-01

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
	41	1729.67	1725 -	1732	1728.61	2.57E+01	14.14	1.65E+01	1.36
	42	1752.15	1749 -	1754	1751.07	7.00E+00	7.35	4.00E+00	1.77
	43	1765.24	1759 -	1770	1764.15	7.34E+01	26.08	4.93E+01	2.33
	44	1783.36	1778 -	1785	1782.25	9.00E+00	9.17	8.00E+00	2.11
	45	1824.16	1820 -	1825	1823.01	6.63E+00	6.40	2.75E+00	1.81
	46	2037.36	2032 -	2038	2036.00	5.00E+00	4.47	0.00E+00	2.98
	47	2103.61	2097 -	2106	2102.19	1.93E+01	14.70	1.93E+01	2.43
	48	2113.13	2108 -	2114	2111.70	9.27E+00	10.44	1.15E+01	2.84
	49	2183.38	2179 -	2185	2181.88	9.00E+00	7.50	4.00E+00	2.07
	50	2204.51	2199 -	2206	2202.99	2.80E+01	11.66	3.97E+00	1.55
	51	2360.27	2355 -	2363	2358.60	1.35E+01	10.61	9.00E+00	4.57
	52	2406.21	2402 -	2406	2404.50	5.50E+00	6.67	5.00E+00	1.01
	53	2459.29	2453 -	2462	2457.53	1.50E+01	7.75	0.00E+00	2.48
M	54	2610.75	2609 -	2619	2608.85	1.04E+01	0.50	0.00E+00	3.64
m	55	2615.21	2609 -	2619	2613.30	1.39E+02	24.82	4.38E+00	2.93

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 : 8/24/2017 1:14:41PM

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	43.82	43 -	49	3.40E+01	32.94	3.39E+02	3.03E+01
m	2	46.28	43 -	49	1.35E+02	67.16	9.05E+02	4.94E+01
M	3	73.82	71 -	81	2.57E+02	123.96	2.20E+03	7.71E+01
m	4	76.93	71 -	81	1.01E+03	130.18	2.12E+03	7.57E+01
m	5	90.42	82 -	97	1.19E+02	84.38	1.19E+03	5.67E+01
	6	127.60	124 -	131	1.18E+02	98.33	1.53E+03	7.88E+01
	7	185.47	181 -	190	2.47E+02	106.29	1.48E+03	8.35E+01
	8	209.53	206 -	213	8.53E+01	82.66	1.08E+03	6.62E+01
M	9	238.66	234 -	250	1.08E+03	81.48	5.69E+02	3.92E+01
m	10	241.73	234 -	250	2.98E+02	93.48	6.90E+02	4.32E+01
	11	269.93	267 -	274	7.77E+01	70.31	7.73E+02	5.60E+01
	12	278.81	276 -	283	8.14E+01	60.79	5.49E+02	4.77E+01
	13	295.16	291 -	298	3.38E+02	69.86	5.88E+02	4.88E+01

Analysis Report for 1707091-16

HTC-A08-BKGD02-1824-01

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	14	299.99	299 -	304	6.58E+01	49.50	4.36E+02	3.84E+01
M	15	338.42	335 -	345	2.54E+02	47.63	3.06E+02	2.87E+01
m	16	342.04	335 -	345	4.78E+01	51.16	3.55E+02	3.10E+01
	17	351.87	347 -	357	5.47E+02	89.07	7.71E+02	6.23E+01
	18	462.23	456 -	467	1.30E+02	61.09	4.00E+02	4.66E+01
	19	510.78	507 -	515	2.20E+02	54.16	3.17E+02	3.72E+01
	20	560.86	559 -	564	3.14E+01	26.81	1.21E+02	2.00E+01
	21	583.53	579 -	589	3.57E+02	66.61	3.99E+02	4.51E+01
	22	609.31	603 -	612	4.21E+02	62.64	3.20E+02	3.89E+01
	23	727.66	723 -	732	1.12E+02	44.17	2.14E+02	3.19E+01
M	24	764.94	762 -	775	2.85E+01	21.90	8.47E+01	1.51E+01
m	25	769.01	762 -	775	4.65E+01	36.32	1.30E+02	1.87E+01
	26	795.32	791 -	798	5.22E+01	31.50	1.28E+02	2.30E+01
	27	861.11	858 -	866	5.00E+01	37.01	1.80E+02	2.81E+01
	28	904.71	901 -	907	2.10E+01	24.63	9.60E+01	1.88E+01
	29	911.50	907 -	915	2.42E+02	47.23	1.95E+02	2.92E+01
M	30	965.10	959 -	973	5.29E+01	31.34	1.40E+02	1.95E+01
m	31	969.27	959 -	973	1.30E+02	36.08	1.40E+02	1.95E+01
	32	1049.76	1046 -	1052	2.05E+01	24.14	9.10E+01	1.84E+01
	33	1120.58	1115 -	1123	1.07E+02	39.21	1.69E+02	2.74E+01
	34	1407.43	1404 -	1410	1.36E+01	17.41	4.48E+01	1.30E+01
M	35	1461.49	1455 -	1469	1.19E+03	70.71	4.90E+01	1.15E+01
m	36	1466.09	1455 -	1469	3.88E+01	57.10	5.60E+01	1.23E+01
	37	1588.84	1582 -	1592	1.87E+01	22.99	6.06E+01	1.75E+01
	38	1622.09	1615 -	1624	1.62E+01	15.52	2.56E+01	1.09E+01
	39	1646.98	1644 -	1648	8.00E+00	5.66	0.00E+00	0.00E+00
	40	1668.45	1664 -	1671	1.08E+01	11.66	1.44E+01	7.92E+00
	41	1729.67	1725 -	1732	2.57E+01	14.14	1.65E+01	8.10E+00
	42	1752.15	1749 -	1754	7.00E+00	7.35	4.00E+00	4.19E+00
	43	1765.24	1759 -	1770	7.34E+01	26.08	4.93E+01	1.62E+01
	44	1783.36	1778 -	1785	9.00E+00	9.17	8.00E+00	5.70E+00
	45	1824.16	1820 -	1825	6.63E+00	6.40	2.75E+00	3.13E+00
	46	2037.36	2032 -	2038	5.00E+00	4.47	0.00E+00	0.00E+00
	47	2103.61	2097 -	2106	1.93E+01	14.70	1.93E+01	9.68E+00
	48	2113.13	2108 -	2114	9.27E+00	10.44	1.15E+01	6.97E+00
	49	2183.38	2179 -	2185	9.00E+00	7.50	4.00E+00	3.70E+00
	50	2204.51	2199 -	2206	2.80E+01	11.66	3.97E+00	4.02E+00
	51	2360.27	2355 -	2363	1.35E+01	10.61	9.00E+00	6.29E+00
	52	2406.21	2402 -	2406	5.50E+00	6.67	5.00E+00	3.90E+00
	53	2459.29	2453 -	2462	1.50E+01	7.75	0.00E+00	0.00E+00
M	54	2610.75	2609 -	2619	1.04E+01	0.50	0.00E+00	0.00E+00
m	55	2615.21	2609 -	2619	1.39E+02	24.82	4.38E+00	3.44E+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 1707091-16

HTC-A08-BKGD02-1824-01

PEAK WITH NID REPORT

Peak Analysis Performed on : 8/24/2017 1:14:41PM

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	43.82	43 -	49	44.45	3.40E+01	32.94	3.39E+02	.....
m	2	46.28	43 -	49	46.91	1.35E+02	67.16	9.05E+02	PB-210
M	3	73.82	71 -	81	74.42	2.57E+02	123.96	2.20E+03	AM-243
m	4	76.93	71 -	81	77.52	1.01E+03	130.18	2.12E+03	.....
m	5	90.42	82 -	97	91.00	1.19E+02	84.38	1.19E+03	ND-147
	6	127.60	124 -	131	128.13	1.18E+02	98.33	1.53E+03	.....
	7	185.47	181 -	190	185.95	2.47E+02	106.29	1.48E+03	RA-226
	8	209.53	206 -	213	209.98	8.53E+01	82.66	1.08E+03	CM-243
									GA-67
M	9	238.66	234 -	250	239.08	1.08E+03	81.48	5.69E+02	PB-212
m	10	241.73	234 -	250	242.15	2.98E+02	93.48	6.90E+02	RA-224
	11	269.93	267 -	274	270.32	7.77E+01	70.31	7.73E+02	.....
	12	278.81	276 -	283	279.20	8.14E+01	60.79	5.49E+02	HG-203
									SE-75
	13	295.16	291 -	298	295.53	3.38E+02	69.86	5.88E+02	PB-214
	14	299.99	299 -	304	300.36	6.58E+01	49.50	4.36E+02	BI-210M
									PB-212
									GA-67
M	15	338.42	335 -	345	338.74	2.54E+02	47.63	3.06E+02	AC-228
m	16	342.04	335 -	345	342.36	4.78E+01	51.16	3.55E+02	.....
	17	351.87	347 -	357	352.18	5.47E+02	89.07	7.71E+02	PB-214
	18	462.23	456 -	467	462.43	1.30E+02	61.09	4.00E+02	.....
	19	510.78	507 -	515	510.93	2.20E+02	54.16	3.17E+02	.....
	20	560.86	559 -	564	560.95	3.14E+01	26.81	1.21E+02	.....
	21	583.53	579 -	589	583.61	3.57E+02	66.61	3.99E+02	TL-208
	22	609.31	603 -	612	609.36	4.21E+02	62.64	3.20E+02	BI-214
	23	727.66	723 -	732	727.59	1.12E+02	44.17	2.14E+02	BI-212
M	24	764.94	762 -	775	764.84	2.85E+01	21.90	8.47E+01	NB-95
m	25	769.01	762 -	775	768.90	4.65E+01	36.32	1.30E+02	.....
	26	795.32	791 -	798	795.18	5.22E+01	31.50	1.28E+02	CS-134
	27	861.11	858 -	866	860.90	5.00E+01	37.01	1.80E+02	TL-208
	28	904.71	901 -	907	904.47	2.10E+01	24.63	9.60E+01	.....
	29	911.50	907 -	915	911.25	2.42E+02	47.23	1.95E+02	TL-204
									AC-228
M	30	965.10	959 -	973	964.80	5.29E+01	31.34	1.40E+02	.....
m	31	969.27	959 -	973	968.96	1.30E+02	36.08	1.40E+02	AC-228
	32	1049.76	1046 -	1052	1049.37	2.05E+01	24.14	9.10E+01	.....
	33	1120.58	1115 -	1123	1120.12	1.07E+02	39.21	1.69E+02	SC-46

Analysis Report for 1707091-16

HTC-A08-BKGD02-1824-01

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
									BI-214
									TA-182
	34	1407.43	1404 -	1410	1406.69	1.36E+01	17.41	4.48E+01	EU-152
M	35	1461.49	1455 -	1469	1460.69	1.19E+03	70.71	4.90E+01	K-40
m	36	1466.09	1455 -	1469	1465.29	3.88E+01	57.10	5.60E+01	.....
	37	1588.84	1582 -	1592	1587.92	1.87E+01	22.99	6.06E+01	.....
	38	1622.09	1615 -	1624	1621.14	1.62E+01	15.52	2.56E+01	.....
	39	1646.98	1644 -	1648	1646.00	8.00E+00	5.66	0.00E+00	.....
	40	1668.45	1664 -	1671	1667.45	1.08E+01	11.66	1.44E+01	.....
	41	1729.67	1725 -	1732	1728.61	2.57E+01	14.14	1.65E+01	.....
	42	1752.15	1749 -	1754	1751.07	7.00E+00	7.35	4.00E+00	.....
	43	1765.24	1759 -	1770	1764.15	7.34E+01	26.08	4.93E+01	BI-214
	44	1783.36	1778 -	1785	1782.25	9.00E+00	9.17	8.00E+00	.....
	45	1824.16	1820 -	1825	1823.01	6.63E+00	6.40	2.75E+00	.....
	46	2037.36	2032 -	2038	2036.00	5.00E+00	4.47	0.00E+00	.....
	47	2103.61	2097 -	2106	2102.19	1.93E+01	14.70	1.93E+01	.....
	48	2113.13	2108 -	2114	2111.70	9.27E+00	10.44	1.15E+01	.....
	49	2183.38	2179 -	2185	2181.88	9.00E+00	7.50	4.00E+00	.....
	50	2204.51	2199 -	2206	2202.99	2.80E+01	11.66	3.97E+00	BI-214
	51	2360.27	2355 -	2363	2358.60	1.35E+01	10.61	9.00E+00	.....
	52	2406.21	2402 -	2406	2404.50	5.50E+00	6.67	5.00E+00	.....
	53	2459.29	2453 -	2462	2457.53	1.50E+01	7.75	0.00E+00	.....
M	54	2610.75	2609 -	2619	2608.85	1.04E+01	0.50	0.00E+00	.....
m	55	2615.21	2609 -	2619	2613.30	1.39E+02	24.82	4.38E+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 : 8/24/2017 1:14:41PM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
M	1	43.82	3.40E+01	32.94	2.40E-02	2.22E-03
m	2	46.28	1.35E+02	67.16	2.46E-02	2.22E-03
M	3	73.82	2.57E+02	123.96	2.75E-02	2.37E-03
m	4	76.93	1.01E+03	130.18	2.75E-02	2.40E-03
m	5	90.42	1.19E+02	84.38	2.73E-02	2.48E-03
	6	127.60	1.18E+02	98.33	2.54E-02	1.94E-03

Analysis Report for 1707091-16

HTC-A08-BKGD02-1824-01

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	7	185.47	2.47E+02	106.29	2.17E-02	1.68E-03
	8	209.53	8.53E+01	82.66	2.04E-02	1.61E-03
M	9	238.66	1.08E+03	81.48	1.89E-02	1.53E-03
m	10	241.73	2.98E+02	93.48	1.87E-02	1.52E-03
	11	269.93	7.77E+01	70.31	1.74E-02	1.44E-03
	12	278.81	8.14E+01	60.79	1.71E-02	1.41E-03
	13	295.16	3.38E+02	69.86	1.64E-02	1.37E-03
	14	299.99	6.58E+01	49.50	1.63E-02	1.36E-03
M	15	338.42	2.54E+02	47.63	1.50E-02	1.27E-03
m	16	342.04	4.78E+01	51.16	1.48E-02	1.26E-03
	17	351.87	5.47E+02	89.07	1.45E-02	1.24E-03
	18	462.23	1.30E+02	61.09	1.19E-02	1.10E-03
	19	510.78	2.20E+02	54.16	1.10E-02	1.07E-03
	20	560.86	3.14E+01	26.81	1.03E-02	1.04E-03
	21	583.53	3.57E+02	66.61	9.96E-03	1.02E-03
	22	609.31	4.21E+02	62.64	9.63E-03	1.01E-03
	23	727.66	1.12E+02	44.17	8.41E-03	8.67E-04
M	24	764.94	2.85E+01	21.90	8.09E-03	8.08E-04
m	25	769.01	4.65E+01	36.32	8.06E-03	8.01E-04
	26	795.32	5.22E+01	31.50	7.86E-03	7.60E-04
	27	861.11	5.00E+01	37.01	7.40E-03	6.55E-04
	28	904.71	2.10E+01	24.63	7.12E-03	5.94E-04
	29	911.50	2.42E+02	47.23	7.08E-03	5.91E-04
M	30	965.10	5.29E+01	31.34	6.79E-03	5.71E-04
m	31	969.27	1.30E+02	36.08	6.76E-03	5.69E-04
	32	1049.76	2.05E+01	24.14	6.37E-03	5.38E-04
	33	1120.58	1.07E+02	39.21	6.07E-03	5.11E-04
	34	1407.43	1.36E+01	17.41	5.14E-03	4.37E-04
M	35	1461.49	1.19E+03	70.71	5.00E-03	4.25E-04
m	36	1466.09	3.88E+01	57.10	4.99E-03	4.24E-04
	37	1588.84	1.87E+01	22.99	4.71E-03	3.95E-04
	38	1622.09	1.62E+01	15.52	4.64E-03	3.87E-04
	39	1646.98	8.00E+00	5.66	4.59E-03	3.82E-04
	40	1668.45	1.08E+01	11.66	4.55E-03	3.77E-04
	41	1729.67	2.57E+01	14.14	4.44E-03	3.62E-04
	42	1752.15	7.00E+00	7.35	4.40E-03	3.57E-04
	43	1765.24	7.34E+01	26.08	4.37E-03	3.54E-04
	44	1783.36	9.00E+00	9.17	4.34E-03	3.50E-04
	45	1824.16	6.63E+00	6.40	4.27E-03	3.41E-04
	46	2037.36	5.00E+00	4.47	3.95E-03	3.38E-04
	47	2103.61	1.93E+01	14.70	3.86E-03	3.38E-04
	48	2113.13	9.27E+00	10.44	3.85E-03	3.38E-04
	49	2183.38	9.00E+00	7.50	3.76E-03	3.38E-04
	50	2204.51	2.80E+01	11.66	3.74E-03	3.38E-04
	51	2360.27	1.35E+01	10.61	3.56E-03	3.38E-04
	52	2406.21	5.50E+00	6.67	3.51E-03	3.38E-04
	53	2459.29	1.50E+01	7.75	3.46E-03	3.38E-04
M	54	2610.75	1.04E+01	0.50	3.31E-03	3.38E-04
m	55	2615.21	1.39E+02	24.82	3.31E-03	3.38E-04

Analysis Report for 1707091-16

HTC-A08-BKGD02-1824-01

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 : 8/24/2017 1:14:41PM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000055573.CNF

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
M	1	43.82	3.40E+01	32.94			3.40E+01	3.29E+01
m	2	46.28	1.35E+02	67.16	3.67E+01	8.40E+00	9.78E+01	6.77E+01
M	3	73.82	2.57E+02	123.96			2.57E+02	1.24E+02
m	4	76.93	1.01E+03	130.18	7.20E+00	1.47E+00	1.00E+03	1.30E+02
m	5	90.42	1.19E+02	84.38			1.19E+02	8.44E+01
	6	127.60	1.18E+02	98.33			1.18E+02	9.83E+01
	7	185.47	2.47E+02	106.29	5.22E+01	7.59E+00	1.95E+02	1.07E+02
	8	209.53	8.53E+01	82.66			8.53E+01	8.27E+01
M	9	238.66	1.08E+03	81.48	2.13E+01	6.33E+00	1.06E+03	8.17E+01
m	10	241.73	2.98E+02	93.48			2.98E+02	9.35E+01
	11	269.93	7.77E+01	70.31	1.23E+00	4.98E+00	7.65E+01	7.05E+01
	12	278.81	8.14E+01	60.79			8.14E+01	6.08E+01
	13	295.16	3.38E+02	69.86			3.38E+02	6.99E+01
	14	299.99	6.58E+01	49.50			6.58E+01	4.95E+01
M	15	338.42	2.54E+02	47.63			2.54E+02	4.76E+01
m	16	342.04	4.78E+01	51.16			4.78E+01	5.12E+01
	17	351.87	5.47E+02	89.07	5.79E+00	4.49E+00	5.41E+02	8.92E+01
	18	462.23	1.30E+02	61.09			1.30E+02	6.11E+01
	19	510.78	2.20E+02	54.16	7.28E+01	5.30E+00	1.48E+02	5.44E+01
	20	560.86	3.14E+01	26.81			3.14E+01	2.68E+01
	21	583.53	3.57E+02	66.61	2.72E+00	3.05E+00	3.55E+02	6.67E+01
	22	609.31	4.21E+02	62.64	6.35E+00	4.02E+00	4.15E+02	6.28E+01
	23	727.66	1.12E+02	44.17			1.12E+02	4.42E+01
M	24	764.94	2.85E+01	21.90			2.85E+01	2.19E+01
m	25	769.01	4.65E+01	36.32			4.65E+01	3.63E+01
	26	795.32	5.22E+01	31.50			5.22E+01	3.15E+01
	27	861.11	5.00E+01	37.01			5.00E+01	3.70E+01
	28	904.71	2.10E+01	24.63			2.10E+01	2.46E+01
	29	911.50	2.42E+02	47.23	5.31E+00	3.00E+00	2.37E+02	4.73E+01
M	30	965.10	5.29E+01	31.34			5.29E+01	3.13E+01
m	31	969.27	1.30E+02	36.08			1.30E+02	3.61E+01
	32	1049.76	2.05E+01	24.14			2.05E+01	2.41E+01
	33	1120.58	1.07E+02	39.21			1.07E+02	3.92E+01
	34	1407.43	1.36E+01	17.41			1.36E+01	1.74E+01
M	35	1461.49	1.19E+03	70.71	8.09E+00	2.23E+00	1.18E+03	7.07E+01

Analysis Report for 1707091-16

HTC-A08-BKGD02-1824-01

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
m	36	1466.09	3.88E+01	57.10			3.88E+01	5.71E+01
	37	1588.84	1.87E+01	22.99			1.87E+01	2.30E+01
	38	1622.09	1.62E+01	15.52			1.62E+01	1.55E+01
	39	1646.98	8.00E+00	5.66			8.00E+00	5.66E+00
	40	1668.45	1.08E+01	11.66			1.08E+01	1.17E+01
	41	1729.67	2.57E+01	14.14			2.57E+01	1.41E+01
	42	1752.15	7.00E+00	7.35			7.00E+00	7.35E+00
	43	1765.24	7.34E+01	26.08			7.34E+01	2.61E+01
	44	1783.36	9.00E+00	9.17			9.00E+00	9.17E+00
	45	1824.16	6.63E+00	6.40			6.63E+00	6.40E+00
	46	2037.36	5.00E+00	4.47			5.00E+00	4.47E+00
	47	2103.61	1.93E+01	14.70			1.93E+01	1.47E+01
	48	2113.13	9.27E+00	10.44			9.27E+00	1.04E+01
	49	2183.38	9.00E+00	7.50			9.00E+00	7.50E+00
	50	2204.51	2.80E+01	11.66			2.80E+01	1.17E+01
	51	2360.27	1.35E+01	10.61			1.35E+01	1.06E+01
	52	2406.21	5.50E+00	6.67			5.50E+00	6.67E+00
	53	2459.29	1.50E+01	7.75			1.50E+01	7.75E+00
M	54	2610.75	1.04E+01	0.50			1.04E+01	5.00E-01
m	55	2615.21	1.39E+02	24.82	5.63E+00	1.38E+00	1.33E+02	2.49E+01

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

AREA CORRECTION REPORT
REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 8/24/2017 1:14:41PM

Ref. Peak Energy : 0.00 Reference Date :
Peak Ratio : 0.00 Uncertainty : 0.00
Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000055573.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	43.82	3.40E+01	32.94			3.40E+01	3.29E+01
m	2	46.28	1.35E+02	67.16	3.67E+01	8.40E+00	9.78E+01	6.77E+01
M	3	73.82	2.57E+02	123.96			2.57E+02	1.24E+02
m	4	76.93	1.01E+03	130.18	7.20E+00	1.47E+00	1.00E+03	1.30E+02
m	5	90.42	1.19E+02	84.38			1.19E+02	8.44E+01
	6	127.60	1.18E+02	98.33			1.18E+02	9.83E+01
	7	185.47	2.47E+02	106.29	5.22E+01	7.59E+00	1.95E+02	1.07E+02
	8	209.53	8.53E+01	82.66			8.53E+01	8.27E+01

Analysis Report for 1707091-16

HTC-A08-BKGD02-1824-01

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
M	9	238.66	1.08E+03	81.48	2.13E+01	6.33E+00	1.06E+03	8.17E+01
m	10	241.73	2.98E+02	93.48			2.98E+02	9.35E+01
	11	269.93	7.77E+01	70.31	1.23E+00	4.98E+00	7.65E+01	7.05E+01
	12	278.81	8.14E+01	60.79			8.14E+01	6.08E+01
	13	295.16	3.38E+02	69.86			3.38E+02	6.99E+01
	14	299.99	6.58E+01	49.50			6.58E+01	4.95E+01
M	15	338.42	2.54E+02	47.63			2.54E+02	4.76E+01
m	16	342.04	4.78E+01	51.16			4.78E+01	5.12E+01
	17	351.87	5.47E+02	89.07	5.79E+00	4.49E+00	5.41E+02	8.92E+01
	18	462.23	1.30E+02	61.09			1.30E+02	6.11E+01
	19	510.78	2.20E+02	54.16	7.28E+01	5.30E+00	1.48E+02	5.44E+01
	20	560.86	3.14E+01	26.81			3.14E+01	2.68E+01
	21	583.53	3.57E+02	66.61	2.72E+00	3.05E+00	3.55E+02	6.67E+01
	22	609.31	4.21E+02	62.64	6.35E+00	4.02E+00	4.15E+02	6.28E+01
	23	727.66	1.12E+02	44.17			1.12E+02	4.42E+01
M	24	764.94	2.85E+01	21.90			2.85E+01	2.19E+01
m	25	769.01	4.65E+01	36.32			4.65E+01	3.63E+01
	26	795.32	5.22E+01	31.50			5.22E+01	3.15E+01
	27	861.11	5.00E+01	37.01			5.00E+01	3.70E+01
	28	904.71	2.10E+01	24.63			2.10E+01	2.46E+01
	29	911.50	2.42E+02	47.23	5.31E+00	3.00E+00	2.37E+02	4.73E+01
M	30	965.10	5.29E+01	31.34			5.29E+01	3.13E+01
m	31	969.27	1.30E+02	36.08			1.30E+02	3.61E+01
	32	1049.76	2.05E+01	24.14			2.05E+01	2.41E+01
	33	1120.58	1.07E+02	39.21			1.07E+02	3.92E+01
	34	1407.43	1.36E+01	17.41			1.36E+01	1.74E+01
M	35	1461.49	1.19E+03	70.71	8.09E+00	2.23E+00	1.18E+03	7.07E+01
m	36	1466.09	3.88E+01	57.10			3.88E+01	5.71E+01
	37	1588.84	1.87E+01	22.99			1.87E+01	2.30E+01
	38	1622.09	1.62E+01	15.52			1.62E+01	1.55E+01
	39	1646.98	8.00E+00	5.66			8.00E+00	5.66E+00
	40	1668.45	1.08E+01	11.66			1.08E+01	1.17E+01
	41	1729.67	2.57E+01	14.14			2.57E+01	1.41E+01
	42	1752.15	7.00E+00	7.35			7.00E+00	7.35E+00
	43	1765.24	7.34E+01	26.08			7.34E+01	2.61E+01
	44	1783.36	9.00E+00	9.17			9.00E+00	9.17E+00
	45	1824.16	6.63E+00	6.40			6.63E+00	6.40E+00
	46	2037.36	5.00E+00	4.47			5.00E+00	4.47E+00
	47	2103.61	1.93E+01	14.70			1.93E+01	1.47E+01
	48	2113.13	9.27E+00	10.44			9.27E+00	1.04E+01
	49	2183.38	9.00E+00	7.50			9.00E+00	7.50E+00
	50	2204.51	2.80E+01	11.66			2.80E+01	1.17E+01
	51	2360.27	1.35E+01	10.61			1.35E+01	1.06E+01
	52	2406.21	5.50E+00	6.67			5.50E+00	6.67E+00
	53	2459.29	1.50E+01	7.75			1.50E+01	7.75E+00
M	54	2610.75	1.04E+01	0.50			1.04E+01	5.00E-01
m	55	2615.21	1.39E+02	24.82	5.63E+00	1.38E+00	1.33E+02	2.49E+01

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

Analysis Report for 1707091-16

HTC-A08-BKGD02-1824-01

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	0.929	1460.81	*	10.67	2.46E+01	2.61E+00
NB-95	0.855	765.79	*	99.81	2.90E-01	2.25E-01
ND-147	0.391	91.11	*	28.90	9.86E+01	7.06E+01
		531.02		13.10		
HG-203	0.955	279.19	*	77.30	3.09E-01	2.32E-01
TL-208	0.960	583.14	*	30.22	1.32E+00	2.82E-01
		860.37	*	4.48	1.68E+00	1.26E+00
		2614.66	*	35.85	1.25E+00	2.67E-01
PB-210	0.993	46.50	*	4.25	1.05E+00	7.35E-01
BI-212	0.733	727.17	*	11.80	1.26E+00	5.14E-01
		1620.62		2.75		
PB-212	1.000	238.63	*	44.60	1.41E+00	1.57E-01
		300.09	*	3.41	1.33E+00	1.00E+00
BI-214	0.980	609.31	*	46.30	1.04E+00	1.91E-01
		1120.29	*	15.10	1.31E+00	4.90E-01
		1764.49	*	15.80	1.19E+00	4.32E-01
		2204.22	*	4.98	1.68E+00	7.16E-01
PB-214	1.000	295.21	*	19.19	1.20E+00	2.67E-01
		351.92	*	37.19	1.12E+00	2.07E-01
RA-224	0.914	240.98	*	3.95	4.50E+00	1.46E+00
RA-226	0.915	186.21	*	3.28	3.05E+00	5.82E+00
AC-228	0.984	338.32	*	11.40	1.66E+00	3.42E-01
		911.07	*	27.70	1.35E+00	2.92E-01
		969.11	*	16.60	1.29E+00	3.75E-01
AM-243	0.891	74.67	*	66.00	1.58E-01	7.76E-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

Analysis Report for 1707091-16

HTC-A08-BKGD02-1824-01

UNIDENTIFIED PEAKS

Peak Locate Performed on : 8/24/2017 1:14:41PM
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	43.82	9.45455E-03	48.39		
m	4	76.93	2.78719E-01	6.49		
	6	127.60	3.28790E-02	41.54		
	8	209.53	2.37059E-02	48.43	Tol.	GA-67 CM-243
	11	269.93	2.12533E-02	46.06		
m	16	342.04	1.32774E-02	53.51	Sum	
	18	462.23	3.60779E-02	23.52		
	19	510.78	4.10117E-02	18.43		
	20	560.86	8.71377E-03	42.74		
m	25	769.01	1.29253E-02	39.03	Sum	
	26	795.32	1.45079E-02	30.15	Sum	
	28	904.71	5.83535E-03	58.63	Sum	
M	30	965.10	1.46992E-02	29.61		
	32	1049.76	5.69444E-03	58.87		
	34	1407.43	3.78086E-03	63.97	Tol.	EU-152
m	36	1466.09	1.07877E-02	73.51		
	37	1588.84	5.20125E-03	61.40	Sum	
	38	1622.09	4.50670E-03	47.84		
	39	1646.98	2.22222E-03	35.36	Sum	
	40	1668.45	2.99383E-03	54.10		
	41	1729.67	7.14869E-03	27.48	Sum	
	42	1752.15	1.94444E-03	52.49		
	44	1783.36	2.50000E-03	50.92		
	45	1824.16	1.84028E-03	48.33		
	46	2037.36	1.38889E-03	44.72		
	47	2103.61	5.37356E-03	37.99	S-Esc	
	48	2113.13	2.57407E-03	56.33		
	49	2183.38	2.50000E-03	41.67		
	51	2360.27	3.75000E-03	39.28		
	52	2406.21	1.52778E-03	60.64		
	53	2459.29	4.16667E-03	25.82		
M	54	2610.75	2.87693E-03	2.41		

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 1707091-16

HTC-A08-BKGD02-1824-01

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	2.46E+01	2.61E+00
NB-95	0.85	765.79	*	99.81	2.90E-01	2.25E-01
ND-147	0.39	91.11	*	28.90	9.86E+01	7.06E+01
		531.02		13.10		
HG-203	0.95	279.19	*	77.30	3.09E-01	2.32E-01
TL-208	0.96	583.14	*	30.22	1.32E+00	2.82E-01
		860.37	*	4.48	1.68E+00	1.26E+00
		2614.66	*	35.85	1.25E+00	2.67E-01
PB-210	0.99	46.50	*	4.25	1.05E+00	7.35E-01
BI-212	0.73	727.17	*	11.80	1.26E+00	5.14E-01
		1620.62		2.75		
PB-212	1.00	238.63	*	44.60	1.41E+00	1.57E-01
		300.09	*	3.41	1.33E+00	1.00E+00
BI-214	0.98	609.31	*	46.30	1.04E+00	1.91E-01
		1120.29	*	15.10	1.31E+00	4.90E-01
		1764.49	*	15.80	1.19E+00	4.32E-01
		2204.22	*	4.98	1.68E+00	7.16E-01
PB-214	1.00	295.21	*	19.19	1.20E+00	2.67E-01
		351.92	*	37.19	1.12E+00	2.07E-01
RA-224	0.91	240.98	*	3.95	4.50E+00	1.46E+00
RA-226	0.91	186.21	*	3.28	3.05E+00	5.82E+00
AC-228	0.98	338.32	*	11.40	1.66E+00	3.42E-01
		911.07	*	27.70	1.35E+00	2.92E-01
		969.11	*	16.60	1.29E+00	3.75E-01
AM-243	0.89	74.67	*	66.00	1.58E-01	7.76E-02

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

Analysis Report for 1707091-16

HTC-A08-BKGD02-1824-01

INTERFERENCE CORRECTED REPORT

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
K-40	0.929	2.46E+01	2.61E+00	
NB-95	0.855	2.90E-01	2.25E-01	
ND-147	0.391	9.86E+01	7.06E+01	
HG-203	0.955	3.09E-01	2.32E-01	
TL-208	0.960	1.29E+00	1.91E-01	
PB-210	0.993	1.05E+00	7.35E-01	
BI-212	0.733	1.26E+00	5.14E-01	
PB-212	1.000	1.41E+00	1.55E-01	
BI-214	0.980	1.12E+00	1.60E-01	
PB-214	1.000	1.15E+00	1.64E-01	
RA-224	0.914	4.50E+00	1.46E+00	
RA-226	0.915	3.05E+00	5.82E+00	
AC-228	0.984	1.43E+00	1.91E-01	
AM-243	0.891	1.58E-01	7.76E-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 1707091-16

HTC-A08-BKGD02-1824-01

UNIDENTIFIED PEAKS

Peak Locate Performed on : 8/24/2017 1:14:41PM
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	43.82	9.45455E-03	48.39		
m	4	76.93	2.78719E-01	6.49		
	6	127.60	3.28790E-02	41.54		
	8	209.53	2.37059E-02	48.43	Tol.	GA-67 CM-243
	11	269.93	2.12533E-02	46.06		
m	16	342.04	1.32774E-02	53.51	Sum	
	18	462.23	3.60779E-02	23.52		
	19	510.78	4.10117E-02	18.43		
	20	560.86	8.71377E-03	42.74		
m	25	769.01	1.29253E-02	39.03	Sum	
	26	795.32	1.45079E-02	30.15	Sum	
	28	904.71	5.83535E-03	58.63	Sum	
M	30	965.10	1.46992E-02	29.61		
	32	1049.76	5.69444E-03	58.87		
	34	1407.43	3.78086E-03	63.97	Tol.	EU-152
m	36	1466.09	1.07877E-02	73.51		
	37	1588.84	5.20125E-03	61.40	Sum	
	38	1622.09	4.50670E-03	47.84		
	39	1646.98	2.22222E-03	35.36	Sum	
	40	1668.45	2.99383E-03	54.10		
	41	1729.67	7.14869E-03	27.48	Sum	
	42	1752.15	1.94444E-03	52.49		
	44	1783.36	2.50000E-03	50.92		
	45	1824.16	1.84028E-03	48.33		
	46	2037.36	1.38889E-03	44.72		
	47	2103.61	5.37356E-03	37.99	S-Esc	
	48	2113.13	2.57407E-03	56.33		
	49	2183.38	2.50000E-03	41.67		
	51	2360.27	3.75000E-03	39.28		
	52	2406.21	1.52778E-03	60.64		
	53	2459.29	4.16667E-03	25.82		
M	54	2610.75	2.87693E-03	2.41		

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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	-4.26E-01	1.90E+00	1.90E+00
+		NA-22	1274.54		99.94	1.43E-04	8.50E-02	8.50E-02
+	@	NA-24	1368.53		99.99	1.00E+26	1.00E+26	1.00E+26
	@		2754.09		99.86	1.00E+26		1.00E+26
+		AL-26	1808.65		99.76	-1.73E-02	4.72E-02	4.72E-02
+		K-40	1460.81	*	10.67	2.46E+01	1.10E+00	1.10E+00
+	@	AR-41	1293.64		99.16	1.00E+26	1.00E+26	1.00E+26
+		TI-44	67.88		94.40	1.67E-03	5.91E-02	5.91E-02
			78.34		96.00	1.90E-01		7.77E-02
+		SC-46	889.25		99.98	2.33E-02	1.53E-01	1.53E-01
			1120.51		99.99	4.27E-01		2.73E-01
+		V-48	983.52		99.98	1.55E+00	5.41E+00	5.41E+00
			1312.10		97.50	-9.63E-01		5.69E+00
+		CR-51	320.08		9.83	-3.03E+00	6.62E+00	6.62E+00
+		MN-54	834.83		99.97	-2.26E-02	8.50E-02	8.50E-02
+		CO-56	846.75		99.96	8.92E-02	1.69E-01	1.69E-01
			1037.75		14.03	3.43E-03		1.14E+00
			1238.25		67.00	3.31E-01		3.76E-01
			1771.40		15.51	3.21E-02		7.82E-01
			2598.48		16.90	-2.42E-01		5.81E-01
+		CO-57	122.06		85.51	1.88E-03	6.94E-02	6.94E-02
			136.48		10.60	-8.15E-02		5.57E-01
+		CO-58	810.76		99.40	-3.91E-02	1.69E-01	1.69E-01
+		FE-59	1099.22		56.50	-1.63E-01	6.06E-01	6.06E-01
			1291.56		43.20	1.05E-01		8.98E-01
+		CO-60	1173.22		100.00	4.42E-02	6.46E-02	9.04E-02
			1332.49		100.00	-1.29E-02		6.46E-02
+		ZN-65	1115.52		50.75	-4.01E-02	1.91E-01	1.91E-01
+		GA-67	93.31		35.70	7.43E+08	3.58E+08	3.58E+08
			208.95		2.24	2.55E+09		4.98E+09
			300.22		16.00	-1.99E+09		7.73E+08
+		SE-75	121.11		16.70	6.58E-03	1.38E-01	4.86E-01

Analysis Report for 1707091-16

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	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	SE-75	136.00		59.20	-2.02E-02	1.38E-01	1.38E-01
		264.65		59.80	3.15E-02		1.65E-01
		279.53		25.20	2.51E-01		3.99E-01
		400.65		11.40	5.92E-02		8.65E-01
+	RB-82	776.52		13.00	-1.66E-01	7.23E+00	7.23E+00
+	RB-83	520.41		46.00	-3.57E-02	2.69E-01	2.69E-01
		529.64		30.30	-9.31E-02		3.93E-01
		552.65		16.40	2.32E-01		7.44E-01
+	KR-85	513.99		0.43	3.13E+00	1.96E+01	1.96E+01
+	SR-85	513.99		99.27	3.96E-02	2.48E-01	2.48E-01
+	Y-88	898.02		93.40	8.76E-03	9.24E-02	1.24E-01
		1836.01		99.38	4.86E-03		9.24E-02
+	MO-93	263.06		56.72	2.93E-02	4.50E-02	9.72E-02
		684.67		99.68	2.76E-02		6.40E-02
		1477.11		99.08	-1.29E-02		4.50E-02
+	NB-93M	16.57		9.43	7.80E-02	5.17E-01	5.17E-01
+	NB-94	702.63		100.00	-1.77E-02	6.30E-02	6.30E-02
		871.10		100.00	9.14E-03		6.59E-02
+	NB-95	765.79	*	99.81	2.90E-01	7.05E-01	7.05E-01
+	NB-95M	235.69		25.00	-5.07E+08	6.60E+07	6.60E+07
+	ZR-95	724.18		43.70	-7.05E-03	3.75E-01	5.18E-01
		756.72		55.30	2.29E-01		3.75E-01
+	MO-99	181.06		6.20	-1.87E+11	5.65E+10	8.39E+10
		739.58		12.80	2.07E+10		5.65E+10
		778.00		4.50	2.03E+10		1.47E+11
+	RU-103	497.08		89.00	6.73E-02	3.67E-01	3.67E-01
+	RU-106	621.84		9.80	2.94E-01	7.18E-01	7.18E-01
+	AG-108M	433.93		89.90	-1.30E-02	6.01E-02	6.01E-02
		614.37		90.40	-2.88E-02		7.61E-02
		722.95		90.50	-1.37E-03		7.03E-02
+	CD-109	88.03		3.72	6.07E-01	1.96E+00	1.96E+00
+	AG-110M	657.75		93.14	-4.97E-02	7.96E-02	7.96E-02
		677.61		10.53	1.97E-01		8.10E-01
		706.67		16.46	-1.61E-01		5.11E-01
		763.93		21.98	-4.16E-01		4.03E-01
		884.67		71.63	3.72E-02		1.21E-01
		1384.27		23.94	-1.98E-01		2.91E-01
+	CD-113M	263.70		0.02	8.78E+01	2.44E+02	2.44E+02
+	SN-113	255.12		1.93	1.06E+00	1.61E-01	4.25E+00
		391.69		64.90	3.05E-02		1.61E-01
+	TE123M	159.00		84.10	-1.67E-02	9.59E-02	9.59E-02
+	SB-124	602.71		97.87	-1.85E-02	2.07E-01	2.07E-01
		645.85		7.26	-3.47E-01		2.50E+00
		722.78		11.10	-3.56E-02		1.83E+00
		1691.02		49.00	2.89E-03		3.25E-01
+	I-125	35.49		6.49	6.88E-01	2.52E+00	2.52E+00
+	SB-125	176.33		6.89	3.19E-01	1.92E-01	7.33E-01
		427.89		29.33	-8.99E-02		1.92E-01

Analysis Report for 1707091-16

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	SB-125	463.38	10.35	7.77E-01	1.92E-01	6.94E-01
		600.56	17.80	6.52E-02		3.76E-01
		635.90	11.32	1.55E-01		5.23E-01
+	SB-126	414.70	83.30	-1.01E+01	1.83E+01	1.87E+01
		666.33	99.60	7.99E+00		1.84E+01
		695.00	99.60	1.18E+00		1.83E+01
		720.50	53.80	1.39E+00		3.30E+01
+	SN-126	87.57	37.00	1.41E-01	1.65E-01	1.65E-01
+	SB-127	473.00	25.00	2.49E+06	1.38E+07	1.80E+07
		685.20	35.70	5.97E+06		1.38E+07
		783.80	14.70	-8.39E+06		3.47E+07
+	I-129	29.78	57.00	5.17E-03	9.66E-02	9.66E-02
		33.60	13.20	3.80E-02		3.86E-01
		39.58	7.52	2.87E-01		6.47E-01
+	I-131	284.30	6.05	2.44E+03	3.86E+02	5.19E+03
		364.48	81.20	-1.12E+02		3.86E+02
		636.97	7.26	1.41E+02		4.55E+03
		722.89	1.80	-4.15E+02		2.13E+04
+	TE-132	49.72	13.10	5.91E+07	1.15E+08	7.66E+08
		228.16	88.00	-1.32E+07		1.15E+08
+	BA-133	81.00	33.00	-5.81E-01	1.33E-01	1.65E-01
		302.84	17.80	3.57E-02		3.39E-01
		356.01	60.00	-3.52E-03		1.33E-01
+	@ I-133	529.87	86.30	1.00E+26	1.00E+26	1.00E+26
+	XE-133	81.00	38.00	-3.11E+05	8.86E+04	8.86E+04
+	CS-134	563.23	8.38	1.00E-01	8.09E-02	7.58E-01
		569.32	15.43	-7.11E-03		4.03E-01
		604.70	97.60	-6.59E-01		8.09E-02
		795.84	85.40	5.38E-02		9.16E-02
		801.93	8.73	-1.03E-01		8.06E-01
+	CS-135	268.24	16.00	1.97E-01	3.84E-01	3.84E-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	4.33E+01	1.27E+01	1.31E+02
		163.89	4.61	1.30E+02		2.10E+02
		176.55	13.56	3.09E+01		7.10E+01
		273.65	12.66	-1.03E+02		9.41E+01
		340.57	48.50	9.10E+01		3.33E+01
		818.50	99.70	-2.98E+00		1.27E+01
		1048.07	79.60	-8.98E-01		1.77E+01
		1235.34	19.70	1.01E+01		1.04E+02
+	CS-137	661.65	85.12	-9.58E-03	7.22E-02	7.22E-02
+	LA-138	788.74	34.00	1.25E-01	8.18E-02	1.99E-01
		1435.80	66.00	2.45E-02		8.18E-02
+	CE-139	165.85	80.35	2.41E-02	9.73E-02	9.73E-02
+	BA-140	162.64	6.70	-5.62E+00	5.23E+01	1.63E+02
		304.84	4.50	-7.04E+01		2.78E+02
		423.70	3.20	-5.95E+01		3.92E+02

Analysis Report for 1707091-16

HTC-A08-BKGD02-1824-01

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	BA-140	437.55		2.00	-5.87E+01	5.23E+01	6.28E+02
		537.32		25.00	-3.07E+00		5.23E+01
+	LA-140	328.77		20.50	2.59E+01	1.12E+01	6.70E+01
		487.03		45.50	6.49E+00		2.91E+01
		815.85		23.50	3.17E+01		6.51E+01
		1596.49		95.49	2.22E+00		1.12E+01
+	CE-141	145.44		48.40	3.82E-01	8.69E-01	8.69E-01
+	@ 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	-5.05E-02	5.50E-01	5.50E-01
+	PM-144	476.78		42.00	-4.76E-02	7.45E-02	1.56E-01
		618.01		98.60	2.54E-02		7.45E-02
		696.49		99.49	4.34E-02		8.09E-02
+	PM-145	36.85		21.70	-5.11E-02	1.29E-01	2.31E-01
		37.36		39.70	1.31E-01		1.29E-01
		42.30		15.10	-2.14E-03		3.18E-01
		72.40		2.31	-3.51E+00		2.84E+00
+	PM-146	453.90		39.94	-4.68E-02	1.41E-01	1.41E-01
		735.90		14.01	-3.69E-02		4.71E-01
		747.13		13.10	-6.64E-02		4.72E-01
+	ND-147	91.11	*	28.90	9.86E+01	2.38E+02	2.55E+02
		531.02		13.10	-6.33E+01		2.38E+02
+	PM-149	285.90		3.10	2.13E+13	9.16E+13	9.16E+13
+	EU-152	121.78		20.50	3.03E-03	2.24E-01	2.24E-01
		244.69		5.40	-3.70E-01		1.02E+00
		344.27		19.13	-8.38E-02		3.06E-01
		778.89		9.20	4.37E-01		6.95E-01
		964.01		10.40	-1.71E+00		8.70E-01
		1085.78		7.22	-1.17E-01		1.07E+00
		1112.02		9.60	2.90E-01		8.20E-01
		1407.95		14.94	8.68E-02		4.51E-01
+	GD-153	97.43		31.30	9.23E-02	2.01E-01	2.01E-01
		103.18		22.20	4.81E-02		2.74E-01
+	EU-154	123.07		40.50	-1.53E-02	1.16E-01	1.16E-01
		723.30		19.70	-6.42E-03		3.29E-01
		873.19		11.50	-1.76E-01		5.83E-01
		996.32		10.30	-3.09E-01		6.22E-01
		1004.76		17.90	-1.40E-01		3.72E-01
		1274.45		35.50	3.81E-04		2.27E-01
+	EU-155	86.50		30.90	1.43E-01	2.04E-01	2.04E-01
		105.30		20.70	8.43E-02		2.30E-01
+	EU-156	811.77		10.40	-3.66E+01	5.80E+01	5.80E+01
		1153.47		7.20	4.21E+01		1.15E+02
		1230.71		8.90	2.38E+01		1.08E+02
+	HO-166M	184.41		72.60	1.73E-01	8.33E-02	8.33E-02
		280.45		29.60	4.62E-02		1.85E-01
		410.94		11.10	9.12E-02		5.20E-01
		711.69		54.10	-6.96E-05		1.21E-01

Analysis Report for 1707091-16

HTC-A08-BKGD02-1824-01

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	TM-171	66.72		0.14	-8.21E+01	4.42E+01	4.42E+01
+	HF-172	67.35		5.31	3.28E-02	4.72E-01	1.16E+00
		125.81		11.30	-1.57E-01		4.72E-01
+	LU-172	181.53		20.60	-1.72E+04	4.57E+03	7.74E+03
		900.72		29.81	2.89E+03		7.10E+03
		1093.66		62.50	1.81E+03		4.57E+03
+	LU-173	100.72		5.24	-1.77E-02	3.33E-01	1.00E+00
		272.11		21.20	6.11E-02		3.33E-01
+	HF-175	343.40		84.00	-4.83E-01	1.86E-01	1.86E-01
+	LU-176	88.34		13.30	1.46E-01	5.72E-02	4.71E-01
		201.83		86.00	-3.60E-03		5.72E-02
		306.78		94.00	4.46E-03		5.72E-02
+	HF-181	133.02		41.70	-5.32E-02	3.40E-01	5.80E-01
		345.85		17.20	-4.39E+00		1.70E+00
		482.03		82.80	-6.10E-02		3.40E-01
+	TA-182	67.75		41.20	7.04E-03	2.49E-01	2.49E-01
		1121.30		34.90	1.00E+00		6.33E-01
		1189.05		16.23	1.52E-01		9.38E-01
		1221.41		26.98	1.46E-02		6.43E-01
		1231.02		11.44	3.40E-01		1.54E+00
+	IR-192	308.46		29.68	2.22E-01	3.15E-01	4.71E-01
		468.07		48.10	8.29E-02		3.15E-01
+	HG-203	279.19	*	77.30	3.09E-01	3.73E-01	3.73E-01
+	TL-204	374.74		94.11	-2.56E-02	5.99E-02	5.99E-02
		899.15		99.16	2.43E-02		6.36E-02
		911.74		91.10	4.58E-01		1.58E-01
+	BI-207	569.67		97.72	-4.24E-02	5.76E-02	5.76E-02
		1063.62		74.90	1.01E-03		1.00E-01
+	TL-208	583.14	*	30.22	1.32E+00	1.49E-01	3.46E-01
		860.37	*	4.48	1.68E+00		1.99E+00
		2614.66	*	35.85	1.25E+00		1.49E-01
+	BI-210M	262.00		45.00	-7.20E-03	1.19E-01	1.19E-01
		300.00		23.00	-1.05E+00		2.64E-01
+	PB-210	46.50	*	4.25	1.05E+00	1.44E+00	1.44E+00
+	PB-211	404.84		2.90	-7.00E-01	1.91E+00	1.91E+00
		831.96		2.90	3.76E-02		2.36E+00
+	BI-212	727.17	*	11.80	1.26E+00	7.48E-01	7.48E-01
		1620.62		2.75	1.48E+00		2.31E+00
+	PB-212	238.63	*	44.60	1.41E+00	2.87E-01	2.87E-01
		300.09	*	3.41	1.33E+00		1.60E+00
+	BI-214	609.31	*	46.30	1.04E+00	2.03E-01	2.03E-01
		1120.29	*	15.10	1.31E+00		7.00E-01
		1764.49	*	15.80	1.19E+00		5.66E-01
		2204.22	*	4.98	1.68E+00		6.45E-01
+	PB-214	295.21	*	19.19	1.20E+00	2.64E-01	3.55E-01
		351.92	*	37.19	1.12E+00		2.64E-01
+	RN-219	401.80		6.50	1.43E-01	8.49E-01	8.49E-01
+	RA-223	323.87		3.88	-1.34E+00	1.36E+00	1.36E+00

Analysis Report for 1707091-16

HTC-A08-BKGD02-1824-01

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	RA-224	240.98	*	3.95	4.50E+00	3.27E+00	3.27E+00
+	RA-225	40.00		31.00	-3.06E+00	1.72E+01	1.72E+01
+	RA-226	186.21	*	3.28	3.05E+00	2.69E+00	2.69E+00
+	TH-227	50.10		8.40	-1.28E-01	5.45E-01	5.66E-01
		236.00		11.50	-4.18E+00		5.45E-01
		256.20		6.30	-2.08E-01		8.15E-01
+	AC-228	338.32	*	11.40	1.66E+00	3.52E-01	7.22E-01
		911.07	*	27.70	1.35E+00		3.52E-01
		969.11	*	16.60	1.29E+00		8.49E-01
+	TH-230	48.44		16.90	1.06E-01	3.02E-01	3.02E-01
		62.85		4.60	1.19E+00		1.31E+00
		67.67		0.37	4.25E-01		1.50E+01
+	PA-231	283.67		1.60	-4.83E-02	2.57E+00	3.22E+00
		302.67		2.30	2.71E-01		2.57E+00
+	TH-231	25.64		14.70	-3.12E+00	4.78E-01	4.78E-01
		84.21		6.40	-6.67E-01		8.82E-01
+	PA-233	311.98		38.60	3.25E-01	1.88E+00	1.88E+00
+	PA-234	131.20		20.40	1.54E-02	2.35E-01	2.35E-01
		733.99		8.80	3.04E-02		7.23E-01
		946.00		12.00	4.92E-02		6.09E-01
+	PA-234M	1001.03		0.92	1.22E+00	7.23E+00	7.23E+00
+	TH-234	63.29		3.80	1.75E+00	1.59E+00	1.59E+00
+	U-235	143.76		10.50	9.38E-02	4.59E-01	4.59E-01
		163.35		4.70	6.21E-01		1.00E+00
		205.31		4.70	1.12E-01		1.02E+00
+	NP-237	86.50		12.60	3.37E-01	4.82E-01	4.82E-01
+	NP-239	106.10		22.70	7.84E+11	1.64E+12	1.64E+12
		228.18		10.70	-4.11E+11		3.60E+12
		277.60		14.10	1.80E+12		3.29E+12
+	AM-241	59.54		35.90	-6.34E-02	1.52E-01	1.52E-01
+	AM-243	74.67	*	66.00	1.58E-01	1.55E-01	1.55E-01
+	CM-243	209.75		3.29	1.70E+00	4.12E-01	1.66E+00
		228.14		10.60	-5.14E-02		4.50E-01
		277.60		14.00	2.25E-01		4.12E-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

Analysis Report for 1707091-16

HTC-A08-BKGD02-1824-01

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	1.90E+00	1.90E+00	-4.26E-01	9.04E-01
	NA-22	1274.54		99.94	8.50E-02	8.50E-02	1.43E-04	3.95E-02
@	NA-24	1368.53		99.99	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		2754.09		99.86	1.00E+26		1.00E+26	1.00E+20
	AL-26	1808.65		99.76	4.72E-02	4.72E-02	-1.73E-02	2.01E-02
+	K-40	1460.81	*	10.67	1.10E+00	1.10E+00	2.46E+01	5.22E-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	5.91E-02	5.91E-02	1.67E-03	2.90E-02
		78.34		96.00	7.77E-02		1.90E-01	3.83E-02
	SC-46	889.25		99.98	1.53E-01	1.53E-01	2.33E-02	7.18E-02
		1120.51		99.99	2.73E-01		4.27E-01	1.31E-01
	V-48	983.52		99.98	5.41E+00	5.41E+00	1.55E+00	2.53E+00
		1312.10		97.50	5.69E+00		-9.63E-01	2.62E+00
	CR-51	320.08		9.83	6.62E+00	6.62E+00	-3.03E+00	3.19E+00
	MN-54	834.83		99.97	8.50E-02	8.50E-02	-2.26E-02	4.00E-02
	CO-56	846.75		99.96	1.69E-01	1.69E-01	8.92E-02	7.96E-02
		1037.75		14.03	1.14E+00		3.43E-03	5.29E-01
		1238.25		67.00	3.76E-01		3.31E-01	1.78E-01
		1771.40		15.51	7.82E-01		3.21E-02	3.37E-01
		2598.48		16.90	5.81E-01		-2.42E-01	2.25E-01
	CO-57	122.06		85.51	6.94E-02	6.94E-02	1.88E-03	3.38E-02
		136.48		10.60	5.57E-01		-8.15E-02	2.71E-01
	CO-58	810.76		99.40	1.69E-01	1.69E-01	-3.91E-02	7.91E-02
	FE-59	1099.22		56.50	6.06E-01	6.06E-01	-1.63E-01	2.82E-01
		1291.56		43.20	8.98E-01		1.05E-01	4.18E-01
	CO-60	1173.22		100.00	9.04E-02	6.46E-02	4.42E-02	4.25E-02
		1332.49		100.00	6.46E-02		-1.29E-02	2.94E-02
	ZN-65	1115.52		50.75	1.91E-01	1.91E-01	-4.01E-02	8.88E-02
	GA-67	93.31		35.70	3.58E+08	3.58E+08	7.43E+08	1.76E+08
		208.95		2.24	4.98E+09		2.55E+09	2.42E+09
		300.22		16.00	7.73E+08		-1.99E+09	3.74E+08
	SE-75	121.11		16.70	4.86E-01	1.38E-01	6.58E-03	2.37E-01
		136.00		59.20	1.38E-01		-2.02E-02	6.72E-02
		264.65		59.80	1.65E-01		3.15E-02	7.98E-02
		279.53		25.20	3.99E-01		2.51E-01	1.93E-01
		400.65		11.40	8.65E-01		5.92E-02	4.14E-01
	RB-82	776.52		13.00	7.23E+00	7.23E+00	-1.66E-01	3.39E+00
	RB-83	520.41		46.00	2.69E-01	2.69E-01	-3.57E-02	1.28E-01
		529.64		30.30	3.93E-01		-9.31E-02	1.86E-01
		552.65		16.40	7.44E-01		2.32E-01	3.52E-01
	KR-85	513.99		0.43	1.96E+01	1.96E+01	3.13E+00	9.47E+00
	SR-85	513.99		99.27	2.48E-01	2.48E-01	3.96E-02	1.20E-01

Analysis Report for 1707091-16

HTC-A08-BKGD02-1824-01

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	Y-88	898.02		93.40	1.24E-01	9.24E-02	8.76E-03	5.75E-02
		1836.01		99.38	9.24E-02		4.86E-03	3.93E-02
	MO-93	263.06		56.72	9.72E-02	4.50E-02	2.93E-02	4.71E-02
		684.67		99.68	6.40E-02		2.76E-02	3.02E-02
		1477.11		99.08	4.50E-02		-1.29E-02	1.94E-02
	NB-93M	16.57		9.43	5.17E-01	5.17E-01	7.80E-02	2.43E-01
	NB-94	702.63		100.00	6.30E-02	6.30E-02	-1.77E-02	2.98E-02
		871.10		100.00	6.59E-02		9.14E-03	3.09E-02
+	NB-95	765.79	*	99.81	7.05E-01	7.05E-01	2.90E-01	3.39E-01
	NB-95M	235.69		25.00	6.60E+07	6.60E+07	-5.07E+08	3.22E+07
	ZR-95	724.18		43.70	5.18E-01	3.75E-01	-7.05E-03	2.47E-01
		756.72		55.30	3.75E-01		2.29E-01	1.78E-01
	MO-99	181.06		6.20	8.39E+10	5.65E+10	-1.87E+11	4.07E+10
		739.58		12.80	5.65E+10		2.07E+10	2.67E+10
		778.00		4.50	1.47E+11		2.03E+10	6.85E+10
	RU-103	497.08		89.00	3.67E-01	3.67E-01	6.73E-02	1.74E-01
	RU-106	621.84		9.80	7.18E-01	7.18E-01	2.94E-01	3.40E-01
	AG-108M	433.93		89.90	6.01E-02	6.01E-02	-1.30E-02	2.87E-02
		614.37		90.40	7.61E-02		-2.88E-02	3.63E-02
		722.95		90.50	7.03E-02		-1.37E-03	3.32E-02
	CD-109	88.03		3.72	1.96E+00	1.96E+00	6.07E-01	9.62E-01
	AG-110M	657.75		93.14	7.96E-02	7.96E-02	-4.97E-02	3.74E-02
		677.61		10.53	8.10E-01		1.97E-01	3.84E-01
		706.67		16.46	5.11E-01		-1.61E-01	2.42E-01
		763.93		21.98	4.03E-01		-4.16E-01	1.90E-01
		884.67		71.63	1.21E-01		3.72E-02	5.66E-02
		1384.27		23.94	2.91E-01		-1.98E-01	1.29E-01
	CD-113M	263.70		0.02	2.44E+02	2.44E+02	8.78E+01	1.18E+02
	SN-113	255.12		1.93	4.25E+00	1.61E-01	1.06E+00	2.04E+00
		391.69		64.90	1.61E-01		3.05E-02	7.73E-02
	TE123M	159.00		84.10	9.59E-02	9.59E-02	-1.67E-02	4.66E-02
	SB-124	602.71		97.87	2.07E-01	2.07E-01	-1.85E-02	9.85E-02
		645.85		7.26	2.50E+00		-3.47E-01	1.18E+00
		722.78		11.10	1.83E+00		-3.56E-02	8.63E-01
		1691.02		49.00	3.25E-01		2.89E-03	1.41E-01
	I-125	35.49		6.49	2.52E+00	2.52E+00	6.88E-01	1.23E+00
	SB-125	176.33		6.89	7.33E-01	1.92E-01	3.19E-01	3.56E-01
		427.89		29.33	1.92E-01		-8.99E-02	9.16E-02
		463.38		10.35	6.94E-01		7.77E-01	3.34E-01
		600.56		17.80	3.76E-01		6.52E-02	1.79E-01
		635.90		11.32	5.23E-01		1.55E-01	2.46E-01
	SB-126	414.70		83.30	1.87E+01	1.83E+01	-1.01E+01	8.94E+00
		666.33		99.60	1.84E+01		7.99E+00	8.72E+00
		695.00		99.60	1.83E+01		1.18E+00	8.68E+00
		720.50		53.80	3.30E+01		1.39E+00	1.55E+01
	SN-126	87.57		37.00	1.65E-01	1.65E-01	1.41E-01	8.10E-02
	SB-127	473.00		25.00	1.80E+07	1.38E+07	2.49E+06	8.60E+06
		685.20		35.70	1.38E+07		5.97E+06	6.54E+06
		783.80		14.70	3.47E+07		-8.39E+06	1.63E+07
	I-129	29.78		57.00	9.66E-02	9.66E-02	5.17E-03	4.69E-02
		33.60		13.20	3.86E-01		3.80E-02	1.88E-01
		39.58		7.52	6.47E-01		2.87E-01	3.15E-01
	I-131	284.30		6.05	5.19E+03	3.86E+02	2.44E+03	2.50E+03

Analysis Report for 1707091-16

HTC-A08-BKGD02-1824-01

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
I-131	364.48	81.20	3.86E+02	3.86E+02	-1.12E+02	1.85E+02
	636.97	7.26	4.55E+03		1.41E+02	2.14E+03
	722.89	1.80	2.13E+04		-4.15E+02	1.01E+04
TE-132	49.72	13.10	7.66E+08	1.15E+08	5.91E+07	3.73E+08
	228.16	88.00	1.15E+08		-1.32E+07	5.58E+07
BA-133	81.00	33.00	1.65E-01	1.33E-01	-5.81E-01	8.10E-02
	302.84	17.80	3.39E-01		3.57E-02	1.64E-01
	356.01	60.00	1.33E-01		-3.52E-03	6.49E-02
@ I-133	529.87	86.30	1.00E+26	1.00E+26	1.00E+26	1.00E+20
XE-133	81.00	38.00	8.86E+04	8.86E+04	-3.11E+05	4.34E+04
CS-134	563.23	8.38	7.58E-01	8.09E-02	1.00E-01	3.59E-01
	569.32	15.43	4.03E-01		-7.11E-03	1.91E-01
	604.70	97.60	8.09E-02		-6.59E-01	3.87E-02
	795.84	85.40	9.16E-02		5.38E-02	4.33E-02
	801.93	8.73	8.06E-01		-1.03E-01	3.79E-01
CS-135	268.24	16.00	3.84E-01	3.84E-01	1.97E-01	1.86E-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	1.31E+02	1.27E+01	4.33E+01	6.38E+01
	163.89	4.61	2.10E+02		1.30E+02	1.02E+02
	176.55	13.56	7.10E+01		3.09E+01	3.45E+01
	273.65	12.66	9.41E+01		-1.03E+02	4.56E+01
	340.57	48.50	3.33E+01		9.10E+01	1.62E+01
	818.50	99.70	1.27E+01		-2.98E+00	5.95E+00
	1048.07	79.60	1.77E+01		-8.98E-01	8.22E+00
	1235.34	19.70	1.04E+02		1.01E+01	4.93E+01
CS-137	661.65	85.12	7.22E-02	7.22E-02	-9.58E-03	3.41E-02
LA-138	788.74	34.00	1.99E-01	8.18E-02	1.25E-01	9.37E-02
	1435.80	66.00	8.18E-02		2.45E-02	3.64E-02
CE-139	165.85	80.35	9.73E-02	9.73E-02	2.41E-02	4.73E-02
BA-140	162.64	6.70	1.63E+02	5.23E+01	-5.62E+00	7.93E+01
	304.84	4.50	2.78E+02		-7.04E+01	1.34E+02
	423.70	3.20	3.92E+02		-5.95E+01	1.87E+02
	437.55	2.00	6.28E+02		-5.87E+01	3.00E+02
	537.32	25.00	5.23E+01		-3.07E+00	2.48E+01
LA-140	328.77	20.50	6.70E+01	1.12E+01	2.59E+01	3.24E+01
	487.03	45.50	2.91E+01		6.49E+00	1.39E+01
	815.85	23.50	6.51E+01		3.17E+01	3.06E+01
	1596.49	95.49	1.12E+01		2.22E+00	4.78E+00
CE-141	145.44	48.40	8.69E-01	8.69E-01	3.82E-01	4.23E-01
@ CE-143	57.36	11.80	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	293.26	42.00	1.00E+26		1.00E+26	1.00E+20
@	664.55	5.20	1.00E+26		1.00E+26	1.00E+20
CE-144	133.54	10.80	5.50E-01	5.50E-01	-5.05E-02	2.68E-01
PM-144	476.78	42.00	1.56E-01	7.45E-02	-4.76E-02	7.44E-02
	618.01	98.60	7.45E-02		2.54E-02	3.53E-02
	696.49	99.49	8.09E-02		4.34E-02	3.84E-02
PM-145	36.85	21.70	2.31E-01	1.29E-01	-5.11E-02	1.12E-01
	37.36	39.70	1.29E-01		1.31E-01	6.29E-02
	42.30	15.10	3.18E-01		-2.14E-03	1.55E-01
	72.40	2.31	2.84E+00		-3.51E+00	1.40E+00
PM-146	453.90	39.94	1.41E-01	1.41E-01	-4.68E-02	6.75E-02

Analysis Report for 1707091-16

HTC-A08-BKGD02-1824-01

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	PM-146	735.90		14.01	4.71E-01	1.41E-01	-3.69E-02	2.22E-01
		747.13		13.10	4.72E-01		-6.64E-02	2.21E-01
+	ND-147	91.11	*	28.90	2.55E+02	2.38E+02	9.86E+01	1.26E+02
		531.02		13.10	2.38E+02		-6.33E+01	1.12E+02
	PM-149	285.90		3.10	9.16E+13	9.16E+13	2.13E+13	4.42E+13
	EU-152	121.78		20.50	2.24E-01	2.24E-01	3.03E-03	1.09E-01
		244.69		5.40	1.02E+00		-3.70E-01	4.94E-01
		344.27		19.13	3.06E-01		-8.38E-02	1.47E-01
		778.89		9.20	6.95E-01		4.37E-01	3.27E-01
		964.01		10.40	8.70E-01		-1.71E+00	4.14E-01
		1085.78		7.22	1.07E+00		-1.17E-01	5.01E-01
		1112.02		9.60	8.20E-01		2.90E-01	3.84E-01
		1407.95		14.94	4.51E-01		8.68E-02	2.06E-01
	GD-153	97.43		31.30	2.01E-01	2.01E-01	9.23E-02	9.83E-02
		103.18		22.20	2.74E-01		4.81E-02	1.34E-01
	EU-154	123.07		40.50	1.16E-01	1.16E-01	-1.53E-02	5.66E-02
		723.30		19.70	3.29E-01		-6.42E-03	1.55E-01
		873.19		11.50	5.83E-01		-1.76E-01	2.73E-01
		996.32		10.30	6.22E-01		-3.09E-01	2.88E-01
		1004.76		17.90	3.72E-01		-1.40E-01	1.73E-01
		1274.45		35.50	2.27E-01		3.81E-04	1.06E-01
	EU-155	86.50		30.90	2.04E-01	2.04E-01	1.43E-01	1.00E-01
		105.30		20.70	2.30E-01		8.43E-02	1.12E-01
	EU-156	811.77		10.40	5.80E+01	5.80E+01	-3.66E+01	2.71E+01
		1153.47		7.20	1.15E+02		4.21E+01	5.41E+01
		1230.71		8.90	1.08E+02		2.38E+01	5.09E+01
	HO-166M	184.41		72.60	8.33E-02	8.33E-02	1.73E-01	4.07E-02
		280.45		29.60	1.85E-01		4.62E-02	8.96E-02
		410.94		11.10	5.20E-01		9.12E-02	2.50E-01
		711.69		54.10	1.21E-01		-6.96E-05	5.73E-02
	TM-171	66.72		0.14	4.42E+01	4.42E+01	-8.21E+01	2.16E+01
	HF-172	67.35		5.31	1.16E+00	4.72E-01	3.28E-02	5.70E-01
		125.81		11.30	4.72E-01		-1.57E-01	2.30E-01
	LU-172	181.53		20.60	7.74E+03	4.57E+03	-1.72E+04	3.76E+03
		900.72		29.81	7.10E+03		2.89E+03	3.31E+03
		1093.66		62.50	4.57E+03		1.81E+03	2.15E+03
	LU-173	100.72		5.24	1.00E+00	3.33E-01	-1.77E-02	4.88E-01
		272.11		21.20	3.33E-01		6.11E-02	1.62E-01
	HF-175	343.40		84.00	1.86E-01	1.86E-01	-4.83E-01	8.98E-02
	LU-176	88.34		13.30	4.71E-01	5.72E-02	1.46E-01	2.32E-01
		201.83		86.00	5.72E-02		-3.60E-03	2.77E-02
		306.78		94.00	5.72E-02		4.46E-03	2.76E-02
	HF-181	133.02		41.70	5.80E-01	3.40E-01	-5.32E-02	2.82E-01
		345.85		17.20	1.70E+00		-4.39E+00	8.21E-01
		482.03		82.80	3.40E-01		-6.10E-02	1.62E-01
	TA-182	67.75		41.20	2.49E-01	2.49E-01	7.04E-03	1.22E-01
		1121.30		34.90	6.33E-01		1.00E+00	3.03E-01
		1189.05		16.23	9.38E-01		1.52E-01	4.39E-01
		1221.41		26.98	6.43E-01		1.46E-02	3.03E-01
		1231.02		11.44	1.54E+00		3.40E-01	7.27E-01
	IR-192	308.46		29.68	4.71E-01	3.15E-01	2.22E-01	2.27E-01
		468.07		48.10	3.15E-01		8.29E-02	1.51E-01
+	HG-203	279.19	*	77.30	3.73E-01	3.73E-01	3.09E-01	1.81E-01

Analysis Report for 1707091-16

HTC-A08-BKGD02-1824-01

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	TL-204	374.74		94.11	5.99E-02	5.99E-02	-2.56E-02	2.87E-02
		899.15		99.16	6.36E-02		2.43E-02	2.96E-02
		911.74		91.10	1.58E-01		4.58E-01	7.67E-02
	BI-207	569.67		97.72	5.76E-02	5.76E-02	-4.24E-02	2.73E-02
		1063.62		74.90	1.00E-01		1.01E-03	4.69E-02
+	TL-208	583.14	*	30.22	3.46E-01	1.49E-01	1.32E+00	1.68E-01
		860.37	*	4.48	1.99E+00		1.68E+00	9.48E-01
		2614.66	*	35.85	1.49E-01		1.25E+00	6.17E-02
	BI-210M	262.00		45.00	1.19E-01	1.19E-01	-7.20E-03	5.74E-02
		300.00		23.00	2.64E-01		-1.05E+00	1.28E-01
+	PB-210	46.50	*	4.25	1.44E+00	1.44E+00	1.05E+00	7.06E-01
	PB-211	404.84		2.90	1.91E+00	1.91E+00	-7.00E-01	9.17E-01
		831.96		2.90	2.36E+00		3.76E-02	1.11E+00
+	BI-212	727.17	*	11.80	7.48E-01	7.48E-01	1.26E+00	3.59E-01
		1620.62		2.75	2.31E+00		1.48E+00	1.04E+00
+	PB-212	238.63	*	44.60	2.87E-01	2.87E-01	1.41E+00	1.41E-01
		300.09	*	3.41	1.60E+00		1.33E+00	7.74E-01
+	BI-214	609.31	*	46.30	2.03E-01	2.03E-01	1.04E+00	9.83E-02
		1120.29	*	15.10	7.00E-01		1.31E+00	3.33E-01
		1764.49	*	15.80	5.66E-01		1.19E+00	2.61E-01
		2204.22	*	4.98	6.45E-01		1.68E+00	2.41E-01
+	PB-214	295.21	*	19.19	3.55E-01	2.64E-01	1.20E+00	1.73E-01
		351.92	*	37.19	2.64E-01		1.12E+00	1.29E-01
	RN-219	401.80		6.50	8.49E-01	8.49E-01	1.43E-01	4.07E-01
	RA-223	323.87		3.88	1.36E+00	1.36E+00	-1.34E+00	6.57E-01
+	RA-224	240.98	*	3.95	3.27E+00	3.27E+00	4.50E+00	1.62E+00
	RA-225	40.00		31.00	1.72E+01	1.72E+01	-3.06E+00	8.34E+00
+	RA-226	186.21	*	3.28	2.69E+00	2.69E+00	3.05E+00	1.32E+00
	TH-227	50.10		8.40	5.66E-01	5.45E-01	-1.28E-01	2.76E-01
		236.00		11.50	5.45E-01		-4.18E+00	2.65E-01
		256.20		6.30	8.15E-01		-2.08E-01	3.94E-01
+	AC-228	338.32	*	11.40	7.22E-01	3.52E-01	1.66E+00	3.52E-01
		911.07	*	27.70	3.52E-01		1.35E+00	1.68E-01
		969.11	*	16.60	8.49E-01		1.29E+00	4.11E-01
	TH-230	48.44		16.90	3.02E-01	3.02E-01	1.06E-01	1.48E-01
		62.85		4.60	1.31E+00		1.19E+00	6.41E-01
		67.67		0.37	1.50E+01		4.25E-01	7.37E+00
	PA-231	283.67		1.60	3.22E+00	2.57E+00	-4.83E-02	1.56E+00
		302.67		2.30	2.57E+00		2.71E-01	1.25E+00
	TH-231	25.64		14.70	4.78E-01	4.78E-01	-3.12E+00	2.33E-01
		84.21		6.40	8.82E-01		-6.67E-01	4.33E-01
	PA-233	311.98		38.60	1.88E+00	1.88E+00	3.25E-01	9.09E-01
	PA-234	131.20		20.40	2.35E-01	2.35E-01	1.54E-02	1.15E-01
		733.99		8.80	7.23E-01		3.04E-02	3.41E-01
		946.00		12.00	6.09E-01		4.92E-02	2.86E-01
	PA-234M	1001.03		0.92	7.23E+00	7.23E+00	1.22E+00	3.37E+00
	TH-234	63.29		3.80	1.59E+00	1.59E+00	1.75E+00	7.80E-01
	U-235	143.76		10.50	4.59E-01	4.59E-01	9.38E-02	2.24E-01
		163.35		4.70	1.00E+00		6.21E-01	4.89E-01
		205.31		4.70	1.02E+00		1.12E-01	4.95E-01
	NP-237	86.50		12.60	4.82E-01	4.82E-01	3.37E-01	2.37E-01
	NP-239	106.10		22.70	1.64E+12	1.64E+12	7.84E+11	7.99E+11
		228.18		10.70	3.60E+12		-4.11E+11	1.74E+12

Analysis Report for 1707091-16

HTC-A08-BKGD02-1824-01

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	NP-239	277.60		14.10	3.29E+12	1.64E+12	1.80E+12	1.60E+12
	AM-241	59.54		35.90	1.52E-01	1.52E-01	-6.34E-02	7.43E-02
+	AM-243	74.67	*	66.00	1.55E-01	1.55E-01	1.58E-01	7.68E-02
	CM-243	209.75		3.29	1.66E+00	4.12E-01	1.70E+00	8.05E-01
		228.14		10.60	4.50E-01		-5.14E-02	2.18E-01
		277.60		14.00	4.12E-01		2.25E-01	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

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: HTC-A08-BKGD02-1824-01

Elapsed Live time: 3600
Elapsed Real Time: 3602

Channel								
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	88	81	69	156	558	151
25:	77	97	75	88	63	82	71	76
33:	75	85	63	89	79	103	81	89
41:	71	89	77	106	99	121	176	96
49:	84	103	120	94	112	131	109	117
57:	143	135	147	164	148	155	173	291
65:	171	159	164	171	160	166	158	153
73:	202	199	424	368	454	549	197	162
81:	145	146	144	175	183	139	217	287
89:	168	190	193	150	301	267	144	120
97:	103	104	125	125	94	95	94	106
105:	112	121	85	107	103	98	86	104
113:	116	108	101	112	96	78	104	88
121:	112	91	92	98	98	115	120	103
129:	132	128	91	102	101	93	101	79
137:	94	85	93	95	87	102	80	111
145:	102	92	96	93	90	87	96	101
153:	91	86	90	88	74	86	82	76
161:	67	76	77	84	92	89	72	71
169:	83	71	83	96	80	80	78	83
177:	82	67	76	63	61	67	82	88
185:	99	191	155	96	70	78	92	63
193:	70	58	62	66	71	74	83	80
201:	79	74	63	69	74	69	63	65
209:	105	112	65	78	67	61	62	62
217:	77	70	57	58	64	64	60	58
225:	53	76	65	60	60	53	55	56
233:	60	65	78	62	82	211	674	295
241:	130	181	130	66	50	52	56	41
249:	44	38	52	47	49	53	41	45
257:	45	40	36	38	46	42	51	45
265:	55	44	52	39	58	93	79	40
273:	51	52	45	38	50	65	51	38
281:	48	41	25	34	37	39	38	51
289:	29	35	38	37	47	43	162	215
297:	56	34	40	78	59	39	34	34
305:	38	36	41	23	35	49	47	28
313:	24	33	40	40	33	32	31	33
321:	26	34	36	41	28	27	37	42
329:	61	44	26	31	42	25	38	31
337:	23	105	169	50	33	51	41	38
345:	30	28	29	33	37	37	112	298
353:	225	36	33	47	45	37	28	27
361:	34	28	31	22	28	26	32	17

369:	19	37	28	25	33	22	29	27

Sample Title: HTC-A08-BKGD02-1824-01

Channel								
377:	25	28	32	28	34	23	30	20
385:	27	27	29	25	30	21	35	27
393:	30	28	29	26	27	25	28	22
401:	25	30	24	26	26	22	24	29
409:	29	38	33	20	18	25	26	29
417:	22	31	26	22	32	10	23	16
425:	19	26	25	14	30	18	16	29
433:	29	16	16	24	23	18	29	14
441:	20	25	16	20	21	12	21	24
449:	23	16	9	24	20	26	16	21
457:	30	27	20	15	17	30	57	44
465:	29	24	16	14	28	29	23	19
473:	19	26	19	16	20	20	23	9
481:	22	24	13	24	15	20	20	25
489:	16	16	14	20	11	17	31	9
497:	19	15	23	15	24	12	20	14
505:	17	19	14	17	38	66	118	65
513:	33	13	15	22	25	13	23	17
521:	19	14	16	17	13	15	20	17
529:	16	10	15	14	15	20	18	16
537:	13	14	16	16	16	20	15	22
545:	16	21	16	13	15	23	16	14
553:	16	10	12	14	16	8	8	25
561:	18	15	16	10	13	20	15	11
569:	16	16	17	15	17	21	27	18
577:	20	20	18	19	17	55	164	157
585:	43	21	17	26	20	15	18	18
593:	18	14	18	8	16	16	22	18
601:	18	14	18	18	21	20	29	45
609:	157	212	48	13	19	18	18	14
617:	16	13	19	16	15	10	9	16
625:	16	9	10	15	13	8	5	11
633:	15	9	10	9	18	10	16	13
641:	12	10	10	15	12	10	15	18
649:	10	15	17	19	20	13	10	13
657:	15	12	12	12	11	16	16	20
665:	14	17	17	19	10	14	11	17
673:	19	16	16	14	27	13	20	10
681:	9	12	11	12	17	19	15	15
689:	12	14	14	13	16	10	16	12
697:	20	18	19	11	10	19	16	18
705:	14	10	13	15	15	14	15	16
713:	15	16	13	17	14	16	14	14
721:	12	13	10	15	11	20	57	49
729:	17	14	16	10	10	14	11	15
737:	17	9	17	12	17	11	11	10
745:	9	18	11	12	11	8	14	12
753:	15	12	13	26	16	12	19	9
761:	9	9	17	10	22	15	15	31
769:	24	14	16	20	21	11	3	9
777:	12	12	9	14	12	15	11	6
785:	13	19	11	13	19	14	8	10
793:	13	16	33	20	11	5	6	13

801:	10	14	13	15	11	14	19	19

Sample Title: HTC-A08-BKGD02-1824-01

Channel								
809:	10	8	4	11	14	10	13	6
817:	12	7	18	7	11	11	13	6
825:	4	10	11	11	9	15	15	5
833:	13	15	17	12	16	9	10	17
841:	12	11	8	17	11	14	12	12
849:	13	10	6	12	16	13	8	12
857:	12	8	16	27	28	14	12	14
865:	11	10	10	8	13	11	9	15
873:	12	8	12	8	12	16	9	6
881:	7	12	14	5	6	13	16	10
889:	9	4	13	10	14	11	6	8
897:	11	11	12	6	5	6	11	17
905:	12	14	4	12	17	39	124	97
913:	24	15	8	17	6	12	8	6
921:	9	8	19	9	11	11	12	6
929:	12	10	9	3	13	10	13	7
937:	8	10	8	5	13	8	10	14
945:	9	16	7	13	14	11	13	13
953:	9	9	5	11	9	10	10	11
961:	8	6	17	25	35	22	10	45
969:	64	45	8	9	11	9	11	6
977:	9	10	5	6	11	8	13	8
985:	9	11	8	8	7	7	12	9
993:	9	8	6	6	8	6	12	13
1001:	8	11	7	5	14	3	11	7
1009:	11	5	2	11	14	9	9	7
1017:	14	9	5	11	12	14	13	10
1025:	10	8	11	6	6	7	9	10
1033:	5	9	10	9	9	9	8	3
1041:	10	7	8	9	3	3	11	5
1049:	8	16	16	7	13	7	11	17
1057:	10	9	12	10	6	10	16	9
1065:	9	12	10	10	7	7	10	11
1073:	9	7	6	14	8	10	7	5
1081:	6	4	11	11	14	9	16	8
1089:	12	20	14	10	5	10	15	12
1097:	10	9	5	10	9	7	8	10
1105:	11	5	11	5	12	12	18	11
1113:	4	6	10	6	9	17	21	56
1121:	43	21	9	13	13	13	13	8
1129:	9	8	3	13	4	12	13	10
1137:	12	13	16	7	8	6	15	6
1145:	13	9	13	11	5	5	8	11
1153:	15	11	13	16	12	8	11	18
1161:	6	9	11	11	11	16	10	10
1169:	10	12	19	11	9	18	7	10
1177:	10	7	10	15	6	13	4	7
1185:	13	7	10	13	12	16	6	11
1193:	11	8	7	11	10	4	8	17
1201:	11	12	11	13	7	17	13	13
1209:	14	16	8	15	6	9	9	13
1217:	9	6	15	16	15	13	16	14
1225:	20	11	18	6	17	14	18	11

1233:	13	7	13	19	12	32	18	8

Sample Title: HTC-A08-BKGD02-1824-01

Channel								
1241:	12	7	12	11	12	12	18	14
1249:	11	10	12	6	7	6	5	7
1257:	8	4	8	5	11	14	6	19
1265:	7	14	10	9	10	8	12	9
1273:	7	9	4	11	9	9	8	12
1281:	12	7	13	7	6	7	8	10
1289:	9	9	6	7	11	11	13	5
1297:	5	6	6	4	10	5	6	7
1305:	10	6	5	3	5	6	8	11
1313:	7	4	12	5	3	2	5	10
1321:	7	6	5	11	9	6	2	10
1329:	5	6	3	6	4	6	4	6
1337:	5	2	3	2	4	5	5	3
1345:	3	2	4	6	2	4	3	8
1353:	7	2	4	6	3	5	6	4
1361:	5	2	3	4	6	5	5	6
1369:	5	4	3	5	6	9	5	6
1377:	10	15	4	6	4	3	1	1
1385:	5	3	5	8	4	3	2	1
1393:	1	4	6	3	3	3	8	5
1401:	6	7	1	6	6	1	9	7
1409:	5	2	4	5	3	3	2	8
1417:	4	2	3	4	4	4	1	4
1425:	1	5	0	1	2	1	5	3
1433:	3	5	3	2	5	1	1	2
1441:	6	4	1	4	2	3	0	2
1449:	5	1	4	5	2	4	3	7
1457:	4	21	95	388	475	197	27	13
1465:	19	14	9	5	1	6	3	5
1473:	2	2	2	1	0	3	3	2
1481:	1	0	2	1	2	2	3	1
1489:	1	0	2	1	3	0	0	3
1497:	2	4	0	1	5	6	2	2
1505:	3	1	2	3	5	3	3	5
1513:	1	1	3	0	1	4	2	1
1521:	4	1	4	3	0	2	4	1
1529:	2	3	1	3	3	1	3	1
1537:	1	3	2	2	2	0	1	3
1545:	0	0	2	0	1	2	1	3
1553:	1	3	3	1	2	1	3	0
1561:	0	2	2	0	1	4	1	0
1569:	4	2	2	2	0	0	4	2
1577:	3	3	2	4	3	2	3	4
1585:	2	3	7	11	8	2	5	2
1593:	4	3	2	0	3	0	0	0
1601:	1	1	5	0	2	0	1	5
1609:	1	1	1	1	5	1	2	1
1617:	1	0	0	10	4	4	7	0
1625:	2	1	0	1	3	3	4	3
1633:	2	2	2	0	3	1	6	1
1641:	1	3	0	0	2	4	2	0
1649:	0	0	2	0	1	1	3	2
1657:	0	3	2	2	6	0	1	2

1665:	0	6	1	4	3	2	0	1

Sample Title: HTC-A08-BKGD02-1824-01

Channel								
1673:	2	1	1	3	4	3	1	1
1681:	1	3	4	2	3	3	3	3
1689:	2	1	4	1	0	1	2	4
1697:	1	2	1	2	1	3	3	3
1705:	0	1	4	0	1	2	2	1
1713:	1	1	1	0	0	1	0	0
1721:	1	0	1	0	1	3	3	4
1729:	14	5	3	1	2	1	0	1
1737:	1	1	3	1	2	1	0	2
1745:	2	3	2	2	0	3	4	1
1753:	1	0	0	2	1	1	2	2
1761:	0	3	18	34	23	8	1	2
1769:	2	3	2	2	1	2	0	1
1777:	1	0	2	1	1	2	4	3
1785:	0	1	1	0	1	0	1	3
1793:	2	1	1	2	2	0	2	1
1801:	2	1	4	2	0	1	2	3
1809:	2	0	3	3	1	4	0	5
1817:	1	1	0	1	1	0	3	3
1825:	0	0	0	2	0	1	0	1
1833:	0	1	4	1	1	3	3	2
1841:	2	2	2	2	1	2	2	3
1849:	2	0	1	1	1	2	0	1
1857:	3	2	0	5	0	4	3	1
1865:	2	2	1	1	0	0	1	0
1873:	0	2	1	0	1	0	2	0
1881:	1	2	1	2	2	1	1	2
1889:	3	1	1	2	3	1	1	2
1897:	1	4	0	0	2	0	1	1
1905:	0	1	1	0	3	0	1	2
1913:	2	2	1	1	2	0	3	0
1921:	0	0	1	1	1	2	0	2
1929:	3	2	2	0	1	3	1	1
1937:	2	1	4	0	2	1	0	4
1945:	1	2	1	1	1	3	0	3
1953:	2	0	2	1	4	0	2	1
1961:	2	0	1	1	0	2	4	2
1969:	0	1	1	2	1	1	2	0
1977:	1	2	1	2	3	1	0	1
1985:	3	2	0	0	2	2	1	2
1993:	1	3	0	1	2	2	0	1
2001:	0	0	0	1	2	0	3	0
2009:	2	2	0	2	0	0	1	3
2017:	0	1	0	2	1	0	0	0
2025:	2	1	1	0	0	0	0	0
2033:	0	0	2	1	2	0	0	0
2041:	3	2	1	0	3	1	1	0
2049:	1	0	0	1	2	1	2	0
2057:	1	1	0	0	1	0	0	0
2065:	0	1	3	1	1	2	1	0
2073:	0	1	1	0	0	4	1	1
2081:	3	2	2	4	0	1	0	2
2089:	0	2	1	0	1	3	0	1

2097:	0	1	2	3	2	6	7	4

Sample Title: HTC-A08-BKGD02-1824-01

Channel								
2105:	3	1	2	2	2	1	4	3
2113:	3	0	0	1	1	2	0	3
2121:	1	0	0	0	2	2	3	2
2129:	1	3	1	0	1	0	0	0
2137:	3	1	1	1	1	0	1	1
2145:	1	1	2	2	1	1	1	3
2153:	2	1	2	0	0	2	0	1
2161:	3	1	1	2	2	0	2	1
2169:	4	0	2	1	1	2	1	1
2177:	2	0	0	1	3	4	1	2
2185:	0	1	3	0	1	1	1	1
2193:	3	1	1	3	0	0	0	1
2201:	1	6	14	4	4	0	1	1
2209:	1	1	1	0	2	1	0	2
2217:	3	0	2	1	1	2	2	3
2225:	0	2	1	2	0	2	3	2
2233:	2	1	0	3	2	1	1	1
2241:	1	0	0	0	1	0	1	1
2249:	0	2	2	3	3	3	1	1
2257:	2	0	1	1	3	1	1	1
2265:	1	1	1	1	0	0	1	1
2273:	1	3	1	1	3	0	0	0
2281:	0	0	1	2	0	0	2	0
2289:	0	0	3	1	0	2	3	6
2297:	1	0	2	1	0	3	2	2
2305:	0	0	1	3	2	2	1	1
2313:	1	1	0	2	1	1	2	0
2321:	2	1	2	3	2	2	0	0
2329:	1	1	2	2	3	2	2	3
2337:	0	1	1	1	3	0	3	2
2345:	4	1	2	0	1	2	2	1
2353:	0	1	0	4	0	3	5	3
2361:	2	1	0	1	4	0	2	2
2369:	1	3	0	2	2	0	0	3
2377:	1	1	0	1	0	0	1	0
2385:	0	2	0	2	0	0	1	2
2393:	0	0	3	1	1	0	2	1
2401:	0	1	1	1	5	0	1	1
2409:	1	1	0	0	2	0	1	1
2417:	1	3	0	1	1	2	0	1
2425:	0	0	1	3	0	0	2	1
2433:	0	1	0	0	0	0	0	0
2441:	1	1	1	0	1	1	3	4
2449:	2	0	1	0	0	2	1	1
2457:	2	4	3	1	1	0	0	1
2465:	1	0	1	1	0	0	1	1
2473:	1	0	2	0	0	0	1	1
2481:	0	0	1	0	1	0	0	0
2489:	1	2	1	0	0	0	0	1
2497:	1	1	0	0	0	0	0	1
2505:	3	0	0	3	0	0	0	0
2513:	0	1	2	0	0	0	3	0
2521:	0	0	1	0	0	0	0	0

2529:	0	0	0	1	1	1	0	1

Sample Title: HTC-A08-BKGD02-1824-01

Channel								
2537:	0	1	2	0	0	1	1	0
2545:	1	0	1	1	2	0	0	0
2553:	0	0	0	0	0	0	2	0
2561:	0	0	1	0	1	0	0	1
2569:	0	0	1	0	1	0	3	0
2577:	0	0	0	0	1	1	0	0
2585:	0	0	0	0	0	1	1	1
2593:	0	0	2	0	1	1	0	0
2601:	0	1	1	1	0	0	0	0
2609:	0	5	5	13	51	45	20	7
2617:	3	3	0	1	0	0	0	0
2625:	0	0	0	1	0	0	1	1
2633:	0	1	0	0	1	0	0	1
2641:	1	0	0	1	0	1	0	0
2649:	0	0	0	0	3	0	0	0
2657:	2	0	0	0	0	1	1	1
2665:	0	2	1	0	0	1	0	1
2673:	0	2	0	0	0	0	1	0
2681:	0	0	0	0	0	0	0	0
2689:	0	0	0	0	0	0	1	0
2697:	0	2	0	0	0	0	2	1
2705:	0	0	0	0	0	0	1	0
2713:	0	1	0	0	0	0	0	0
2721:	0	0	0	0	1	1	1	0
2729:	1	0	0	0	1	0	1	1
2737:	1	0	0	0	1	0	0	1
2745:	0	0	0	0	0	0	0	0
2753:	2	0	2	0	0	0	0	1
2761:	0	1	0	0	0	0	0	0
2769:	0	0	0	0	0	1	1	0
2777:	0	0	0	1	0	1	2	0
2785:	0	0	1	0	0	0	1	0
2793:	1	0	0	0	0	1	0	0
2801:	0	0	0	0	0	0	0	0
2809:	0	0	0	0	0	0	0	1
2817:	2	0	0	1	1	0	0	0
2825:	0	0	0	0	0	0	0	1
2833:	0	0	0	2	0	0	1	0
2841:	0	0	0	2	0	1	0	0
2849:	0	1	0	0	0	1	0	1
2857:	0	1	0	1	0	0	1	0
2865:	2	0	0	0	0	0	0	1
2873:	0	0	0	0	0	0	0	0
2881:	0	0	1	0	0	0	1	2
2889:	0	0	0	0	0	0	0	0
2897:	0	0	1	0	0	0	0	1
2905:	1	0	0	1	0	0	0	0
2913:	0	1	0	0	0	0	0	0
2921:	0	0	1	0	0	0	0	1
2929:	0	0	0	0	1	0	0	0
2937:	0	0	0	0	2	0	1	1
2945:	0	0	2	0	0	0	0	0
2953:	0	0	0	0	1	0	0	0

2961:	2	0	0	0	0	0	0	0

Sample Title: HTC-A08-BKGD02-1824-01

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

3393:	0	1	0	0	0	0	0	0

Sample Title: HTC-A08-BKGD02-1824-01

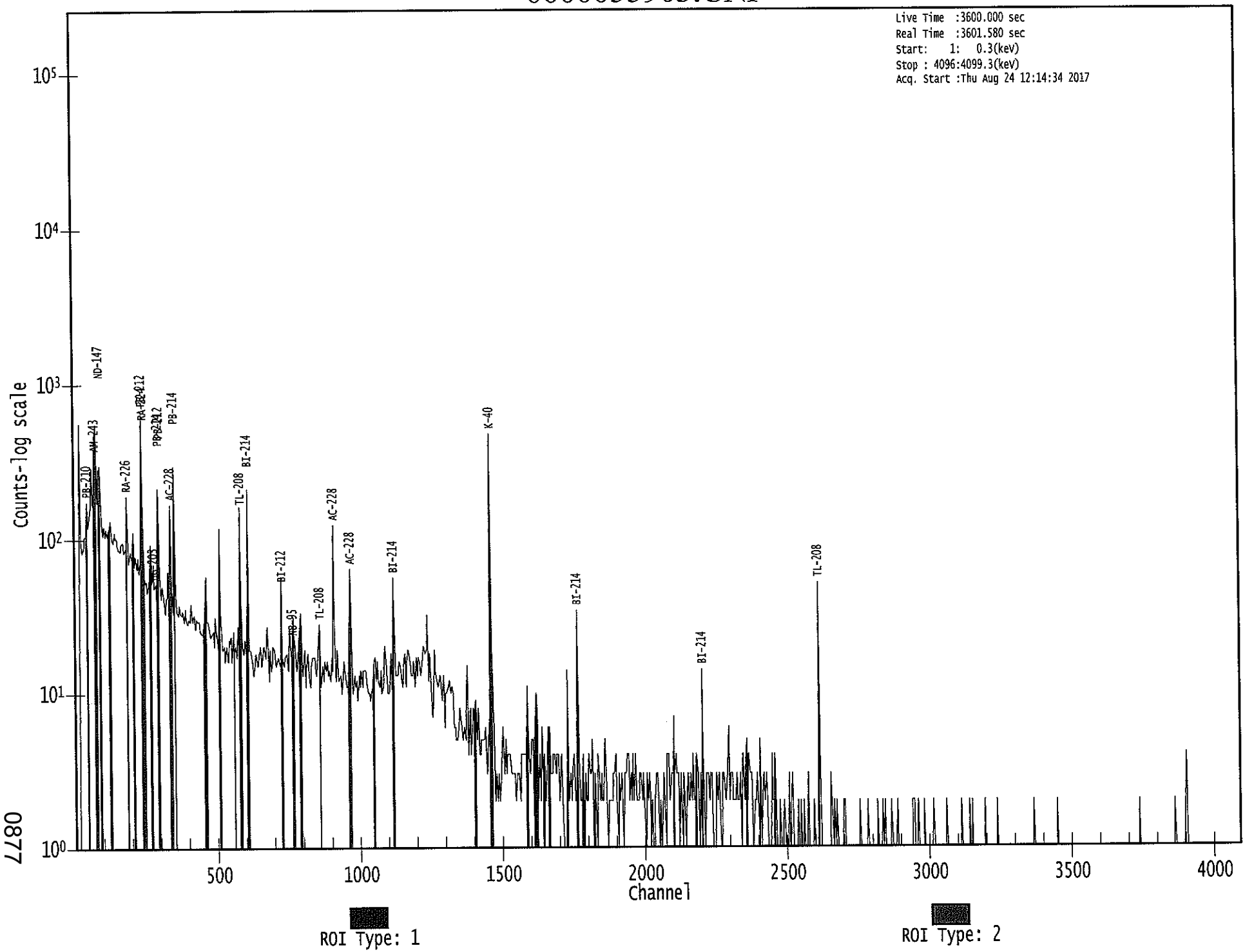
Channel								
3401:	0	1	0	0	0	0	0	0
3409:	0	0	0	0	0	0	0	0
3417:	0	0	0	0	0	0	0	0
3425:	0	0	1	0	0	1	0	0
3433:	0	0	0	1	0	0	0	0
3441:	0	0	0	0	0	0	0	0
3449:	2	0	0	0	0	0	0	0
3457:	0	0	0	0	0	0	0	1
3465:	0	1	0	1	0	0	0	0
3473:	0	0	0	0	1	0	0	1
3481:	0	0	0	0	0	0	0	0
3489:	0	0	0	0	0	0	0	0
3497:	0	1	0	1	0	0	0	0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

3825:	0	0	0	0	0	0	0	0

Sample Title: HTC-A08-BKGD02-1824-01

Channel								
3833:	0	0	0	0	0	0	0	1
3841:	0	1	0	0	0	0	0	1
3849:	0	0	0	1	0	0	0	0
3857:	0	0	0	0	0	2	0	1
3865:	0	0	0	1	1	0	0	1
3873:	0	0	0	0	0	0	1	0
3881:	0	0	0	0	1	1	0	0
3889:	0	0	0	0	0	0	0	1
3897:	0	1	1	0	0	0	1	4
3905:	1	0	1	1	0	0	0	0
3913:	0	0	0	0	0	1	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	1	0	0
3945:	0	0	0	0	0	0	0	1
3953:	0	0	0	1	0	0	1	0
3961:	0	0	1	0	0	0	0	0
3969:	1	0	0	0	0	0	0	0
3977:	0	0	0	0	0	0	1	0
3985:	1	0	0	1	0	0	0	0
3993:	0	0	0	1	0	0	0	0
4001:	0	0	1	0	0	0	0	0
4009:	1	1	0	0	0	0	0	0
4017:	0	0	0	0	0	0	1	0
4025:	0	1	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	1	0	0	0	0	0
4057:	0	0	0	0	0	0	0	0
4065:	0	0	1	0	1	0	0	0
4073:	0	0	0	0	0	0	0	0
4081:	0	0	0	0	1	0	0	0
4089:	1	0	0	0	0	0	1	0

0000055903.CNF



0877

Apex-Gamma

Analysis Report for 1707091-17
HTC-A08-BKGD02-2430-01

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 1707091-17
Sample Description	: HTC-A08-BKGD02-2430-01
Sample Type	: SOIL
Sample Size	: 6.555E+02 grams
Facility	: Countroom
Sample Taken On	: 5/15/2017 12:59:43PM
Acquisition Started	: 8/24/2017 12:14:42PM
Procedure	: GAS-1602 pCi
Operator	: Administrator
Detector Name	: GE2
Geometry	: GAS-1602
Live Time	: 3600.0 seconds
Real Time	: 3601.2 seconds
Dead Time	: 0.03 %
Peak Locate Threshold	: 2.50
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 29 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 8/19/2017
Efficiency Calibration Used Done On	: 1/14/2017
Efficiency Calibration Description	:
Sample Number	: 55904

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

Analysis Report for 1707091-17

HTC-A08-BKGD02-2430-01

PEAK LOCATE REPORT

Peak Locate Performed on : 8/24/2017 1:15:15PM
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	76.32	76.63	0.0000	0.00
2	93.67	93.96	0.0000	0.00
3	99.42	99.71	0.0000	0.00
4	128.45	128.70	0.0000	0.00
5	143.34	143.58	0.0000	0.00
6	154.10	154.33	0.0000	0.00
7	168.94	169.15	0.0000	0.00
8	174.10	174.31	0.0000	0.00
9	186.25	186.44	0.0000	0.00
10	209.69	209.86	0.0000	0.00
11	217.01	217.17	0.0000	0.00
12	239.13	239.26	0.0000	0.00
13	270.48	270.59	0.0000	0.00
14	295.16	295.24	0.0000	0.00
15	299.87	299.95	0.0000	0.00
16	328.15	328.19	0.0000	0.00
17	338.28	338.31	0.0000	0.00
18	351.91	351.93	0.0000	0.00
19	409.63	409.58	0.0000	0.00
20	463.19	463.10	0.0000	0.00
21	510.80	510.66	0.0000	0.00
22	580.19	579.97	0.0000	0.00
23	583.43	583.21	0.0000	0.00
24	609.31	609.07	0.0000	0.00
25	727.49	727.13	0.0000	0.00
26	770.12	769.72	0.0000	0.00
27	793.69	793.26	0.0000	0.00
28	861.26	860.77	0.0000	0.00
29	903.18	902.65	0.0000	0.00
30	911.46	910.92	0.0000	0.00
31	965.79	965.20	0.0000	0.00
32	969.43	968.84	0.0000	0.00
33	1000.75	1000.13	0.0000	0.00
34	1121.01	1120.28	0.0000	0.00
35	1200.80	1200.00	0.0000	0.00
36	1208.10	1207.29	0.0000	0.00
37	1238.50	1237.67	0.0000	0.00
38	1461.13	1460.11	0.0000	0.00
39	1585.13	1584.00	0.0000	0.00
40	1593.13	1592.00	0.0000	0.00
41	1622.09	1620.93	0.0000	0.00
42	1631.41	1630.24	0.0000	0.00

Analysis Report for 1707091-17

HTC-A08-BKGD02-2430-01

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
43	1637.66	1636.49	0.0000	0.00
44	1729.81	1728.56	0.0000	0.00
45	1764.89	1763.62	0.0000	0.00
46	1847.68	1846.35	0.0000	0.00
47	1886.90	1885.53	0.0000	0.00
48	1913.38	1912.00	0.0000	0.00
49	1974.68	1973.25	0.0000	0.00
50	2035.36	2033.88	0.0000	0.00
51	2054.58	2053.09	0.0000	0.00
52	2104.39	2102.87	0.0000	0.00
53	2165.02	2163.45	0.0000	0.00
54	2203.32	2201.73	0.0000	0.00
55	2448.78	2447.02	0.0000	0.00
56	2614.49	2612.62	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1707091-17

HTC-A08-BKGD02-2430-01

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 8/24/2017 1:15:15PM

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	76.32	73 -	83	76.63	9.19E+02	155.69	2.67E+03	3.74
	2	93.67	92 -	97	93.96	2.55E+02	80.67	1.06E+03	2.10
	3	99.42	98 -	102	99.71	5.76E+01	58.98	7.21E+02	2.00
	4	128.45	126 -	132	128.70	8.90E+01	77.07	1.02E+03	1.52
	5	143.34	140 -	147	143.58	8.48E+01	86.28	1.19E+03	2.20
	6	154.10	152 -	157	154.33	7.37E+01	65.15	7.87E+02	1.37
	7	168.94	167 -	172	169.15	5.10E+01	57.58	6.24E+02	3.58
	8	174.10	173 -	176	174.31	4.47E+01	43.41	4.27E+02	1.33
	9	186.25	182 -	190	186.44	2.02E+02	85.27	9.85E+02	1.94
	10	209.69	206 -	213	209.86	9.47E+01	73.62	8.33E+02	1.68
	11	217.01	214 -	221	217.17	7.75E+01	67.59	7.05E+02	3.57
	12	239.13	235 -	246	239.26	1.03E+03	108.65	9.51E+02	1.40
	13	270.48	268 -	273	270.59	6.68E+01	48.57	4.20E+02	2.48
M	14	295.16	293 -	303	295.24	2.83E+02	48.85	2.80E+02	1.51
m	15	299.87	293 -	303	299.95	5.79E+01	44.58	3.65E+02	1.90
	16	328.15	325 -	331	328.19	7.61E+01	48.23	3.68E+02	1.43
	17	338.28	333 -	343	338.31	2.08E+02	69.22	5.29E+02	1.87
	18	351.91	348 -	354	351.93	4.64E+02	57.96	2.74E+02	1.42
	19	409.63	405 -	414	409.58	4.66E+01	52.00	3.59E+02	2.35
	20	463.19	460 -	467	463.10	5.70E+01	39.65	2.24E+02	1.53
	21	510.80	506 -	516	510.66	2.07E+02	51.86	2.50E+02	2.09
M	22	580.19	578 -	586	579.97	2.41E+01	26.69	1.04E+02	2.23
m	23	583.43	578 -	586	583.21	2.72E+02	41.73	1.23E+02	1.92
	24	609.31	604 -	613	609.07	3.61E+02	55.56	2.35E+02	1.78
	25	727.49	723 -	730	727.13	8.09E+01	34.29	1.38E+02	1.56
	26	770.12	765 -	774	769.72	4.52E+01	41.23	2.10E+02	1.59
	27	793.69	788 -	800	793.26	4.55E+01	42.89	1.95E+02	5.20
	28	861.26	856 -	866	860.77	3.14E+01	36.82	1.61E+02	1.97
M	29	903.18	901 -	918	902.65	2.21E+01	15.49	4.40E+01	2.61
m	30	911.46	901 -	918	910.92	2.15E+02	34.73	6.60E+01	1.91
M	31	965.79	962 -	975	965.20	3.07E+01	30.26	1.18E+02	2.21
m	32	969.43	962 -	975	968.84	1.29E+02	33.46	1.03E+02	2.22
	33	1000.75	996 -	1004	1000.13	2.85E+01	29.09	1.13E+02	1.69
	34	1121.01	1117 -	1125	1120.28	7.90E+01	33.69	1.26E+02	2.25
M	35	1200.80	1196 -	1216	1200.00	2.26E+01	25.28	8.70E+01	2.20
m	36	1208.10	1196 -	1216	1207.29	2.14E+01	28.00	1.14E+02	2.70
	37	1238.50	1233 -	1241	1237.67	4.97E+01	34.53	1.53E+02	2.13
	38	1461.13	1453 -	1466	1460.11	9.04E+02	66.61	9.12E+01	2.36
M	39	1585.13	1582 -	1596	1584.00	7.99E+00	5.55	5.82E+00	2.47
m	40	1593.13	1582 -	1596	1592.00	1.42E+01	12.68	8.66E+00	2.47

Analysis Report for 1707091-17

HTC-A08-BKGD02-2430-01

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
41	1622.09	1618 -	1625	1620.93	1.32E+01	9.80	5.63E+00	1.99
42	1631.41	1626 -	1634	1630.24	1.54E+01	10.98	9.10E+00	1.70
43	1637.66	1634 -	1638	1636.49	6.67E+00	6.96	4.67E+00	1.20
44	1729.81	1722 -	1734	1728.56	2.25E+01	14.16	1.30E+01	10.37
45	1764.89	1758 -	1769	1763.62	5.12E+01	21.07	2.95E+01	2.02
46	1847.68	1844 -	1848	1846.35	6.67E+00	6.96	4.67E+00	1.43
47	1886.90	1882 -	1888	1885.53	6.31E+00	6.65	3.38E+00	1.59
48	1913.38	1909 -	1914	1912.00	8.00E+00	5.66	0.00E+00	2.00
49	1974.68	1968 -	1977	1973.25	8.00E+00	10.10	1.00E+01	1.31
50	2035.36	2029 -	2038	2033.88	1.15E+01	9.00	4.93E+00	1.59
51	2054.58	2049 -	2057	2053.09	1.10E+01	6.63	0.00E+00	3.16
52	2104.39	2098 -	2107	2102.87	2.25E+01	12.57	9.04E+00	4.89
53	2165.02	2160 -	2165	2163.45	4.33E+00	5.74	3.33E+00	1.66
54	2203.32	2198 -	2204	2201.73	9.25E+00	10.63	1.35E+01	3.34
55	2448.78	2443 -	2451	2447.02	1.41E+01	9.18	3.88E+00	1.95
56	2614.49	2605 -	2618	2612.62	9.93E+01	21.47	7.48E+00	3.70

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 : 8/24/2017 1:15:15PM

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	76.32	73 -	83	9.19E+02	155.69	2.67E+03	1.18E+02
2	93.67	92 -	97	2.55E+02	80.67	1.06E+03	6.09E+01
3	99.42	98 -	102	5.76E+01	58.98	7.21E+02	4.68E+01
4	128.45	126 -	132	8.90E+01	77.07	1.02E+03	6.14E+01
5	143.34	140 -	147	8.48E+01	86.28	1.19E+03	6.93E+01
6	154.10	152 -	157	7.37E+01	65.15	7.87E+02	5.17E+01
7	168.94	167 -	172	5.10E+01	57.58	6.24E+02	4.58E+01
8	174.10	173 -	176	4.47E+01	43.41	4.27E+02	3.39E+01
9	186.25	182 -	190	2.02E+02	85.27	9.85E+02	6.61E+01
10	209.69	206 -	213	9.47E+01	73.62	8.33E+02	5.84E+01
11	217.01	214 -	221	7.75E+01	67.59	7.05E+02	5.36E+01
12	239.13	235 -	246	1.03E+03	108.65	9.51E+02	2.15E+01

Analysis Report for 1707091-17

HTC-A08-BKGD02-2430-01

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	13	270.48	268 -	273	6.68E+01	48.57	4.20E+02	3.76E+01
M	14	295.16	293 -	303	2.83E+02	48.85	2.80E+02	2.75E+01
m	15	299.87	293 -	303	5.79E+01	44.58	3.65E+02	3.14E+01
	16	328.15	325 -	331	7.61E+01	48.23	3.68E+02	3.70E+01
	17	338.28	333 -	343	2.08E+02	69.22	5.29E+02	5.17E+01
	18	351.91	348 -	354	4.64E+02	57.96	2.74E+02	3.19E+01
	19	409.63	405 -	414	4.66E+01	52.00	3.59E+02	4.12E+01
	20	463.19	460 -	467	5.70E+01	39.65	2.24E+02	3.01E+01
	21	510.80	506 -	516	2.07E+02	51.86	2.50E+02	3.55E+01
M	22	580.19	578 -	586	2.41E+01	26.69	1.04E+02	1.68E+01
m	23	583.43	578 -	586	2.72E+02	41.73	1.23E+02	1.82E+01
	24	609.31	604 -	613	3.61E+02	55.56	2.35E+02	3.33E+01
	25	727.49	723 -	730	8.09E+01	34.29	1.38E+02	2.40E+01
	26	770.12	765 -	774	4.52E+01	41.23	2.10E+02	3.20E+01
	27	793.69	788 -	800	4.55E+01	42.89	1.95E+02	3.35E+01
	28	861.26	856 -	866	3.14E+01	36.82	1.61E+02	2.88E+01
M	29	903.18	901 -	918	2.21E+01	15.49	4.40E+01	1.09E+01
m	30	911.46	901 -	918	2.15E+02	34.73	6.60E+01	1.34E+01
M	31	965.79	962 -	975	3.07E+01	30.26	1.18E+02	1.78E+01
m	32	969.43	962 -	975	1.29E+02	33.46	1.03E+02	1.66E+01
	33	1000.75	996 -	1004	2.85E+01	29.09	1.13E+02	2.22E+01
	34	1121.01	1117 -	1125	7.90E+01	33.69	1.26E+02	2.35E+01
M	35	1200.80	1196 -	1216	2.26E+01	25.28	8.70E+01	1.53E+01
m	36	1208.10	1196 -	1216	2.14E+01	28.00	1.14E+02	1.76E+01
	37	1238.50	1233 -	1241	4.97E+01	34.53	1.53E+02	2.59E+01
	38	1461.13	1453 -	1466	9.04E+02	66.61	9.12E+01	2.35E+01
M	39	1585.13	1582 -	1596	7.99E+00	5.55	5.82E+00	3.97E+00
m	40	1593.13	1582 -	1596	1.42E+01	12.68	8.66E+00	4.84E+00
	41	1622.09	1618 -	1625	1.32E+01	9.80	5.63E+00	5.41E+00
	42	1631.41	1626 -	1634	1.54E+01	10.98	9.10E+00	6.30E+00
	43	1637.66	1634 -	1638	6.67E+00	6.96	4.67E+00	3.84E+00
	44	1729.81	1722 -	1734	2.25E+01	14.16	1.30E+01	8.64E+00
	45	1764.89	1758 -	1769	5.12E+01	21.07	2.95E+01	1.27E+01
	46	1847.68	1844 -	1848	6.67E+00	6.96	4.67E+00	3.84E+00
	47	1886.90	1882 -	1888	6.31E+00	6.65	3.38E+00	3.58E+00
	48	1913.38	1909 -	1914	8.00E+00	5.66	0.00E+00	0.00E+00
	49	1974.68	1968 -	1977	8.00E+00	10.10	1.00E+01	6.88E+00
	50	2035.36	2029 -	2038	1.15E+01	9.00	4.93E+00	4.85E+00
	51	2054.58	2049 -	2057	1.10E+01	6.63	0.00E+00	0.00E+00
	52	2104.39	2098 -	2107	2.25E+01	12.57	9.04E+00	6.78E+00
	53	2165.02	2160 -	2165	4.33E+00	5.74	3.33E+00	3.25E+00
	54	2203.32	2198 -	2204	9.25E+00	10.63	1.35E+01	7.17E+00
	55	2448.78	2443 -	2451	1.41E+01	9.18	3.88E+00	4.35E+00
	56	2614.49	2605 -	2618	9.93E+01	21.47	7.48E+00	6.57E+00

Analysis Report for 1707091-17

HTC-A08-BKGD02-2430-01

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 : 8/24/2017 1:15:15PM

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	76.32	73 -	83	76.63	9.19E+02	155.69	2.67E+03	.....
	2	93.67	92 -	97	93.96	2.55E+02	80.67	1.06E+03	GA-67
	3	99.42	98 -	102	99.71	5.76E+01	58.98	7.21E+02	.....
	4	128.45	126 -	132	128.70	8.90E+01	77.07	1.02E+03	.....
	5	143.34	140 -	147	143.58	8.48E+01	86.28	1.19E+03	U-235
	6	154.10	152 -	157	154.33	7.37E+01	65.15	7.87E+02	CS-136
	7	168.94	167 -	172	169.15	5.10E+01	57.58	6.24E+02	.....
	8	174.10	173 -	176	174.31	4.47E+01	43.41	4.27E+02	.....
	9	186.25	182 -	190	186.44	2.02E+02	85.27	9.85E+02	RA-226
	10	209.69	206 -	213	209.86	9.47E+01	73.62	8.33E+02	CM-243 GA-67
	11	217.01	214 -	221	217.17	7.75E+01	67.59	7.05E+02	.....
	12	239.13	235 -	246	239.26	1.03E+03	108.65	9.51E+02	PB-212
	13	270.48	268 -	273	270.59	6.68E+01	48.57	4.20E+02	.....
M	14	295.16	293 -	303	295.24	2.83E+02	48.85	2.80E+02	PB-214
m	15	299.87	293 -	303	299.95	5.79E+01	44.58	3.65E+02	BI-210M PB-212 GA-67
	16	328.15	325 -	331	328.19	7.61E+01	48.23	3.68E+02	LA-140
	17	338.28	333 -	343	338.31	2.08E+02	69.22	5.29E+02	AC-228
	18	351.91	348 -	354	351.93	4.64E+02	57.96	2.74E+02	PB-214
	19	409.63	405 -	414	409.58	4.66E+01	52.00	3.59E+02	.....
	20	463.19	460 -	467	463.10	5.70E+01	39.65	2.24E+02	SB-125
	21	510.80	506 -	516	510.66	2.07E+02	51.86	2.50E+02	.....
M	22	580.19	578 -	586	579.97	2.41E+01	26.69	1.04E+02	.....
m	23	583.43	578 -	586	583.21	2.72E+02	41.73	1.23E+02	TL-208
	24	609.31	604 -	613	609.07	3.61E+02	55.56	2.35E+02	BI-214
	25	727.49	723 -	730	727.13	8.09E+01	34.29	1.38E+02	BI-212
	26	770.12	765 -	774	769.72	4.52E+01	41.23	2.10E+02	.....
	27	793.69	788 -	800	793.26	4.55E+01	42.89	1.95E+02	.....

Analysis Report for 1707091-17

HTC-A08-BKGD02-2430-01

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	28	861.26	856 -	866	860.77	3.14E+01	36.82	1.61E+02	TL-208
M	29	903.18	901 -	918	902.65	2.21E+01	15.49	4.40E+01	.....
m	30	911.46	901 -	918	910.92	2.15E+02	34.73	6.60E+01	TL-204
									AC-228
M	31	965.79	962 -	975	965.20	3.07E+01	30.26	1.18E+02	.....
m	32	969.43	962 -	975	968.84	1.29E+02	33.46	1.03E+02	AC-228
	33	1000.75	996 -	1004	1000.13	2.85E+01	29.09	1.13E+02	PA-234M
	34	1121.01	1117 -	1125	1120.28	7.90E+01	33.69	1.26E+02	TA-182
									SC-46
									BI-214
M	35	1200.80	1196 -	1216	1200.00	2.26E+01	25.28	8.70E+01	.....
m	36	1208.10	1196 -	1216	1207.29	2.14E+01	28.00	1.14E+02	.....
	37	1238.50	1233 -	1241	1237.67	4.97E+01	34.53	1.53E+02	CO-56
	38	1461.13	1453 -	1466	1460.11	9.04E+02	66.61	9.12E+01	K-40
M	39	1585.13	1582 -	1596	1584.00	7.99E+00	5.55	5.82E+00	.....
m	40	1593.13	1582 -	1596	1592.00	1.42E+01	12.68	8.66E+00	.....
	41	1622.09	1618 -	1625	1620.93	1.32E+01	9.80	5.63E+00	.....
	42	1631.41	1626 -	1634	1630.24	1.54E+01	10.98	9.10E+00	.....
	43	1637.66	1634 -	1638	1636.49	6.67E+00	6.96	4.67E+00	.....
	44	1729.81	1722 -	1734	1728.56	2.25E+01	14.16	1.30E+01	.....
	45	1764.89	1758 -	1769	1763.62	5.12E+01	21.07	2.95E+01	BI-214
	46	1847.68	1844 -	1848	1846.35	6.67E+00	6.96	4.67E+00	.....
	47	1886.90	1882 -	1888	1885.53	6.31E+00	6.65	3.38E+00	.....
	48	1913.38	1909 -	1914	1912.00	8.00E+00	5.66	0.00E+00	.....
	49	1974.68	1968 -	1977	1973.25	8.00E+00	10.10	1.00E+01	.....
	50	2035.36	2029 -	2038	2033.88	1.15E+01	9.00	4.93E+00	.....
	51	2054.58	2049 -	2057	2053.09	1.10E+01	6.63	0.00E+00	.....
	52	2104.39	2098 -	2107	2102.87	2.25E+01	12.57	9.04E+00	.....
	53	2165.02	2160 -	2165	2163.45	4.33E+00	5.74	3.33E+00	.....
	54	2203.32	2198 -	2204	2201.73	9.25E+00	10.63	1.35E+01	BI-214
	55	2448.78	2443 -	2451	2447.02	1.41E+01	9.18	3.88E+00	.....
	56	2614.49	2605 -	2618	2612.62	9.93E+01	21.47	7.48E+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 : 8/24/2017 1:15:15PM

Analysis Report for 1707091-17

HTC-A08-BKGD02-2430-01

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	76.32	9.19E+02	155.69	2.63E-02	2.12E-03
	2	93.67	2.55E+02	80.67	2.70E-02	2.32E-03
	3	99.42	5.76E+01	58.98	2.68E-02	2.21E-03
	4	128.45	8.90E+01	77.07	2.48E-02	1.75E-03
	5	143.34	8.48E+01	86.28	2.36E-02	1.70E-03
	6	154.10	7.37E+01	65.15	2.27E-02	1.66E-03
	7	168.94	5.10E+01	57.58	2.15E-02	1.61E-03
	8	174.10	4.47E+01	43.41	2.12E-02	1.59E-03
	9	186.25	2.02E+02	85.27	2.03E-02	1.53E-03
	10	209.69	9.47E+01	73.62	1.88E-02	1.43E-03
	11	217.01	7.75E+01	67.59	1.84E-02	1.39E-03
	12	239.13	1.03E+03	108.65	1.72E-02	1.30E-03
	13	270.48	6.68E+01	48.57	1.58E-02	1.16E-03
M	14	295.16	2.83E+02	48.85	1.48E-02	1.10E-03
m	15	299.87	5.79E+01	44.58	1.47E-02	1.09E-03
	16	328.15	7.61E+01	48.23	1.38E-02	1.05E-03
	17	338.28	2.08E+02	69.22	1.35E-02	1.04E-03
	18	351.91	4.64E+02	57.96	1.31E-02	1.02E-03
	19	409.63	4.66E+01	52.00	1.17E-02	9.53E-04
	20	463.19	5.70E+01	39.65	1.06E-02	9.07E-04
	21	510.80	2.07E+02	51.86	9.87E-03	8.65E-04
M	22	580.19	2.41E+01	26.69	8.94E-03	8.05E-04
m	23	583.43	2.72E+02	41.73	8.90E-03	8.02E-04
	24	609.31	3.61E+02	55.56	8.60E-03	7.80E-04
	25	727.49	8.09E+01	34.29	7.46E-03	6.71E-04
	26	770.12	4.52E+01	41.23	7.13E-03	6.29E-04
	27	793.69	4.55E+01	42.89	6.95E-03	6.07E-04
	28	861.26	3.14E+01	36.82	6.50E-03	5.42E-04
M	29	903.18	2.21E+01	15.49	6.26E-03	5.04E-04
m	30	911.46	2.15E+02	34.73	6.21E-03	5.01E-04
M	31	965.79	3.07E+01	30.26	5.92E-03	4.83E-04
m	32	969.43	1.29E+02	33.46	5.90E-03	4.81E-04
	33	1000.75	2.85E+01	29.09	5.75E-03	4.70E-04
	34	1121.01	7.90E+01	33.69	5.24E-03	4.28E-04
M	35	1200.80	2.26E+01	25.28	4.96E-03	4.13E-04
m	36	1208.10	2.14E+01	28.00	4.94E-03	4.13E-04
	37	1238.50	4.97E+01	34.53	4.84E-03	4.16E-04
	38	1461.13	9.04E+02	66.61	4.26E-03	3.88E-04
M	39	1585.13	7.99E+00	5.55	4.02E-03	3.52E-04
m	40	1593.13	1.42E+01	12.68	4.01E-03	3.49E-04
	41	1622.09	1.32E+01	9.80	3.96E-03	3.41E-04
	42	1631.41	1.54E+01	10.98	3.94E-03	3.38E-04
	43	1637.66	6.67E+00	6.96	3.93E-03	3.37E-04
	44	1729.81	2.25E+01	14.16	3.79E-03	3.10E-04
	45	1764.89	5.12E+01	21.07	3.75E-03	3.00E-04
	46	1847.68	6.67E+00	6.96	3.64E-03	2.79E-04
	47	1886.90	6.31E+00	6.65	3.60E-03	2.79E-04
	48	1913.38	8.00E+00	5.66	3.57E-03	2.79E-04
	49	1974.68	8.00E+00	10.10	3.51E-03	2.79E-04
	50	2035.36	1.15E+01	9.00	3.46E-03	2.79E-04
	51	2054.58	1.10E+01	6.63	3.44E-03	2.79E-04
	52	2104.39	2.25E+01	12.57	3.41E-03	2.79E-04
	53	2165.02	4.33E+00	5.74	3.36E-03	2.79E-04

Analysis Report for 1707091-17

HTC-A08-BKGD02-2430-01

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
54	2203.32	9.25E+00	10.63	3.34E-03	2.79E-04
55	2448.78	1.41E+01	9.18	3.23E-03	2.79E-04
56	2614.49	9.93E+01	21.47	3.20E-03	2.79E-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 : 8/24/2017 1:15:15PM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000055574.CNF

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	1	76.32	9.19E+02	155.69			9.19E+02	1.56E+02
	2	93.67	2.55E+02	80.67	4.88E+01	1.30E+00	2.06E+02	8.07E+01
	3	99.42	5.76E+01	58.98			5.76E+01	5.90E+01
	4	128.45	8.90E+01	77.07			8.90E+01	7.71E+01
	5	143.34	8.48E+01	86.28	1.06E+01	1.02E+01	7.42E+01	8.69E+01
	6	154.10	7.37E+01	65.15			7.37E+01	6.51E+01
	7	168.94	5.10E+01	57.58			5.10E+01	5.76E+01
	8	174.10	4.47E+01	43.41			4.47E+01	4.34E+01
	9	186.25	2.02E+02	85.27	3.48E+01	7.32E+00	1.67E+02	8.56E+01
	10	209.69	9.47E+01	73.62			9.47E+01	7.36E+01
	11	217.01	7.75E+01	67.59			7.75E+01	6.76E+01
	12	239.13	1.03E+03	108.65	7.09E+00	6.85E+00	1.02E+03	1.09E+02
	13	270.48	6.68E+01	48.57			6.68E+01	4.86E+01
M	14	295.16	2.83E+02	48.85			2.83E+02	4.89E+01
m	15	299.87	5.79E+01	44.58			5.79E+01	4.46E+01
	16	328.15	7.61E+01	48.23			7.61E+01	4.82E+01
	17	338.28	2.08E+02	69.22			2.08E+02	6.92E+01
	18	351.91	4.64E+02	57.96	1.04E+01	5.08E+00	4.53E+02	5.82E+01
	19	409.63	4.66E+01	52.00			4.66E+01	5.20E+01
	20	463.19	5.70E+01	39.65			5.70E+01	3.96E+01
	21	510.80	2.07E+02	51.86	7.08E+01	4.94E+00	1.36E+02	5.21E+01
M	22	580.19	2.41E+01	26.69			2.41E+01	2.67E+01
m	23	583.43	2.72E+02	41.73	5.65E+00	3.57E+00	2.66E+02	4.19E+01
	24	609.31	3.61E+02	55.56	1.07E+01	3.96E+00	3.50E+02	5.57E+01
	25	727.49	8.09E+01	34.29			8.09E+01	3.43E+01
	26	770.12	4.52E+01	41.23			4.52E+01	4.12E+01
	27	793.69	4.55E+01	42.89			4.55E+01	4.29E+01

Analysis Report for 1707091-17

HTC-A08-BKGD02-2430-01

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	28	861.26	3.14E+01	36.82			3.14E+01	3.68E+01
M	29	903.18	2.21E+01	15.49			2.21E+01	1.55E+01
m	30	911.46	2.15E+02	34.73	2.63E+00	2.49E+00	2.13E+02	3.48E+01
M	31	965.79	3.07E+01	30.26			3.07E+01	3.03E+01
m	32	969.43	1.29E+02	33.46			1.29E+02	3.35E+01
	33	1000.75	2.85E+01	29.09			2.85E+01	2.91E+01
	34	1121.01	7.90E+01	33.69	2.45E+00	2.38E+00	7.65E+01	3.38E+01
M	35	1200.80	2.26E+01	25.28			2.26E+01	2.53E+01
m	36	1208.10	2.14E+01	28.00			2.14E+01	2.80E+01
	37	1238.50	4.97E+01	34.53			4.97E+01	3.45E+01
	38	1461.13	9.04E+02	66.61	5.90E+00	2.63E+00	8.99E+02	6.67E+01
M	39	1585.13	7.99E+00	5.55			7.99E+00	5.55E+00
m	40	1593.13	1.42E+01	12.68			1.42E+01	1.27E+01
	41	1622.09	1.32E+01	9.80			1.32E+01	9.80E+00
	42	1631.41	1.54E+01	10.98			1.54E+01	1.10E+01
	43	1637.66	6.67E+00	6.96			6.67E+00	6.96E+00
	44	1729.81	2.25E+01	14.16			2.25E+01	1.42E+01
	45	1764.89	5.12E+01	21.07	3.33E+00	1.73E+00	4.79E+01	2.11E+01
	46	1847.68	6.67E+00	6.96			6.67E+00	6.96E+00
	47	1886.90	6.31E+00	6.65			6.31E+00	6.65E+00
	48	1913.38	8.00E+00	5.66			8.00E+00	5.66E+00
	49	1974.68	8.00E+00	10.10			8.00E+00	1.01E+01
	50	2035.36	1.15E+01	9.00			1.15E+01	9.00E+00
	51	2054.58	1.10E+01	6.63			1.10E+01	6.63E+00
	52	2104.39	2.25E+01	12.57			2.25E+01	1.26E+01
	53	2165.02	4.33E+00	5.74			4.33E+00	5.74E+00
	54	2203.32	9.25E+00	10.63			9.25E+00	1.06E+01
	55	2448.78	1.41E+01	9.18			1.41E+01	9.18E+00
	56	2614.49	9.93E+01	21.47	4.77E+00	1.52E+00	9.45E+01	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 : 8/24/2017 1:15:15PM

Ref. Peak Energy : 0.00 Reference Date :
Peak Ratio : 0.00 Uncertainty : 0.00
Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000055574.CNF

Corrected Area is: Original * Peak Ratio - Background

Analysis Report for 1707091-17

HTC-A08-BKGD02-2430-01

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	1	76.32	9.19E+02	155.69			9.19E+02	1.56E+02
	2	93.67	2.55E+02	80.67	4.88E+01	1.30E+00	2.06E+02	8.07E+01
	3	99.42	5.76E+01	58.98			5.76E+01	5.90E+01
	4	128.45	8.90E+01	77.07			8.90E+01	7.71E+01
	5	143.34	8.48E+01	86.28	1.06E+01	1.02E+01	7.42E+01	8.69E+01
	6	154.10	7.37E+01	65.15			7.37E+01	6.51E+01
	7	168.94	5.10E+01	57.58			5.10E+01	5.76E+01
	8	174.10	4.47E+01	43.41			4.47E+01	4.34E+01
	9	186.25	2.02E+02	85.27	3.48E+01	7.32E+00	1.67E+02	8.56E+01
	10	209.69	9.47E+01	73.62			9.47E+01	7.36E+01
	11	217.01	7.75E+01	67.59			7.75E+01	6.76E+01
	12	239.13	1.03E+03	108.65	7.09E+00	6.85E+00	1.02E+03	1.09E+02
	13	270.48	6.68E+01	48.57			6.68E+01	4.86E+01
M	14	295.16	2.83E+02	48.85			2.83E+02	4.89E+01
m	15	299.87	5.79E+01	44.58			5.79E+01	4.46E+01
	16	328.15	7.61E+01	48.23			7.61E+01	4.82E+01
	17	338.28	2.08E+02	69.22			2.08E+02	6.92E+01
	18	351.91	4.64E+02	57.96	1.04E+01	5.08E+00	4.53E+02	5.82E+01
	19	409.63	4.66E+01	52.00			4.66E+01	5.20E+01
	20	463.19	5.70E+01	39.65			5.70E+01	3.96E+01
	21	510.80	2.07E+02	51.86	7.08E+01	4.94E+00	1.36E+02	5.21E+01
M	22	580.19	2.41E+01	26.69			2.41E+01	2.67E+01
m	23	583.43	2.72E+02	41.73	5.65E+00	3.57E+00	2.66E+02	4.19E+01
	24	609.31	3.61E+02	55.56	1.07E+01	3.96E+00	3.50E+02	5.57E+01
	25	727.49	8.09E+01	34.29			8.09E+01	3.43E+01
	26	770.12	4.52E+01	41.23			4.52E+01	4.12E+01
	27	793.69	4.55E+01	42.89			4.55E+01	4.29E+01
	28	861.26	3.14E+01	36.82			3.14E+01	3.68E+01
M	29	903.18	2.21E+01	15.49			2.21E+01	1.55E+01
m	30	911.46	2.15E+02	34.73	2.63E+00	2.49E+00	2.13E+02	3.48E+01
M	31	965.79	3.07E+01	30.26			3.07E+01	3.03E+01
m	32	969.43	1.29E+02	33.46			1.29E+02	3.35E+01
	33	1000.75	2.85E+01	29.09			2.85E+01	2.91E+01
	34	1121.01	7.90E+01	33.69	2.45E+00	2.38E+00	7.65E+01	3.38E+01
M	35	1200.80	2.26E+01	25.28			2.26E+01	2.53E+01
m	36	1208.10	2.14E+01	28.00			2.14E+01	2.80E+01
	37	1238.50	4.97E+01	34.53			4.97E+01	3.45E+01
	38	1461.13	9.04E+02	66.61	5.90E+00	2.63E+00	8.99E+02	6.67E+01
M	39	1585.13	7.99E+00	5.55			7.99E+00	5.55E+00
m	40	1593.13	1.42E+01	12.68			1.42E+01	1.27E+01
	41	1622.09	1.32E+01	9.80			1.32E+01	9.80E+00
	42	1631.41	1.54E+01	10.98			1.54E+01	1.10E+01
	43	1637.66	6.67E+00	6.96			6.67E+00	6.96E+00
	44	1729.81	2.25E+01	14.16			2.25E+01	1.42E+01
	45	1764.89	5.12E+01	21.07	3.33E+00	1.73E+00	4.79E+01	2.11E+01
	46	1847.68	6.67E+00	6.96			6.67E+00	6.96E+00
	47	1886.90	6.31E+00	6.65			6.31E+00	6.65E+00
	48	1913.38	8.00E+00	5.66			8.00E+00	5.66E+00
	49	1974.68	8.00E+00	10.10			8.00E+00	1.01E+01
	50	2035.36	1.15E+01	9.00			1.15E+01	9.00E+00
	51	2054.58	1.10E+01	6.63			1.10E+01	6.63E+00
	52	2104.39	2.25E+01	12.57			2.25E+01	1.26E+01
	53	2165.02	4.33E+00	5.74			4.33E+00	5.74E+00
	54	2203.32	9.25E+00	10.63			9.25E+00	1.06E+01

Analysis Report for 1707091-17

HTC-A08-BKGD02-2430-01

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
55	2448.78	1.41E+01	9.18			1.41E+01	9.18E+00
56	2614.49	9.93E+01	21.47	4.77E+00	1.52E+00	9.45E+01	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 : \\OR-GAMMA1\ApexRoot\Countroom\Library\TMA2.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.983	1460.81	*	10.67	2.26E+01	2.70E+00
TL-208	0.984	583.14	*	30.22	1.13E+00	2.06E-01
		860.37	*	4.48	1.23E+00	1.45E+00
		2614.66	*	35.85	9.45E-01	2.30E-01
BI-212	0.755	727.17	*	11.80	1.05E+00	4.56E-01
		1620.62		2.75		
PB-212	0.963	238.63	*	44.60	1.52E+00	1.99E-01
		300.09	*	3.41	1.32E+00	1.02E+00
BI-214	0.972	609.31	*	46.30	1.01E+00	1.84E-01
		1120.29	*	15.10	1.11E+00	4.97E-01
		1764.49	*	15.80	9.27E-01	4.16E-01
		2204.22	*	4.98	6.37E-01	7.34E-01
PB-214	1.000	295.21	*	19.19	1.14E+00	2.14E-01
		351.92	*	37.19	1.07E+00	1.61E-01
RA-226	1.000	186.21	*	3.28	2.87E+00	5.46E+00
AC-228	0.983	338.32	*	11.40	1.55E+00	5.31E-01
		911.07	*	27.70	1.42E+00	2.59E-01
		969.11	*	16.60	1.51E+00	4.10E-01
PA-234M	0.987	1001.03	*	0.92	6.18E+00	6.32E+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 1707091-17

HTC-A08-BKGD02-2430-01

UNIDENTIFIED PEAKS

Peak Locate Performed on : 8/24/2017 1:15:15PM
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	76.32	2.55208E-01	8.47		
	2	93.67	5.72862E-02	19.56		
	3	99.42	1.60071E-02	51.17	D-Esc	
	4	128.45	2.47087E-02	43.32		
	5	143.34	2.06102E-02	58.54	Tol.	U-235
	6	154.10	2.04657E-02	44.21	Tol.	CS-136
	7	168.94	1.41567E-02	56.49		
	8	174.10	1.24230E-02	48.53		
	10	209.69	2.62919E-02	38.89	Tol.	CM-243
	11	217.01	2.15168E-02	43.63		
	13	270.48	1.85449E-02	36.38		
	16	328.15	2.11303E-02	31.70	Tol.	LA-140
	19	409.63	1.29339E-02	55.84		
	20	463.19	1.58333E-02	34.78	Tol.	SB-125
	21	510.80	3.77814E-02	19.15		
M	22	580.19	6.69678E-03	55.35		
	26	770.12	1.25481E-02	45.64	Sum	
	27	793.69	1.26389E-02	47.13		
M	29	903.18	6.13387E-03	35.08		
M	31	965.79	8.53829E-03	49.22	Sum	
M	35	1200.80	6.27071E-03	55.99		
m	36	1208.10	5.94423E-03	65.42	Sum	
	37	1238.50	1.37941E-02	34.77		
M	39	1585.13	2.22043E-03	34.69	Sum	
m	40	1593.13	3.94125E-03	44.68	D-Esc	
	41	1622.09	3.66319E-03	37.15		
	42	1631.41	4.29167E-03	35.53		
	43	1637.66	1.85185E-03	52.23		
	44	1729.81	6.25000E-03	31.47	Sum	
	46	1847.68	1.85185E-03	52.23	Sum	
	47	1886.90	1.75347E-03	52.69		
	48	1913.38	2.22222E-03	35.36		
	49	1974.68	2.22222E-03	63.12		
	50	2035.36	3.20437E-03	39.01		
	51	2054.58	3.05556E-03	30.15		
	52	2104.39	6.24486E-03	27.96	S-Esc	
	53	2165.02	1.20370E-03	66.28		
	55	2448.78	3.90625E-03	32.64		

Analysis Report for 1707091-17

HTC-A08-BKGD02-2430-01

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	0.98	1460.81	*	10.67	2.26E+01	2.70E+00
TL-208	0.98	583.14	*	30.22	1.13E+00	2.06E-01
		860.37	*	4.48	1.23E+00	1.45E+00
		2614.66	*	35.85	9.45E-01	2.30E-01
BI-212	0.75	727.17	*	11.80	1.05E+00	4.56E-01
		1620.62		2.75		
PB-212	0.96	238.63	*	44.60	1.52E+00	1.99E-01
		300.09	*	3.41	1.32E+00	1.02E+00
BI-214	0.97	609.31	*	46.30	1.01E+00	1.84E-01
		1120.29	*	15.10	1.11E+00	4.97E-01
		1764.49	*	15.80	9.27E-01	4.16E-01
		2204.22	*	4.98	6.37E-01	7.34E-01
PB-214	1.00	295.21	*	19.19	1.14E+00	2.14E-01
		351.92	*	37.19	1.07E+00	1.61E-01
RA-226	1.00	186.21	*	3.28	2.87E+00	5.46E+00
AC-228	0.98	338.32	*	11.40	1.55E+00	5.31E-01
		911.07	*	27.70	1.42E+00	2.59E-01
		969.11	*	16.60	1.51E+00	4.10E-01
PA-234M	0.98	1001.03	*	0.92	6.18E+00	6.32E+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

Analysis Report for 1707091-17

HTC-A08-BKGD02-2430-01

INTERFERENCE CORRECTED REPORT

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
K-40	0.983	2.26E+01	2.70E+00	
TL-208	0.984	1.05E+00	1.53E-01	
BI-212	0.755	1.05E+00	4.56E-01	
PB-212	0.963	1.51E+00	1.95E-01	
BI-214	0.972	9.88E-01	1.56E-01	
PB-214	1.000	1.09E+00	1.28E-01	
RA-226	1.000	2.87E+00	5.46E+00	
AC-228	0.983	1.46E+00	2.02E-01	
PA-234M	0.987	6.18E+00	6.32E+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 1707091-17

HTC-A08-BKGD02-2430-01

UNIDENTIFIED PEAKS

Peak Locate Performed on : 8/24/2017 1:15:15PM
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	76.32	2.55208E-01	8.47		
	2	93.67	5.72862E-02	19.56		
	3	99.42	1.60071E-02	51.17	D-Esc	
	4	128.45	2.47087E-02	43.32		
	5	143.34	2.06102E-02	58.54	Tol.	U-235
	6	154.10	2.04657E-02	44.21	Tol.	CS-136
	7	168.94	1.41567E-02	56.49		
	8	174.10	1.24230E-02	48.53		
	10	209.69	2.62919E-02	38.89	Tol.	CM-243
	11	217.01	2.15168E-02	43.63		
	13	270.48	1.85449E-02	36.38		
	16	328.15	2.11303E-02	31.70	Tol.	LA-140
	19	409.63	1.29339E-02	55.84		
	20	463.19	1.58333E-02	34.78	Tol.	SB-125
	21	510.80	3.77814E-02	19.15		
M	22	580.19	6.69678E-03	55.35		
	26	770.12	1.25481E-02	45.64	Sum	
	27	793.69	1.26389E-02	47.13		
M	29	903.18	6.13387E-03	35.08		
M	31	965.79	8.53829E-03	49.22	Sum	
M	35	1200.80	6.27071E-03	55.99		
m	36	1208.10	5.94423E-03	65.42	Sum	
	37	1238.50	1.37941E-02	34.77		
M	39	1585.13	2.22043E-03	34.69	Sum	
m	40	1593.13	3.94125E-03	44.68	D-Esc	
	41	1622.09	3.66319E-03	37.15		
	42	1631.41	4.29167E-03	35.53		
	43	1637.66	1.85185E-03	52.23		
	44	1729.81	6.25000E-03	31.47	Sum	
	46	1847.68	1.85185E-03	52.23	Sum	
	47	1886.90	1.75347E-03	52.69		
	48	1913.38	2.22222E-03	35.36		
	49	1974.68	2.22222E-03	63.12		
	50	2035.36	3.20437E-03	39.01		

Analysis Report for 1707091-17

HTC-A08-BKGD02-2430-01

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
51	2054.58	3.05556E-03	30.15		
52	2104.39	6.24486E-03	27.96	S-Esc	
53	2165.02	1.20370E-03	66.28		
55	2448.78	3.90625E-03	32.64		

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	-6.64E-01	1.73E+00	1.73E+00
+	NA-22	1274.54		99.94	-6.13E-02	8.66E-02	8.66E-02
+	@ NA-24	1368.53		99.99	1.00E+26	1.00E+26	1.00E+26
	@	2754.09		99.86	1.00E+26		1.00E+26
+	AL-26	1808.65		99.76	-9.33E-03	5.18E-02	5.18E-02
+	K-40	1460.81	*	10.67	2.26E+01	1.28E+00	1.28E+00
+	@ AR-41	1293.64		99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88		94.40	7.57E-03	4.65E-02	4.65E-02
		78.34		96.00	6.62E-02		5.36E-02
+	SC-46	889.25		99.98	-1.02E-03	1.52E-01	1.52E-01
		1120.51		99.99	3.74E-01		2.79E-01
+	V-48	983.52		99.98	1.93E+00	5.50E+00	5.50E+00
		1312.10		97.50	-4.43E+00		5.65E+00
+	CR-51	320.08		9.83	-1.10E+00	6.13E+00	6.13E+00
+	MN-54	834.83		99.97	7.38E-04	8.58E-02	8.58E-02
+	CO-56	846.75		99.96	4.69E-02	1.57E-01	1.57E-01
		1037.75		14.03	5.80E-01		1.28E+00
		1238.25		67.00	4.62E-01		4.48E-01
		1771.40		15.51	4.81E-02		8.37E-01
		2598.48		16.90	9.74E-02		5.55E-01
+	CO-57	122.06		85.51	-3.08E-02	4.80E-02	4.80E-02
		136.48		10.60	-1.04E-01		5.14E-01
+	CO-58	810.76		99.40	-6.39E-02	1.46E-01	1.46E-01
+	FE-59	1099.22		56.50	6.75E-02	7.13E-01	7.13E-01
		1291.56		43.20	5.84E-01		9.31E-01

Analysis Report for 1707091-17

HTC-A08-BKGD02-2430-01

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	CO-60	1173.22	100.00	4.06E-03	6.99E-02	9.11E-02
		1332.49	100.00	-1.81E-02		6.99E-02
+	ZN-65	1115.52	50.75	2.75E-02	2.18E-01	2.18E-01
+	GA-67	93.31	35.70	4.75E+08	2.68E+08	2.68E+08
		208.95	2.24	3.14E+09		5.05E+09
		300.22	16.00	5.95E+08		7.16E+08
+	SE-75	121.11	16.70	3.90E-02	1.30E-01	3.39E-01
		136.00	59.20	5.10E-02		1.30E-01
		264.65	59.80	1.06E-01		1.43E-01
		279.53	25.20	-1.05E-01		3.31E-01
		400.65	11.40	3.19E-01		7.79E-01
+	RB-82	776.52	13.00	-6.53E+00	7.35E+00	7.35E+00
+	RB-83	520.41	46.00	-2.43E-02	2.25E-01	2.25E-01
		529.64	30.30	1.37E-01		3.84E-01
		552.65	16.40	3.89E-02		7.10E-01
+	KR-85	513.99	0.43	-1.00E+01	1.38E+01	1.38E+01
+	SR-85	513.99	99.27	-1.26E-01	1.74E-01	1.74E-01
+	Y-88	898.02	93.40	3.62E-02	1.10E-01	1.47E-01
		1836.01	99.38	3.44E-02		1.10E-01
+	MO-93	263.06	56.72	-5.63E-02	5.24E-02	8.22E-02
		684.67	99.68	1.55E-03		6.65E-02
		1477.11	99.08	3.48E-03		5.24E-02
+	NB-93M	16.57	9.43	0.00E+00	6.70E+00	6.70E+00
+	NB-94	702.63	100.00	1.46E-03	6.27E-02	6.95E-02
		871.10	100.00	-1.98E-02		6.27E-02
+	NB-95	765.79	99.81	1.94E-01	6.13E-01	6.13E-01
+	NB-95M	235.69	25.00	-6.00E+08	7.16E+07	7.16E+07
+	ZR-95	724.18	43.70	3.26E-03	3.70E-01	5.84E-01
		756.72	55.30	1.03E-01		3.70E-01
+	MO-99	181.06	6.20	2.42E+10	5.73E+10	8.76E+10
		739.58	12.80	-3.00E+10		5.73E+10
		778.00	4.50	-7.32E+10		1.58E+11
+	RU-103	497.08	89.00	-5.29E-02	3.33E-01	3.33E-01
+	RU-106	621.84	9.80	9.26E-02	7.44E-01	7.44E-01
+	AG-108M	433.93	89.90	1.55E-02	5.56E-02	5.56E-02
		614.37	90.40	9.59E-03		6.92E-02
		722.95	90.50	1.69E-03		8.16E-02
+	CD-109	88.03	3.72	1.09E+00	1.48E+00	1.48E+00
+	AG-110M	657.75	93.14	-5.37E-02	9.22E-02	9.22E-02
		677.61	10.53	-1.10E-01		7.58E-01
		706.67	16.46	-2.18E-01		5.62E-01
		763.93	21.98	1.64E-01		4.50E-01
		884.67	71.63	-3.28E-02		1.16E-01
		1384.27	23.94	1.28E-01		3.50E-01
+	CD-113M	263.70	0.02	-4.76E+01	2.06E+02	2.06E+02
+	SN-113	255.12	1.93	-1.20E+00	1.44E-01	4.37E+00
		391.69	64.90	-2.19E-02		1.44E-01
+	TE123M	159.00	84.10	7.42E-04	9.77E-02	9.77E-02

Analysis Report for 1707091-17

HTC-A08-BKGD02-2430-01

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	SB-124	602.71	97.87	4.49E-02	1.95E-01	1.95E-01
		645.85	7.26	8.63E-01		2.77E+00
		722.78	11.10	9.83E-02		1.99E+00
		1691.02	49.00	2.63E-01		4.36E-01
+	I-125	35.49	6.49	-3.55E+01	6.44E+00	6.44E+00
+	SB-125	176.33	6.89	2.72E-03	1.90E-01	7.25E-01
		427.89	29.33	4.92E-02		1.90E-01
		463.38	10.35	6.52E-01		6.15E-01
		600.56	17.80	1.78E-01		3.69E-01
		635.90	11.32	-7.49E-04		6.01E-01
+	SB-126	414.70	83.30	-4.83E-01	1.68E+01	1.68E+01
		666.33	99.60	-1.47E+01		1.86E+01
		695.00	99.60	1.34E+00		1.88E+01
		720.50	53.80	-2.90E+00		3.49E+01
+	SN-126	87.57	37.00	9.46E-02	1.28E-01	1.28E-01
+	SB-127	473.00	25.00	9.15E+05	1.42E+07	1.55E+07
		685.20	35.70	-1.61E+06		1.42E+07
		783.80	14.70	2.82E+07		3.92E+07
+	I-129	29.78	57.00	1.60E-01	3.94E-01	3.94E-01
		33.60	13.20	8.82E+00		2.06E+00
		39.58	7.52	1.20E+00		1.25E+00
+	I-131	284.30	6.05	-9.17E+02	3.59E+02	4.63E+03
		364.48	81.20	-7.52E+01		3.59E+02
		636.97	7.26	4.74E+02		5.38E+03
		722.89	1.80	5.12E+02		2.47E+04
+	TE-132	49.72	13.10	-4.26E+08	1.12E+08	7.33E+08
		228.16	88.00	2.63E+07		1.12E+08
+	BA-133	81.00	33.00	5.25E-02	7.96E-02	1.14E-01
		302.84	17.80	-3.69E-03		2.78E-01
		356.01	60.00	4.44E-02		7.96E-02
+	@ I-133	529.87	86.30	1.00E+26	1.00E+26	1.00E+26
+	XE-133	81.00	38.00	2.81E+04	6.10E+04	6.10E+04
+	CS-134	563.23	8.38	2.44E-02	7.15E-02	7.35E-01
		569.32	15.43	-2.41E-01		3.48E-01
		604.70	97.60	8.52E-03		7.15E-02
		795.84	85.40	4.60E-02		9.67E-02
		801.93	8.73	1.51E-02		8.09E-01
+	CS-135	268.24	16.00	1.24E-01	3.22E-01	3.22E-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	9.64E+00	1.37E+01	1.31E+02
		163.89	4.61	-1.90E+01		1.95E+02
		176.55	13.56	2.64E-01		7.02E+01
		273.65	12.66	-3.27E+01		7.92E+01
		340.57	48.50	-1.43E+01		2.54E+01
		818.50	99.70	1.58E+00		1.37E+01
		1048.07	79.60	-2.30E+00		1.94E+01
		1235.34	19.70	-7.59E+00		1.15E+02

Analysis Report for 1707091-17

HTC-A08-BKGD02-2430-01

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	CS-137	661.65	85.12	1.49E-02	8.58E-02	8.58E-02
+	LA-138	788.74	34.00	-2.65E-02	9.86E-02	1.97E-01
		1435.80	66.00	-3.82E-02		9.86E-02
+	CE-139	165.85	80.35	4.57E-03	9.04E-02	9.04E-02
+	BA-140	162.64	6.70	1.00E+02	4.46E+01	1.63E+02
		304.84	4.50	-2.29E+01		2.47E+02
		423.70	3.20	5.99E+01		3.64E+02
		437.55	2.00	3.81E+02		6.02E+02
		537.32	25.00	9.72E+00		4.46E+01
+	LA-140	328.77	20.50	6.53E+01	1.56E+01	6.76E+01
		487.03	45.50	-5.62E+00		2.44E+01
		815.85	23.50	1.84E+01		6.19E+01
		1596.49	95.49	-1.43E+00		1.56E+01
+	CE-141	145.44	48.40	4.83E-01	8.90E-01	8.90E-01
+	@ 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	-3.37E-02	3.89E-01	3.89E-01
+	PM-144	476.78	42.00	-5.39E-02	7.17E-02	1.40E-01
		618.01	98.60	-7.45E-03		7.17E-02
		696.49	99.49	-1.26E-02		8.19E-02
+	PM-145	36.85	21.70	-3.06E-02	2.59E-01	5.14E-01
		37.36	39.70	-3.07E-01		2.59E-01
		42.30	15.10	-9.79E-02		4.38E-01
		72.40	2.31	-8.31E+00		1.99E+00
+	PM-146	453.90	39.94	-1.18E-02	1.25E-01	1.25E-01
		735.90	14.01	1.93E-01		4.95E-01
		747.13	13.10	-1.55E-01		4.87E-01
+	ND-147	91.11	28.90	7.05E+01	8.29E+01	8.29E+01
		531.02	13.10	-5.23E+01		2.15E+02
+	PM-149	285.90	3.10	5.24E+13	9.01E+13	9.01E+13
+	EU-152	121.78	20.50	-1.01E-01	1.57E-01	1.57E-01
		244.69	5.40	-6.71E-01		9.28E-01
		344.27	19.13	1.37E-01		2.59E-01
		778.89	9.20	-3.23E-01		6.98E-01
		964.01	10.40	-4.57E-02		9.10E-01
		1085.78	7.22	3.27E-01		1.09E+00
		1112.02	9.60	1.22E-01		8.89E-01
		1407.95	14.94	7.10E-03		5.36E-01
+	GD-153	97.43	31.30	-1.26E-01	1.36E-01	1.36E-01
		103.18	22.20	-7.05E-02		1.85E-01
+	EU-154	123.07	40.50	3.29E-02	8.44E-02	8.44E-02
		723.30	19.70	7.92E-03		3.83E-01
		873.19	11.50	1.40E-01		5.99E-01
		996.32	10.30	4.17E-02		7.39E-01
		1004.76	17.90	2.45E-02		4.32E-01
		1274.45	35.50	-1.64E-01		2.32E-01
+	EU-155	86.50	30.90	2.14E-01	1.57E-01	1.57E-01
		105.30	20.70	9.65E-02		1.69E-01

Analysis Report for 1707091-17

HTC-A08-BKGD02-2430-01

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	EU-156	811.77		10.40	-2.94E+01	5.02E+01	5.02E+01
		1153.47		7.20	1.64E+01		1.21E+02
		1230.71		8.90	8.60E+00		1.03E+02
+	HO-166M	184.41		72.60	1.17E-01	7.94E-02	7.94E-02
		280.45		29.60	-8.20E-02		1.51E-01
		410.94		11.10	2.31E-01		4.83E-01
		711.69		54.10	-2.04E-02		1.21E-01
+	TM-171	66.72		0.14	-7.59E+00	3.39E+01	3.39E+01
+	HF-172	67.35		5.31	1.49E-01	3.30E-01	9.18E-01
		125.81		11.30	-9.09E-02		3.30E-01
+	LU-172	181.53		20.60	8.50E+02	4.85E+03	7.91E+03
		900.72		29.81	-7.08E+02		8.31E+03
		1093.66		62.50	3.04E+03		4.85E+03
+	LU-173	100.72		5.24	-3.72E-03	3.01E-01	7.14E-01
		272.11		21.20	2.17E-01		3.01E-01
+	HF-175	343.40		84.00	-1.62E-03	1.60E-01	1.60E-01
+	LU-176	88.34		13.30	2.37E-01	4.81E-02	3.46E-01
		201.83		86.00	-9.00E-03		5.43E-02
		306.78		94.00	1.36E-02		4.81E-02
+	HF-181	133.02		41.70	1.23E-01	3.17E-01	4.19E-01
		345.85		17.20	1.25E-01		1.45E+00
		482.03		82.80	4.54E-02		3.17E-01
+	TA-182	67.75		41.20	3.19E-02	1.96E-01	1.96E-01
		1121.30		34.90	9.35E-01		6.44E-01
		1189.05		16.23	-3.64E-01		1.03E+00
		1221.41		26.98	6.08E-02		7.05E-01
		1231.02		11.44	1.23E-01		1.47E+00
+	IR-192	308.46		29.68	-4.84E-02	2.59E-01	3.89E-01
		468.07		48.10	8.96E-02		2.59E-01
+	HG-203	279.19		77.30	2.40E-01	2.87E-01	2.87E-01
+	TL-204	374.74		94.11	1.75E-02	5.49E-02	5.49E-02
		899.15		99.16	9.68E-03		7.56E-02
		911.74		91.10	4.33E-01		1.65E-01
+	BI-207	569.67		97.72	-3.49E-02	5.04E-02	5.04E-02
		1063.62		74.90	-2.40E-02		1.03E-01
+	TL-208	583.14	*	30.22	1.13E+00	1.79E-01	2.45E-01
		860.37	*	4.48	1.23E+00		2.37E+00
		2614.66	*	35.85	9.45E-01		1.79E-01
+	BI-210M	262.00		45.00	-1.73E-02	1.02E-01	1.02E-01
		300.00		23.00	1.97E-01		2.37E-01
+	PB-210	46.50		4.25	1.60E+00	1.42E+00	1.42E+00
+	PB-211	404.84		2.90	-2.51E-01	1.62E+00	1.62E+00
		831.96		2.90	-4.61E-01		2.30E+00
+	BI-212	727.17	*	11.80	1.05E+00	6.60E-01	6.60E-01
		1620.62		2.75	1.80E-01		2.58E+00
+	PB-212	238.63	*	44.60	1.52E+00	2.20E-01	2.20E-01
		300.09	*	3.41	1.32E+00		2.50E+00
+	BI-214	609.31	*	46.30	1.01E+00	2.03E-01	2.03E-01

Analysis Report for 1707091-17

HTC-A08-BKGD02-2430-01

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	BI-214	1120.29	*	15.10	1.11E+00	2.03E-01	7.27E-01
		1764.49	*	15.80	9.27E-01		5.61E-01
		2204.22	*	4.98	6.37E-01		1.17E+00
+	PB-214	295.21	*	19.19	1.14E+00	1.60E-01	4.31E-01
		351.92	*	37.19	1.07E+00		1.60E-01
+	RN-219	401.80		6.50	6.08E-02	7.49E-01	7.49E-01
+	RA-223	323.87		3.88	8.50E-01	1.32E+00	1.32E+00
+	RA-224	240.98		3.95	9.56E+00	2.50E+00	2.50E+00
+	RA-225	40.00		31.00	3.21E+01	3.32E+01	3.32E+01
+	RA-226	186.21	*	3.28	2.87E+00	2.36E+00	2.36E+00
+	TH-227	50.10		8.40	-3.07E-01	5.28E-01	5.28E-01
		236.00		11.50	-4.95E+00		5.90E-01
		256.20		6.30	-3.37E-01		7.20E-01
+	AC-228	338.32	*	11.40	1.55E+00	4.99E-01	7.94E-01
		911.07	*	27.70	1.42E+00		4.99E-01
		969.11	*	16.60	1.51E+00		8.30E-01
+	TH-230	48.44		16.90	-3.11E-01	2.78E-01	2.78E-01
		62.85		4.60	1.02E+00		1.08E+00
		67.67		0.37	1.93E+00		1.19E+01
+	PA-231	283.67		1.60	-5.73E-01	2.12E+00	2.89E+00
		302.67		2.30	-2.81E-02		2.12E+00
+	TH-231	25.64		14.70	0.00E+00	1.19E-01	1.19E-01
		84.21		6.40	-9.03E-01		6.10E-01
+	PA-233	311.98		38.60	2.50E-01	1.60E+00	1.60E+00
+	PA-234	131.20		20.40	-4.93E-02	1.70E-01	1.70E-01
		733.99		8.80	-8.30E-02		7.36E-01
		946.00		12.00	-3.91E-02		6.05E-01
+	PA-234M	1001.03	*	0.92	6.18E+00	1.02E+01	1.02E+01
+	TH-234	63.29		3.80	1.70E+00	1.32E+00	1.32E+00
+	U-235	143.76		10.50	1.24E-01	4.67E-01	4.67E-01
		163.35		4.70	-9.09E-02		9.35E-01
		205.31		4.70	-2.34E-01		1.01E+00
+	NP-237	86.50		12.60	5.04E-01	3.70E-01	3.70E-01
+	NP-239	106.10		22.70	6.88E+11	1.20E+12	1.20E+12
		228.18		10.70	8.21E+11		3.50E+12
		277.60		14.10	1.90E+12		2.86E+12
+	AM-241	59.54		35.90	3.64E-03	1.24E-01	1.24E-01
+	AM-243	74.67		66.00	-1.50E-01	8.76E-02	8.76E-02
+	CM-243	209.75		3.29	1.23E+00	3.58E-01	1.66E+00
		228.14		10.60	1.03E-01		4.39E-01
		277.60		14.00	2.37E-01		3.58E-01

+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction
? = CAUTION: MDA value is inconsistent with Currie MDA at 95% confidence level

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NUCLIDE MDA REPORT

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

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	BE-7	477.59		10.42	1.73E+00	1.73E+00	-6.64E-01	8.10E-01
	NA-22	1274.54		99.94	8.66E-02	8.66E-02	-6.13E-02	3.98E-02
@	NA-24	1368.53		99.99	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		2754.09		99.86	1.00E+26		1.00E+26	1.00E+20
	AL-26	1808.65		99.76	5.18E-02	5.18E-02	-9.33E-03	2.17E-02
+	K-40	1460.81	*	10.67	1.28E+00	1.28E+00	2.26E+01	6.04E-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	4.65E-02	4.65E-02	7.57E-03	2.26E-02
		78.34		96.00	5.36E-02		6.62E-02	2.62E-02
	SC-46	889.25		99.98	1.52E-01	1.52E-01	-1.02E-03	7.06E-02
		1120.51		99.99	2.79E-01		3.74E-01	1.33E-01
	V-48	983.52		99.98	5.50E+00	5.50E+00	1.93E+00	2.54E+00
		1312.10		97.50	5.65E+00		-4.43E+00	2.55E+00
	CR-51	320.08		9.83	6.13E+00	6.13E+00	-1.10E+00	2.93E+00
	MN-54	834.83		99.97	8.58E-02	8.58E-02	7.38E-04	4.00E-02
	CO-56	846.75		99.96	1.57E-01	1.57E-01	4.69E-02	7.29E-02
		1037.75		14.03	1.28E+00		5.80E-01	5.91E-01
		1238.25		67.00	4.48E-01		4.62E-01	2.12E-01
		1771.40		15.51	8.37E-01		4.81E-02	3.54E-01
		2598.48		16.90	5.55E-01		9.74E-02	2.08E-01
	CO-57	122.06		85.51	4.80E-02	4.80E-02	-3.08E-02	2.31E-02
		136.48		10.60	5.14E-01		-1.04E-01	2.49E-01
	CO-58	810.76		99.40	1.46E-01	1.46E-01	-6.39E-02	6.67E-02
	FE-59	1099.22		56.50	7.13E-01	7.13E-01	6.75E-02	3.32E-01
		1291.56		43.20	9.31E-01		5.84E-01	4.29E-01
	CO-60	1173.22		100.00	9.11E-02	6.99E-02	4.06E-03	4.24E-02
		1332.49		100.00	6.99E-02		-1.81E-02	3.14E-02
	ZN-65	1115.52		50.75	2.18E-01	2.18E-01	2.75E-02	1.01E-01
	GA-67	93.31		35.70	2.68E+08	2.68E+08	4.75E+08	1.30E+08
		208.95		2.24	5.05E+09		3.14E+09	2.45E+09
		300.22		16.00	7.16E+08		5.95E+08	3.44E+08
	SE-75	121.11		16.70	3.39E-01	1.30E-01	3.90E-02	1.63E-01
		136.00		59.20	1.30E-01		5.10E-02	6.31E-02
		264.65		59.80	1.43E-01		1.06E-01	6.87E-02
		279.53		25.20	3.31E-01		-1.05E-01	1.58E-01
		400.65		11.40	7.79E-01		3.19E-01	3.69E-01

Analysis Report for 1707091-17

HTC-A08-BKGD02-2430-01

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
RB-82	776.52	13.00	7.35E+00	7.35E+00	-6.53E+00	3.41E+00
RB-83	520.41	46.00	2.25E-01	2.25E-01	-2.43E-02	1.05E-01
	529.64	30.30	3.84E-01		1.37E-01	1.80E-01
	552.65	16.40	7.10E-01		3.89E-02	3.32E-01
KR-85	513.99	0.43	1.38E+01	1.38E+01	-1.00E+01	6.52E+00
SR-85	513.99	99.27	1.74E-01	1.74E-01	-1.26E-01	8.24E-02
Y-88	898.02	93.40	1.47E-01	1.10E-01	3.62E-02	6.84E-02
	1836.01	99.38	1.10E-01		3.44E-02	4.69E-02
MO-93	263.06	56.72	8.22E-02	5.24E-02	-5.63E-02	3.94E-02
	684.67	99.68	6.65E-02		1.55E-03	3.12E-02
	1477.11	99.08	5.24E-02		3.48E-03	2.24E-02
NB-93M	16.57	9.43	6.70E+00	6.70E+00	0.00E+00	0.00E+00
NB-94	702.63	100.00	6.95E-02	6.27E-02	1.46E-03	3.27E-02
	871.10	100.00	6.27E-02		-1.98E-02	2.89E-02
NB-95	765.79	99.81	6.13E-01	6.13E-01	1.94E-01	2.91E-01
NB-95M	235.69	25.00	7.16E+07	7.16E+07	-6.00E+08	3.48E+07
ZR-95	724.18	43.70	5.84E-01	3.70E-01	3.26E-03	2.78E-01
	756.72	55.30	3.70E-01		1.03E-01	1.73E-01
MO-99	181.06	6.20	8.76E+10	5.73E+10	2.42E+10	4.24E+10
	739.58	12.80	5.73E+10		-3.00E+10	2.68E+10
	778.00	4.50	1.58E+11		-7.32E+10	7.37E+10
RU-103	497.08	89.00	3.33E-01	3.33E-01	-5.29E-02	1.56E-01
RU-106	621.84	9.80	7.44E-01	7.44E-01	9.26E-02	3.50E-01
AG-108M	433.93	89.90	5.56E-02	5.56E-02	1.55E-02	2.63E-02
	614.37	90.40	6.92E-02		9.59E-03	3.26E-02
	722.95	90.50	8.16E-02		1.69E-03	3.85E-02
CD-109	88.03	3.72	1.48E+00	1.48E+00	1.09E+00	7.21E-01
AG-110M	657.75	93.14	9.22E-02	9.22E-02	-5.37E-02	4.34E-02
	677.61	10.53	7.58E-01		-1.10E-01	3.54E-01
	706.67	16.46	5.62E-01		-2.18E-01	2.64E-01
	763.93	21.98	4.50E-01		1.64E-01	2.12E-01
	884.67	71.63	1.16E-01		-3.28E-02	5.36E-02
	1384.27	23.94	3.50E-01		1.28E-01	1.56E-01
CD-113M	263.70	0.02	2.06E+02	2.06E+02	-4.76E+01	9.85E+01
SN-113	255.12	1.93	4.37E+00	1.44E-01	-1.20E+00	2.10E+00
	391.69	64.90	1.44E-01		-2.19E-02	6.81E-02
TE123M	159.00	84.10	9.77E-02	9.77E-02	7.42E-04	4.74E-02
SB-124	602.71	97.87	1.95E-01	1.95E-01	4.49E-02	9.14E-02
	645.85	7.26	2.77E+00		8.63E-01	1.30E+00
	722.78	11.10	1.99E+00		9.83E-02	9.38E-01
	1691.02	49.00	4.36E-01		2.63E-01	1.92E-01
I-125	35.49	6.49	6.44E+00	6.44E+00	-3.55E+01	3.12E+00
SB-125	176.33	6.89	7.25E-01	1.90E-01	2.72E-03	3.51E-01
	427.89	29.33	1.90E-01		4.92E-02	8.99E-02
	463.38	10.35	6.15E-01		6.52E-01	2.92E-01
	600.56	17.80	3.69E-01		1.78E-01	1.74E-01
	635.90	11.32	6.01E-01		-7.49E-04	2.83E-01
SB-126	414.70	83.30	1.68E+01	1.68E+01	-4.83E-01	7.94E+00
	666.33	99.60	1.86E+01		-1.47E+01	8.76E+00
	695.00	99.60	1.88E+01		1.34E+00	8.85E+00
	720.50	53.80	3.49E+01		-2.90E+00	1.63E+01
SN-126	87.57	37.00	1.28E-01	1.28E-01	9.46E-02	6.23E-02
SB-127	473.00	25.00	1.55E+07	1.42E+07	9.15E+05	7.30E+06

Analysis Report for 1707091-17

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
SB-127	685.20	35.70	1.42E+07	1.42E+07	-1.61E+06	6.67E+06
	783.80	14.70	3.92E+07		2.82E+07	1.84E+07
I-129	29.78	57.00	3.94E-01	3.94E-01	1.60E-01	1.90E-01
	33.60	13.20	2.06E+00		8.82E+00	1.01E+00
	39.58	7.52	1.25E+00		1.20E+00	6.04E-01
I-131	284.30	6.05	4.63E+03	3.59E+02	-9.17E+02	2.21E+03
	364.48	81.20	3.59E+02		-7.52E+01	1.71E+02
	636.97	7.26	5.38E+03		4.74E+02	2.53E+03
	722.89	1.80	2.47E+04		5.12E+02	1.17E+04
TE-132	49.72	13.10	7.33E+08	1.12E+08	-4.26E+08	3.53E+08
	228.16	88.00	1.12E+08		2.63E+07	5.41E+07
BA-133	81.00	33.00	1.14E-01	7.96E-02	5.25E-02	5.51E-02
	302.84	17.80	2.78E-01		-3.69E-03	1.33E-01
	356.01	60.00	7.96E-02		4.44E-02	3.78E-02
@ I-133	529.87	86.30	1.00E+26	1.00E+26	1.00E+26	1.00E+20
XE-133	81.00	38.00	6.10E+04	6.10E+04	2.81E+04	2.95E+04
CS-134	563.23	8.38	7.35E-01	7.15E-02	2.44E-02	3.45E-01
	569.32	15.43	3.48E-01		-2.41E-01	1.62E-01
	604.70	97.60	7.15E-02		8.52E-03	3.37E-02
	795.84	85.40	9.67E-02		4.60E-02	4.55E-02
	801.93	8.73	8.09E-01		1.51E-02	3.76E-01
CS-135	268.24	16.00	3.22E-01	3.22E-01	1.24E-01	1.55E-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	1.31E+02	1.37E+01	9.64E+00	6.38E+01
	163.89	4.61	1.95E+02		-1.90E+01	9.43E+01
	176.55	13.56	7.02E+01		2.64E-01	3.40E+01
	273.65	12.66	7.92E+01		-3.27E+01	3.80E+01
	340.57	48.50	2.54E+01		-1.43E+01	1.22E+01
	818.50	99.70	1.37E+01		1.58E+00	6.39E+00
	1048.07	79.60	1.94E+01		-2.30E+00	8.99E+00
	1235.34	19.70	1.15E+02		-7.59E+00	5.40E+01
CS-137	661.65	85.12	8.58E-02	8.58E-02	1.49E-02	4.06E-02
LA-138	788.74	34.00	1.97E-01	9.86E-02	-2.65E-02	9.18E-02
	1435.80	66.00	9.86E-02		-3.82E-02	4.39E-02
CE-139	165.85	80.35	9.04E-02	9.04E-02	4.57E-03	4.37E-02
BA-140	162.64	6.70	1.63E+02	4.46E+01	1.00E+02	7.92E+01
	304.84	4.50	2.47E+02		-2.29E+01	1.18E+02
	423.70	3.20	3.64E+02		5.99E+01	1.72E+02
	437.55	2.00	6.02E+02		3.81E+02	2.84E+02
	537.32	25.00	4.46E+01		9.72E+00	2.07E+01
LA-140	328.77	20.50	6.76E+01	1.56E+01	6.53E+01	3.25E+01
	487.03	45.50	2.44E+01		-5.62E+00	1.14E+01
	815.85	23.50	6.19E+01		1.84E+01	2.86E+01
	1596.49	95.49	1.56E+01		-1.43E+00	6.85E+00
CE-141	145.44	48.40	8.90E-01	8.90E-01	4.83E-01	4.33E-01
@ CE-143	57.36	11.80	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	293.26	42.00	1.00E+26		1.00E+26	1.00E+20
@	664.55	5.20	1.00E+26		1.00E+26	1.00E+20
CE-144	133.54	10.80	3.89E-01	3.89E-01	-3.37E-02	1.87E-01
PM-144	476.78	42.00	1.40E-01	7.17E-02	-5.39E-02	6.57E-02
	618.01	98.60	7.17E-02		-7.45E-03	3.36E-02

Analysis Report for 1707091-17

HTC-A08-BKGD02-2430-01

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
PM-144	696.49	99.49	8.19E-02	7.17E-02	-1.26E-02	3.85E-02
PM-145	36.85	21.70	5.14E-01	2.59E-01	-3.06E-02	2.49E-01
	37.36	39.70	2.59E-01		-3.07E-01	1.25E-01
	42.30	15.10	4.38E-01		-9.79E-02	2.11E-01
	72.40	2.31	1.99E+00		-8.31E+00	9.66E-01
PM-146	453.90	39.94	1.25E-01	1.25E-01	-1.18E-02	5.89E-02
	735.90	14.01	4.95E-01		1.93E-01	2.32E-01
	747.13	13.10	4.87E-01		-1.55E-01	2.27E-01
ND-147	91.11	28.90	8.29E+01	8.29E+01	7.05E+01	4.03E+01
	531.02	13.10	2.15E+02		-5.23E+01	1.00E+02
PM-149	285.90	3.10	9.01E+13	9.01E+13	5.24E+13	4.32E+13
EU-152	121.78	20.50	1.57E-01	1.57E-01	-1.01E-01	7.53E-02
	244.69	5.40	9.28E-01		-6.71E-01	4.47E-01
	344.27	19.13	2.59E-01		1.37E-01	1.23E-01
	778.89	9.20	6.98E-01		-3.23E-01	3.25E-01
	964.01	10.40	9.10E-01		-4.57E-02	4.29E-01
	1085.78	7.22	1.09E+00		3.27E-01	5.07E-01
	1112.02	9.60	8.89E-01		1.22E-01	4.13E-01
	1407.95	14.94	5.36E-01		7.10E-03	2.44E-01
GD-153	97.43	31.30	1.36E-01	1.36E-01	-1.26E-01	6.57E-02
	103.18	22.20	1.85E-01		-7.05E-02	8.92E-02
EU-154	123.07	40.50	8.44E-02	8.44E-02	3.29E-02	4.07E-02
	723.30	19.70	3.83E-01		7.92E-03	1.81E-01
	873.19	11.50	5.99E-01		1.40E-01	2.78E-01
	996.32	10.30	7.39E-01		4.17E-02	3.43E-01
	1004.76	17.90	4.32E-01		2.45E-02	2.00E-01
	1274.45	35.50	2.32E-01		-1.64E-01	1.06E-01
EU-155	86.50	30.90	1.57E-01	1.57E-01	2.14E-01	7.65E-02
	105.30	20.70	1.69E-01		9.65E-02	8.14E-02
EU-156	811.77	10.40	5.02E+01	5.02E+01	-2.94E+01	2.29E+01
	1153.47	7.20	1.21E+02		1.64E+01	5.61E+01
	1230.71	8.90	1.03E+02		8.60E+00	4.78E+01
HO-166M	184.41	72.60	7.94E-02	7.94E-02	1.17E-01	3.86E-02
	280.45	29.60	1.51E-01		-8.20E-02	7.23E-02
	410.94	11.10	4.83E-01		2.31E-01	2.30E-01
	711.69	54.10	1.21E-01		-2.04E-02	5.69E-02
TM-171	66.72	0.14	3.39E+01	3.39E+01	-7.59E+00	1.65E+01
HF-172	67.35	5.31	9.18E-01	3.30E-01	1.49E-01	4.46E-01
	125.81	11.30	3.30E-01		-9.09E-02	1.59E-01
LU-172	181.53	20.60	7.91E+03	4.85E+03	8.50E+02	3.83E+03
	900.72	29.81	8.31E+03		-7.08E+02	3.87E+03
	1093.66	62.50	4.85E+03		3.04E+03	2.27E+03
LU-173	100.72	5.24	7.14E-01	3.01E-01	-3.72E-03	3.45E-01
	272.11	21.20	3.01E-01		2.17E-01	1.45E-01
HF-175	343.40	84.00	1.60E-01	1.60E-01	-1.62E-03	7.64E-02
LU-176	88.34	13.30	3.46E-01	4.81E-02	2.37E-01	1.69E-01
	201.83	86.00	5.43E-02		-9.00E-03	2.62E-02
	306.78	94.00	4.81E-02		1.36E-02	2.29E-02
HF-181	133.02	41.70	4.19E-01	3.17E-01	1.23E-01	2.02E-01
	345.85	17.20	1.45E+00		1.25E-01	6.90E-01
	482.03	82.80	3.17E-01		4.54E-02	1.49E-01
TA-182	67.75	41.20	1.96E-01	1.96E-01	3.19E-02	9.53E-02
	1121.30	34.90	6.44E-01		9.35E-01	3.06E-01

Analysis Report for 1707091-17

HTC-A08-BKGD02-2430-01

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	TA-182	1189.05		16.23	1.03E+00	1.96E-01	-3.64E-01	4.81E-01
		1221.41		26.98	7.05E-01		6.08E-02	3.31E-01
		1231.02		11.44	1.47E+00		1.23E-01	6.84E-01
	IR-192	308.46		29.68	3.89E-01	2.59E-01	-4.84E-02	1.85E-01
		468.07		48.10	2.59E-01		8.96E-02	1.22E-01
	HG-203	279.19		77.30	2.87E-01	2.87E-01	2.40E-01	1.38E-01
	TL-204	374.74		94.11	5.49E-02	5.49E-02	1.75E-02	2.60E-02
		899.15		99.16	7.56E-02		9.68E-03	3.52E-02
		911.74		91.10	1.65E-01		4.33E-01	7.98E-02
	BI-207	569.67		97.72	5.04E-02	5.04E-02	-3.49E-02	2.34E-02
		1063.62		74.90	1.03E-01		-2.40E-02	4.76E-02
+	TL-208	583.14	*	30.22	2.45E-01	1.79E-01	1.13E+00	1.17E-01
		860.37	*	4.48	2.37E+00		1.23E+00	1.13E+00
		2614.66	*	35.85	1.79E-01		9.45E-01	7.60E-02
	BI-210M	262.00		45.00	1.02E-01	1.02E-01	-1.73E-02	4.90E-02
		300.00		23.00	2.37E-01		1.97E-01	1.14E-01
	PB-210	46.50		4.25	1.42E+00	1.42E+00	1.60E+00	6.88E-01
	PB-211	404.84		2.90	1.62E+00	1.62E+00	-2.51E-01	7.64E-01
		831.96		2.90	2.30E+00		-4.61E-01	1.07E+00
+	BI-212	727.17	*	11.80	6.60E-01	6.60E-01	1.05E+00	3.12E-01
		1620.62		2.75	2.58E+00		1.80E-01	1.15E+00
+	PB-212	238.63	*	44.60	2.20E-01	2.20E-01	1.52E+00	1.08E-01
		300.09	*	3.41	2.50E+00		1.32E+00	1.22E+00
+	BI-214	609.31	*	46.30	2.03E-01	2.03E-01	1.01E+00	9.76E-02
		1120.29	*	15.10	7.27E-01		1.11E+00	3.44E-01
		1764.49	*	15.80	5.61E-01		9.27E-01	2.54E-01
		2204.22	*	4.98	1.17E+00		6.37E-01	4.94E-01
+	PB-214	295.21	*	19.19	4.31E-01	1.60E-01	1.14E+00	2.10E-01
		351.92	*	37.19	1.60E-01		1.07E+00	7.69E-02
	RN-219	401.80		6.50	7.49E-01	7.49E-01	6.08E-02	3.55E-01
	RA-223	323.87		3.88	1.32E+00	1.32E+00	8.50E-01	6.31E-01
	RA-224	240.98		3.95	2.50E+00	2.50E+00	9.56E+00	1.23E+00
	RA-225	40.00		31.00	3.32E+01	3.32E+01	3.21E+01	1.61E+01
+	RA-226	186.21	*	3.28	2.36E+00	2.36E+00	2.87E+00	1.15E+00
	TH-227	50.10		8.40	5.28E-01	5.28E-01	-3.07E-01	2.54E-01
		236.00		11.50	5.90E-01		-4.95E+00	2.87E-01
		256.20		6.30	7.20E-01		-3.37E-01	3.45E-01
+	AC-228	338.32	*	11.40	7.94E-01	4.99E-01	1.55E+00	3.87E-01
		911.07	*	27.70	4.99E-01		1.42E+00	2.41E-01
		969.11	*	16.60	8.30E-01		1.51E+00	3.99E-01
	TH-230	48.44		16.90	2.78E-01	2.78E-01	-3.11E-01	1.34E-01
		62.85		4.60	1.08E+00		1.02E+00	5.28E-01
		67.67		0.37	1.19E+01		1.93E+00	5.76E+00
	PA-231	283.67		1.60	2.89E+00	2.12E+00	-5.73E-01	1.38E+00
		302.67		2.30	2.12E+00		-2.81E-02	1.01E+00
	TH-231	25.64		14.70	1.19E-01	1.19E-01	0.00E+00	0.00E+00
		84.21		6.40	6.10E-01		-9.03E-01	2.96E-01
	PA-233	311.98		38.60	1.60E+00	1.60E+00	2.50E-01	7.62E-01
	PA-234	131.20		20.40	1.70E-01	1.70E-01	-4.93E-02	8.21E-02
		733.99		8.80	7.36E-01		-8.30E-02	3.44E-01
		946.00		12.00	6.05E-01		-3.91E-02	2.81E-01
+	PA-234M	1001.03	*	0.92	1.02E+01	1.02E+01	6.18E+00	4.82E+00
	TH-234	63.29		3.80	1.32E+00	1.32E+00	1.70E+00	6.41E-01

Analysis Report for 1707091-17

HTC-A08-BKGD02-2430-01

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
U-235	143.76	10.50	4.67E-01	4.67E-01	1.24E-01	2.27E-01
	163.35	4.70	9.35E-01		-9.09E-02	4.52E-01
	205.31	4.70	1.01E+00		-2.34E-01	4.86E-01
NP-237	86.50	12.60	3.70E-01	3.70E-01	5.04E-01	1.80E-01
NP-239	106.10	22.70	1.20E+12	1.20E+12	6.88E+11	5.80E+11
	228.18	10.70	3.50E+12		8.21E+11	1.69E+12
	277.60	14.10	2.86E+12		1.90E+12	1.37E+12
AM-241	59.54	35.90	1.24E-01	1.24E-01	3.64E-03	6.03E-02
AM-243	74.67	66.00	8.76E-02	8.76E-02	-1.50E-01	4.29E-02
CM-243	209.75	3.29	1.66E+00	3.58E-01	1.23E+00	8.04E-01
	228.14	10.60	4.39E-01		1.03E-01	2.11E-01
	277.60	14.00	3.58E-01		2.37E-01	1.72E-01

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

No Action Level results available for reporting purposes.

DATA REVIEW COMMENTS REPORT

Creation Date	Comment	User

No Data Review Comments Entered.

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

Sample Title: HTC-A08-BKGD02-2430-01

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	0	0	0	0	0	0
25:	0	0	0	0	35	84	129	134
33:	229	687	117	124	102	86	101	131
41:	112	86	75	72	70	81	138	78
49:	67	65	77	86	102	96	86	98
57:	94	95	108	111	116	119	151	195
65:	127	110	141	123	134	136	144	152
73:	134	172	376	223	442	397	100	126
81:	93	102	91	126	136	104	202	223
89:	120	174	124	105	205	173	125	104
97:	71	75	95	103	80	65	78	76
105:	99	83	78	70	91	67	79	81
113:	79	76	68	77	75	64	61	69
121:	70	70	70	93	67	77	88	79
129:	114	92	76	71	75	73	61	72
137:	86	65	57	71	80	63	91	108
145:	96	86	86	81	74	78	74	63
153:	82	107	71	78	66	61	65	74
161:	79	72	62	73	53	47	54	71
169:	66	67	63	42	64	65	79	50
177:	57	60	70	69	65	60	64	56
185:	78	148	116	64	57	51	46	52
193:	56	58	45	55	37	52	49	58
201:	50	62	51	45	60	56	55	60
209:	99	78	49	58	56	39	61	71
217:	50	66	46	54	43	40	43	49
225:	46	42	46	45	39	48	37	51
233:	44	51	35	57	54	267	590	98
241:	102	106	77	38	39	39	36	32
249:	42	27	38	40	47	30	34	33
257:	41	41	38	41	40	31	36	31
265:	38	46	39	26	41	67	57	52
273:	34	40	38	28	49	44	35	37
281:	24	26	31	33	27	44	43	41
289:	29	25	36	26	26	47	192	122
297:	30	33	41	58	49	27	30	33
305:	23	28	33	31	21	18	30	28
313:	29	34	30	31	23	29	23	21
321:	32	41	38	32	20	32	34	69
329:	43	35	27	26	21	28	35	25
337:	31	119	103	26	35	28	21	28
345:	27	30	17	26	22	24	109	308
353:	101	11	24	32	22	28	24	30
361:	25	26	23	27	27	17	27	19

369:	27	19	22	21	23	24	32	18

Sample Title: HTC-A08-BKGD02-2430-01

Channel								
377:	22	20	19	17	25	24	32	27
385:	22	30	25	31	26	26	17	19
393:	27	30	25	20	22	17	22	18
401:	21	30	18	18	19	19	22	26
409:	33	29	16	23	23	16	19	22
417:	23	25	14	21	13	16	22	23
425:	18	18	21	21	25	24	20	26
433:	20	10	24	18	15	18	24	16
441:	16	16	21	17	13	9	19	15
449:	21	17	15	20	17	15	17	16
457:	12	26	13	15	13	28	47	22
465:	17	17	10	18	14	22	13	12
473:	19	20	19	16	13	15	16	17
481:	21	18	12	16	19	12	16	10
489:	13	19	15	20	23	18	15	18
497:	17	10	19	17	13	16	11	17
505:	13	7	15	24	28	61	92	42
513:	17	17	14	15	10	7	12	14
521:	13	15	13	14	14	9	14	22
529:	11	13	16	18	7	10	16	8
537:	12	9	15	12	11	17	15	9
545:	22	17	15	12	12	16	10	15
553:	11	19	11	19	11	14	24	14
561:	21	19	15	11	16	17	12	10
569:	11	14	13	20	16	18	14	14
577:	16	5	20	17	20	52	145	90
585:	19	5	15	10	11	14	13	5
593:	13	18	11	8	10	15	13	13
601:	12	11	15	9	10	18	20	71
609:	198	109	22	10	11	12	10	11
617:	13	8	11	9	14	9	14	14
625:	10	10	12	6	13	12	10	11
633:	13	11	10	12	11	19	11	16
641:	12	13	13	9	16	12	12	12
649:	9	8	8	12	13	10	6	11
657:	15	15	15	14	21	18	10	15
665:	13	17	9	11	11	15	17	7
673:	17	13	8	10	8	7	12	12
681:	12	8	14	13	14	11	9	10
689:	12	12	14	12	14	12	8	12
697:	13	11	14	6	20	10	17	11
705:	11	13	13	15	9	16	15	7
713:	7	8	12	11	6	14	10	13
721:	9	15	10	14	13	22	48	23
729:	15	5	6	12	8	11	15	9
737:	10	8	15	8	8	13	14	13
745:	5	9	6	10	9	10	10	7
753:	14	13	15	11	8	5	10	9
761:	10	9	18	17	13	5	18	32
769:	20	9	14	14	16	9	5	7
777:	8	7	6	15	13	13	7	14
785:	8	12	6	9	12	7	13	13
793:	14	18	13	14	6	7	8	9

801:	6	14	10	6	10	8	10	8

Sample Title: HTC-A08-BKGD02-2430-01

Channel								
809:	4	4	2	6	6	7	7	7
817:	10	9	9	8	13	14	6	7
825:	8	10	12	8	8	9	14	7
833:	9	6	11	7	10	7	12	11
841:	13	6	7	11	9	8	4	6
849:	10	6	2	4	11	9	9	8
857:	12	9	8	21	15	13	6	5
865:	11	4	9	7	5	11	8	7
873:	7	4	13	7	10	5	6	10
881:	5	7	4	7	10	10	5	8
889:	9	6	12	3	10	4	12	11
897:	8	9	8	9	2	14	12	10
905:	8	5	8	8	13	59	115	46
913:	11	7	8	10	5	4	7	4
921:	12	7	5	8	5	5	10	7
929:	10	6	10	5	11	11	12	4
937:	6	8	3	7	7	4	8	8
945:	3	8	11	16	12	9	7	8
953:	8	8	9	5	11	7	10	11
961:	9	9	15	12	23	17	16	42
969:	68	28	7	7	5	4	6	7
977:	4	10	6	8	9	9	6	9
985:	3	4	6	1	6	5	6	10
993:	13	5	7	5	10	10	6	17
1001:	13	8	11	5	8	5	7	3
1009:	7	4	7	9	6	4	10	15
1017:	7	8	8	6	10	6	8	7
1025:	10	3	7	11	6	7	11	6
1033:	5	6	5	10	7	7	7	9
1041:	5	4	9	4	8	6	12	13
1049:	6	4	6	13	8	4	12	9
1057:	6	10	7	4	13	5	10	8
1065:	8	5	10	8	9	8	7	4
1073:	14	6	9	10	6	8	10	8
1081:	7	6	10	11	5	10	3	8
1089:	3	7	13	8	4	15	7	14
1097:	8	5	13	9	5	7	4	9
1105:	9	5	9	6	9	11	7	7
1113:	8	12	8	9	5	9	20	41
1121:	33	14	6	7	7	7	5	13
1129:	10	6	6	8	10	6	12	4
1137:	6	6	8	6	9	10	8	10
1145:	4	12	6	6	8	5	9	8
1153:	6	17	11	4	6	11	5	13
1161:	6	8	13	8	8	9	10	5
1169:	6	9	8	9	10	11	7	8
1177:	10	7	14	9	6	6	11	11
1185:	9	9	9	14	11	4	7	11
1193:	11	7	10	1	15	14	10	16
1201:	6	9	4	14	6	10	12	19
1209:	8	11	9	9	9	11	11	5
1217:	12	10	10	14	8	16	9	12
1225:	8	17	4	10	13	13	8	6

1233:	6	5	10	14	18	31	24	11

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Channel								
1241:	7	15	9	13	9	6	10	10
1249:	9	9	6	7	6	11	11	9
1257:	4	5	11	5	4	9	6	3
1265:	7	5	7	4	6	13	7	5
1273:	5	7	6	4	9	6	13	7
1281:	5	4	9	4	2	1	6	10
1289:	10	3	7	4	5	7	5	2
1297:	6	4	5	6	7	5	3	1
1305:	6	7	7	3	3	4	3	4
1313:	7	5	7	8	2	3	9	8
1321:	5	7	3	4	4	4	6	8
1329:	3	4	4	9	2	4	1	2
1337:	5	3	5	3	0	4	2	5
1345:	0	2	4	5	6	3	2	4
1353:	7	5	4	1	4	3	5	4
1361:	2	1	0	3	1	3	2	3
1369:	3	3	3	1	2	7	4	4
1377:	6	5	3	3	4	6	1	2
1385:	3	3	0	1	2	4	2	4
1393:	2	3	5	1	3	3	4	6
1401:	4	6	0	6	7	4	4	6
1409:	2	5	1	0	6	2	4	3
1417:	5	3	0	5	2	1	2	2
1425:	3	2	1	3	3	3	2	2
1433:	3	3	0	2	2	4	4	3
1441:	5	2	1	7	7	4	2	2
1449:	2	1	4	8	2	4	3	10
1457:	20	54	164	348	266	61	12	3
1465:	2	1	2	2	1	2	1	1
1473:	4	1	0	2	1	0	1	2
1481:	1	1	3	4	3	2	1	1
1489:	0	2	1	4	2	1	3	4
1497:	3	5	2	3	3	3	2	3
1505:	0	3	4	4	2	2	0	3
1513:	0	1	1	3	1	1	0	1
1521:	1	3	2	3	1	2	2	2
1529:	0	2	2	0	1	2	2	1
1537:	0	2	3	0	3	1	4	4
1545:	1	1	1	1	4	1	2	1
1553:	1	2	3	1	3	1	0	0
1561:	2	1	0	3	1	3	1	2
1569:	2	3	1	3	0	4	1	1
1577:	1	1	3	1	1	1	1	4
1585:	1	4	7	10	5	1	2	6
1593:	3	4	1	0	1	0	0	0
1601:	2	1	1	1	0	1	1	0
1609:	1	0	0	1	6	0	1	4
1617:	2	0	2	5	6	1	1	1
1625:	0	0	1	1	2	7	4	3
1633:	2	0	2	2	5	0	0	2
1641:	0	0	2	3	1	0	0	0
1649:	2	2	0	1	1	2	3	0
1657:	3	5	1	2	1	2	2	2

1665:	2	1	2	3	1	1	0	1

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Channel								
1673:	0	1	1	0	3	0	3	2
1681:	1	0	0	0	1	1	3	1
1689:	1	3	1	2	3	3	0	0
1697:	2	0	1	2	3	1	2	2
1705:	0	0	2	0	1	1	3	0
1713:	0	1	2	2	1	2	0	1
1721:	1	0	4	1	0	1	3	4
1729:	5	2	4	2	3	0	1	3
1737:	0	2	1	2	2	2	3	1
1745:	1	0	1	2	3	1	0	3
1753:	0	1	0	3	2	1	2	3
1761:	3	4	15	23	9	2	2	1
1769:	1	1	1	0	0	2	0	0
1777:	0	0	0	1	0	0	1	1
1785:	0	1	0	4	2	1	1	2
1793:	1	2	0	1	0	4	0	1
1801:	2	1	0	0	0	0	1	3
1809:	2	2	1	1	3	0	2	2
1817:	1	1	3	0	3	1	0	2
1825:	1	2	2	0	0	0	0	1
1833:	1	1	1	2	2	1	2	0
1841:	1	3	2	0	0	6	3	0
1849:	0	1	0	1	2	2	1	1
1857:	0	1	0	1	3	2	1	2
1865:	1	2	3	0	0	1	1	0
1873:	0	0	1	0	1	2	0	1
1881:	0	0	0	1	2	4	1	0
1889:	1	1	1	1	1	0	1	0
1897:	2	1	0	1	3	1	1	2
1905:	1	0	0	0	0	0	2	4
1913:	2	0	0	0	3	2	2	1
1921:	2	0	2	0	5	2	0	3
1929:	0	0	1	4	2	0	3	0
1937:	1	0	0	0	1	1	2	2
1945:	1	1	1	2	1	1	1	3
1953:	2	1	0	1	0	0	0	3
1961:	0	1	1	0	2	0	1	0
1969:	2	1	0	0	2	5	1	2
1977:	0	1	2	3	2	1	2	2
1985:	0	1	1	3	0	1	1	1
1993:	0	1	3	0	2	4	0	0
2001:	3	0	1	0	1	1	0	0
2009:	0	1	2	0	2	1	1	2
2017:	0	0	0	1	3	0	0	1
2025:	0	0	1	0	0	1	0	1
2033:	2	5	2	2	1	0	1	2
2041:	2	0	0	0	0	1	1	0
2049:	0	1	1	3	0	4	1	1
2057:	0	0	2	0	0	0	1	0
2065:	2	2	0	0	2	1	0	1
2073:	1	0	0	0	0	0	0	1
2081:	1	1	1	0	0	0	1	1
2089:	0	1	1	0	0	0	0	2

2097:	0	2	1	0	5	5	4	5

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

2529:	0	0	0	2	1	0	1	0

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Channel								
2537:	0	0	0	0	0	1	0	0
2545:	0	0	0	1	0	0	1	0
2553:	0	0	0	0	2	0	0	0
2561:	1	0	0	0	1	0	1	0
2569:	0	1	1	0	0	0	0	0
2577:	1	0	0	0	0	0	2	1
2585:	1	0	0	1	0	0	0	0
2593:	0	0	0	0	0	0	1	2
2601:	0	0	0	0	1	1	1	3
2609:	7	3	10	18	22	22	11	3
2617:	1	0	0	0	0	0	0	0
2625:	0	0	0	1	0	0	0	0
2633:	0	0	0	0	0	0	0	2
2641:	2	0	1	0	1	0	0	0
2649:	0	0	0	1	1	0	1	0
2657:	0	0	0	1	0	0	0	1
2665:	2	0	0	1	0	0	0	0
2673:	0	0	0	0	0	0	0	0
2681:	0	1	0	1	0	0	0	0
2689:	0	1	0	2	0	1	0	0
2697:	0	0	0	1	1	0	1	0
2705:	0	0	0	0	1	0	0	0
2713:	0	1	0	0	0	1	0	0
2721:	0	1	0	0	0	0	0	0
2729:	0	1	1	0	0	1	0	1
2737:	0	0	0	0	1	0	0	0
2745:	0	0	0	0	0	0	0	2
2753:	0	0	1	1	2	0	0	0
2761:	0	0	0	0	0	1	0	0
2769:	0	0	0	0	1	1	0	0
2777:	0	0	0	0	0	0	0	1
2785:	0	0	0	0	0	0	0	0
2793:	0	0	0	0	0	0	1	0
2801:	0	0	0	0	1	0	0	0
2809:	0	0	0	0	0	1	0	0
2817:	0	0	0	1	0	0	0	0
2825:	1	0	0	1	0	0	1	1
2833:	0	0	0	0	0	1	0	0
2841:	0	0	1	1	0	0	0	0
2849:	0	0	0	0	0	0	0	0
2857:	0	0	0	2	0	0	0	0
2865:	0	0	1	0	0	0	0	0
2873:	0	0	0	0	1	1	0	1
2881:	1	0	0	0	0	0	0	0
2889:	0	0	0	0	0	1	0	1
2897:	0	0	1	0	0	0	0	1
2905:	0	1	0	0	1	1	0	0
2913:	0	0	0	0	0	0	1	0
2921:	0	1	0	0	0	0	0	0
2929:	0	0	0	0	0	0	0	0
2937:	1	0	0	0	0	0	0	0
2945:	0	0	0	3	0	1	0	1
2953:	0	0	0	1	0	1	0	0

2961:	0	0	0	1	0	0	1	1

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

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

3825:	0	0	0	0	0	0	0	1

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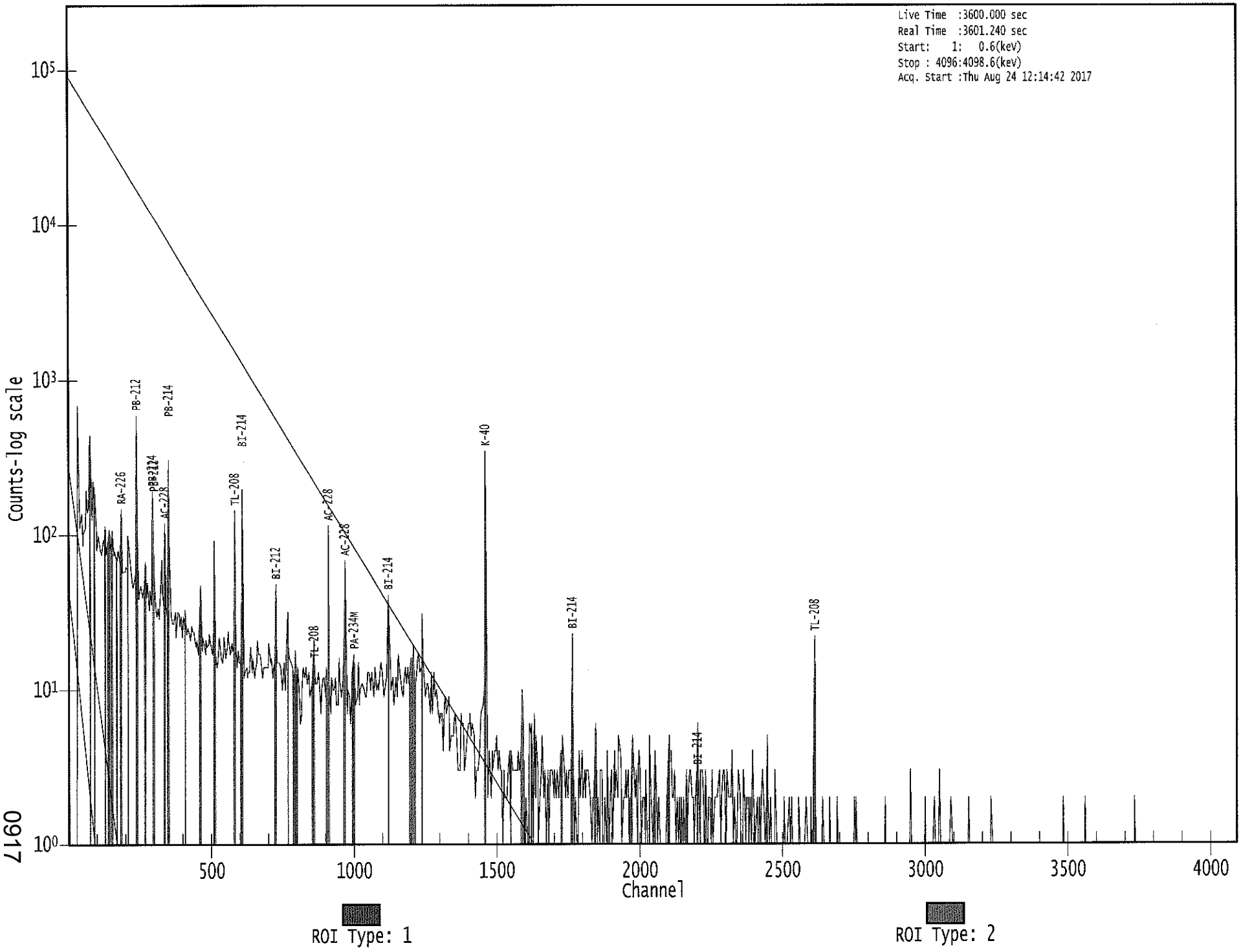
Channel								
3833:	0	1	0	1	0	0	0	0
3841:	0	0	0	1	0	0	0	0
3849:	0	0	0	0	1	0	0	0
3857:	0	0	0	0	0	0	0	0
3865:	0	0	0	0	0	0	0	0
3873:	0	0	0	0	0	0	1	0
3881:	0	0	0	0	0	0	0	0
3889:	0	0	0	1	0	1	0	0
3897:	0	0	0	0	0	1	0	0
3905:	0	0	0	0	0	0	0	1
3913:	0	0	1	1	0	0	0	0
3921:	0	0	0	0	0	0	0	0
3929:	0	0	0	0	0	0	0	0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

0000055904.CNF



0917

Apex-Gamma

Analysis Report for 1707091-18

HTC-A08-BKGD02-3036-01

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 1707091-18
Sample Description	: HTC-A08-BKGD02-3036-01
Sample Type	: SOIL
Sample Size	: 6.755E+02 grams
Facility	: Countroom
Sample Taken On	: 5/15/2017 1:00:12PM
Acquisition Started	: 8/24/2017 1:13:57PM
Procedure	: GAS-1602 pCi
Operator	: Administrator
Detector Name	: GE3
Geometry	: GAS-1602
Live Time	: 3600.0 seconds
Real Time	: 3608.6 seconds
Dead Time	: 0.24 %
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	: 1/14/2017
Efficiency Calibration Used Done On	: 1/14/2017
Efficiency Calibration Description	:
Sample Number	: 55907

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

Analysis Report for 1707091-18

HTC-A08-BKGD02-3036-01

PEAK LOCATE REPORT

Peak Locate Performed on : 8/24/2017 2:14:07PM
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	46.59	46.91	0.0000	0.00
2	64.00	64.30	0.0000	0.00
3	76.53	76.84	0.0000	0.00
4	87.21	87.51	0.0000	0.00
5	93.19	93.49	0.0000	0.00
6	129.08	129.36	0.0000	0.00
7	186.25	186.52	0.0000	0.00
8	210.04	210.30	0.0000	0.00
9	238.94	239.19	0.0000	0.00
10	242.30	242.55	0.0000	0.00
11	278.74	278.97	0.0000	0.00
12	295.42	295.65	0.0000	0.00
13	300.82	301.04	0.0000	0.00
14	339.05	339.26	0.0000	0.00
15	352.36	352.57	0.0000	0.00
16	499.85	500.01	0.0000	0.00
17	510.90	511.05	0.0000	0.00
18	531.84	531.98	0.0000	0.00
19	583.81	583.94	0.0000	0.00
20	609.56	609.68	0.0000	0.00
21	729.89	729.97	0.0000	0.00
22	757.26	757.33	0.0000	0.00
23	768.22	768.29	0.0000	0.00
24	911.60	911.62	0.0000	0.00
25	969.83	969.83	0.0000	0.00
26	999.66	999.65	0.0000	0.00
27	1114.59	1114.54	0.0000	0.00
28	1120.78	1120.73	0.0000	0.00
29	1245.31	1245.22	0.0000	0.00
30	1284.61	1284.50	0.0000	0.00
31	1377.70	1377.56	0.0000	0.00
32	1430.36	1430.20	0.0000	0.00
33	1437.96	1437.80	0.0000	0.00
34	1456.16	1456.00	0.0000	0.00
35	1461.09	1460.93	0.0000	0.00
36	1530.97	1530.78	0.0000	0.00
37	1625.52	1625.30	0.0000	0.00
38	1629.46	1629.24	0.0000	0.00
39	1660.92	1660.69	0.0000	0.00
40	1685.39	1685.15	0.0000	0.00
41	1728.98	1728.72	0.0000	0.00
42	1765.02	1764.75	0.0000	0.00

Analysis Report for 1707091-18

HTC-A08-BKGD02-3036-01

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
43	1847.22	1846.92	0.0000	0.00
44	1983.34	1983.00	0.0000	0.00
45	2102.47	2102.08	0.0000	0.00
46	2205.01	2204.60	0.0000	0.00
47	2614.98	2614.43	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1707091-18

HTC-A08-BKGD02-3036-01

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 8/24/2017 2:14:07PM

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	46.59	44 -	50	46.91	1.35E+02	86.80	1.28E+03	1.68
m	2	64.00	58 -	81	64.30	2.88E+02	142.21	2.34E+03	3.52
m	3	76.53	58 -	81	76.84	1.12E+03	155.42	2.59E+03	3.56
M	4	87.21	83 -	97	87.51	1.71E+02	88.40	1.40E+03	2.03
m	5	93.19	83 -	97	93.49	2.88E+02	90.06	1.28E+03	2.05
	6	129.08	126 -	133	129.36	7.90E+01	89.33	1.28E+03	1.53
	7	186.25	183 -	191	186.52	1.72E+02	88.07	1.09E+03	2.51
	8	210.04	207 -	214	210.30	1.22E+02	72.66	7.97E+02	2.68
M	9	238.94	234 -	246	239.19	8.89E+02	84.18	5.94E+02	2.25
m	10	242.30	234 -	246	242.55	1.44E+02	80.79	5.44E+02	2.27
	11	278.74	274 -	284	278.97	8.23E+01	73.85	6.71E+02	5.74
	12	295.42	291 -	299	295.65	1.70E+02	67.66	6.02E+02	1.99
	13	300.82	299 -	305	301.04	5.96E+01	47.52	3.67E+02	1.91
	14	339.05	335 -	343	339.26	1.89E+02	58.88	4.13E+02	2.63
	15	352.36	348 -	359	352.57	2.64E+02	82.78	7.19E+02	2.23
	16	499.85	495 -	504	500.01	4.67E+01	39.85	2.01E+02	3.39
	17	510.90	506 -	515	511.05	1.70E+02	51.38	2.80E+02	1.72
	18	531.84	530 -	535	531.98	2.06E+01	24.90	1.07E+02	2.39
	19	583.81	579 -	590	583.94	2.30E+02	56.21	2.73E+02	2.26
	20	609.56	604 -	614	609.68	2.78E+02	53.32	2.31E+02	2.67
	21	729.89	723 -	738	729.97	8.32E+01	52.57	2.24E+02	8.01
	22	757.26	751 -	763	757.33	4.49E+01	43.47	2.00E+02	5.23
	23	768.22	765 -	771	768.29	2.67E+01	30.04	1.47E+02	1.24
	24	911.60	906 -	916	911.62	1.40E+02	41.41	1.53E+02	2.50
	25	969.83	966 -	976	969.83	7.40E+01	42.35	1.74E+02	2.49
	26	999.66	997 -	1002	999.65	1.83E+01	18.95	5.74E+01	1.22
M	27	1114.59	1105 -	1134	1114.54	1.68E+01	23.24	7.46E+01	2.67
m	28	1120.78	1105 -	1134	1120.73	6.45E+01	29.41	8.61E+01	2.94
	29	1245.31	1243 -	1248	1245.22	1.77E+01	21.31	7.45E+01	3.18
	30	1284.61	1282 -	1287	1284.50	1.70E+01	17.69	4.59E+01	2.64
	31	1377.70	1373 -	1381	1377.56	2.74E+01	19.24	3.92E+01	1.91
	32	1430.36	1428 -	1434	1430.20	9.00E+00	10.63	1.40E+01	1.66
	33	1437.96	1435 -	1441	1437.80	1.00E+01	10.82	1.40E+01	2.92
M	34	1456.16	1455 -	1465	1456.00	1.25E+01	2.35	5.99E+00	2.34
m	35	1461.09	1455 -	1465	1460.93	7.33E+02	55.39	2.31E+01	2.70
	36	1530.97	1527 -	1534	1530.78	9.54E+00	9.17	6.92E+00	2.86
M	37	1625.52	1624 -	1634	1625.30	6.41E+00	3.87	3.60E-01	3.27
m	38	1629.46	1624 -	1634	1629.24	1.11E+01	11.49	9.84E+00	2.64
	39	1660.92	1657 -	1663	1660.69	7.50E+00	8.28	7.00E+00	1.28
	40	1685.39	1681 -	1688	1685.15	9.05E+00	7.75	3.91E+00	3.54

Analysis Report for 1707091-18

HTC-A08-BKGD02-3036-01

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
41	1728.98	1725 -	1732	1728.72	1.69E+01	10.77	8.29E+00	3.49
42	1765.02	1757 -	1773	1764.75	4.98E+01	21.56	2.45E+01	3.42
43	1847.22	1843 -	1850	1846.92	1.01E+01	8.00	3.75E+00	1.91
44	1983.34	1980 -	1985	1983.00	7.00E+00	5.29	0.00E+00	1.92
45	2102.47	2097 -	2106	2102.08	1.10E+01	10.68	1.00E+01	2.91
46	2205.01	2200 -	2207	2204.60	1.07E+01	11.66	1.47E+01	1.55
47	2614.98	2610 -	2619	2614.43	6.70E+01	18.38	1.00E+01	2.19

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

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 8/24/2017 2:14:07PM

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	46.59	44 -	50	1.35E+02	86.80	1.28E+03	6.88E+01
m	2	64.00	58 -	81	2.88E+02	142.21	2.34E+03	7.95E+01
m	3	76.53	58 -	81	1.12E+03	155.42	2.59E+03	8.37E+01
M	4	87.21	83 -	97	1.71E+02	88.40	1.40E+03	6.15E+01
m	5	93.19	83 -	97	2.88E+02	90.06	1.28E+03	5.89E+01
	6	129.08	126 -	133	7.90E+01	89.33	1.28E+03	7.20E+01
	7	186.25	183 -	191	1.72E+02	88.07	1.09E+03	6.91E+01
	8	210.04	207 -	214	1.22E+02	72.66	7.97E+02	5.69E+01
M	9	238.94	234 -	246	8.89E+02	84.18	5.94E+02	4.01E+01
m	10	242.30	234 -	246	1.44E+02	80.79	5.44E+02	3.84E+01
	11	278.74	274 -	284	8.23E+01	73.85	6.71E+02	5.88E+01
	12	295.42	291 -	299	1.70E+02	67.66	6.02E+02	5.13E+01
	13	300.82	299 -	305	5.96E+01	47.52	3.67E+02	3.69E+01
	14	339.05	335 -	343	1.89E+02	58.88	4.13E+02	4.28E+01
	15	352.36	348 -	359	2.64E+02	82.78	7.19E+02	6.26E+01
	16	499.85	495 -	504	4.67E+01	39.85	2.01E+02	3.08E+01
	17	510.90	506 -	515	1.70E+02	51.38	2.80E+02	3.64E+01
	18	531.84	530 -	535	2.06E+01	24.90	1.07E+02	1.91E+01
	19	583.81	579 -	590	2.30E+02	56.21	2.73E+02	3.89E+01
	20	609.56	604 -	614	2.78E+02	53.32	2.31E+02	3.42E+01

Analysis Report for 1707091-18

HTC-A08-BKGD02-3036-01

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	21	729.89	723 -	738	8.32E+01	52.57	2.24E+02	4.05E+01
	22	757.26	751 -	763	4.49E+01	43.47	2.00E+02	3.40E+01
	23	768.22	765 -	771	2.67E+01	30.04	1.47E+02	2.32E+01
	24	911.60	906 -	916	1.40E+02	41.41	1.53E+02	2.79E+01
	25	969.83	966 -	976	7.40E+01	42.35	1.74E+02	3.18E+01
	26	999.66	997 -	1002	1.83E+01	18.95	5.74E+01	1.39E+01
M	27	1114.59	1105 -	1134	1.68E+01	23.24	7.46E+01	1.42E+01
m	28	1120.78	1105 -	1134	6.45E+01	29.41	8.61E+01	1.53E+01
	29	1245.31	1243 -	1248	1.77E+01	21.31	7.45E+01	1.61E+01
	30	1284.61	1282 -	1287	1.70E+01	17.69	4.59E+01	1.29E+01
	31	1377.70	1373 -	1381	2.74E+01	19.24	3.92E+01	1.33E+01
	32	1430.36	1428 -	1434	9.00E+00	10.63	1.40E+01	7.21E+00
	33	1437.96	1435 -	1441	1.00E+01	10.82	1.40E+01	7.21E+00
M	34	1456.16	1455 -	1465	1.25E+01	2.35	5.99E+00	4.02E+00
m	35	1461.09	1455 -	1465	7.33E+02	55.39	2.31E+01	7.91E+00
	36	1530.97	1527 -	1534	9.54E+00	9.17	6.92E+00	5.57E+00
M	37	1625.52	1624 -	1634	6.41E+00	3.87	3.60E-01	9.86E-01
m	38	1629.46	1624 -	1634	1.11E+01	11.49	9.84E+00	5.16E+00
	39	1660.92	1657 -	1663	7.50E+00	8.28	7.00E+00	5.10E+00
	40	1685.39	1681 -	1688	9.05E+00	7.75	3.91E+00	4.01E+00
	41	1728.98	1725 -	1732	1.69E+01	10.77	8.29E+00	5.73E+00
	42	1765.02	1757 -	1773	4.98E+01	21.56	2.45E+01	1.34E+01
	43	1847.22	1843 -	1850	1.01E+01	8.00	3.75E+00	3.98E+00
	44	1983.34	1980 -	1985	7.00E+00	5.29	0.00E+00	0.00E+00
	45	2102.47	2097 -	2106	1.10E+01	10.68	1.00E+01	6.88E+00
	46	2205.01	2200 -	2207	1.07E+01	11.66	1.47E+01	7.94E+00
	47	2614.98	2610 -	2619	6.70E+01	18.38	1.00E+01	6.88E+00

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

PEAK WITH NID REPORT

Peak Analysis Performed on : 8/24/2017 2:14:07PM

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

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

Analysis Report for 1707091-18

HTC-A08-BKGD02-3036-01

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	1	46.59	44 -	50	46.91	1.35E+02	86.80	1.28E+03	PB-210
m	2	64.00	58 -	81	64.30	2.88E+02	142.21	2.34E+03	TH-234
m	3	76.53	58 -	81	76.84	1.12E+03	155.42	2.59E+03	.....
M	4	87.21	83 -	97	87.51	1.71E+02	88.40	1.40E+03	SN-126
									NP-237
									EU-155
									CD-109
m	5	93.19	83 -	97	93.49	2.88E+02	90.06	1.28E+03	GA-67
	6	129.08	126 -	133	129.36	7.90E+01	89.33	1.28E+03	.....
	7	186.25	183 -	191	186.52	1.72E+02	88.07	1.09E+03	RA-226
	8	210.04	207 -	214	210.30	1.22E+02	72.66	7.97E+02	CM-243
M	9	238.94	234 -	246	239.19	8.89E+02	84.18	5.94E+02	PB-212
m	10	242.30	234 -	246	242.55	1.44E+02	80.79	5.44E+02	.....
	11	278.74	274 -	284	278.97	8.23E+01	73.85	6.71E+02	HG-203
									SE-75
	12	295.42	291 -	299	295.65	1.70E+02	67.66	6.02E+02	PB-214
	13	300.82	299 -	305	301.04	5.96E+01	47.52	3.67E+02	GA-67
									PB-212
									BI-210M
	14	339.05	335 -	343	339.26	1.89E+02	58.88	4.13E+02	AC-228
	15	352.36	348 -	359	352.57	2.64E+02	82.78	7.19E+02	PB-214
	16	499.85	495 -	504	500.01	4.67E+01	39.85	2.01E+02	.....
	17	510.90	506 -	515	511.05	1.70E+02	51.38	2.80E+02	.....
	18	531.84	530 -	535	531.98	2.06E+01	24.90	1.07E+02	ND-147
	19	583.81	579 -	590	583.94	2.30E+02	56.21	2.73E+02	TL-208
	20	609.56	604 -	614	609.68	2.78E+02	53.32	2.31E+02	BI-214
	21	729.89	723 -	738	729.97	8.32E+01	52.57	2.24E+02	.....
	22	757.26	751 -	763	757.33	4.49E+01	43.47	2.00E+02	ZR-95
	23	768.22	765 -	771	768.29	2.67E+01	30.04	1.47E+02	.....
	24	911.60	906 -	916	911.62	1.40E+02	41.41	1.53E+02	TL-204
									AC-228
	25	969.83	966 -	976	969.83	7.40E+01	42.35	1.74E+02	AC-228
	26	999.66	997 -	1002	999.65	1.83E+01	18.95	5.74E+01	.....
M	27	1114.59	1105 -	1134	1114.54	1.68E+01	23.24	7.46E+01	ZN-65
m	28	1120.78	1105 -	1134	1120.73	6.45E+01	29.41	8.61E+01	SC-46
									BI-214
									TA-182
	29	1245.31	1243 -	1248	1245.22	1.77E+01	21.31	7.45E+01	.....
	30	1284.61	1282 -	1287	1284.50	1.70E+01	17.69	4.59E+01	.....
	31	1377.70	1373 -	1381	1377.56	2.74E+01	19.24	3.92E+01	.....
	32	1430.36	1428 -	1434	1430.20	9.00E+00	10.63	1.40E+01	.....
	33	1437.96	1435 -	1441	1437.80	1.00E+01	10.82	1.40E+01	.....
M	34	1456.16	1455 -	1465	1456.00	1.25E+01	2.35	5.99E+00	.....
m	35	1461.09	1455 -	1465	1460.93	7.33E+02	55.39	2.31E+01	K-40
	36	1530.97	1527 -	1534	1530.78	9.54E+00	9.17	6.92E+00	.....
M	37	1625.52	1624 -	1634	1625.30	6.41E+00	3.87	3.60E-01	.....
m	38	1629.46	1624 -	1634	1629.24	1.11E+01	11.49	9.84E+00	.....
	39	1660.92	1657 -	1663	1660.69	7.50E+00	8.28	7.00E+00	.....
	40	1685.39	1681 -	1688	1685.15	9.05E+00	7.75	3.91E+00	.....
	41	1728.98	1725 -	1732	1728.72	1.69E+01	10.77	8.29E+00	.....
	42	1765.02	1757 -	1773	1764.75	4.98E+01	21.56	2.45E+01	BI-214
	43	1847.22	1843 -	1850	1846.92	1.01E+01	8.00	3.75E+00	.....
	44	1983.34	1980 -	1985	1983.00	7.00E+00	5.29	0.00E+00	.....
	45	2102.47	2097 -	2106	2102.08	1.10E+01	10.68	1.00E+01	.....

Analysis Report for 1707091-18

HTC-A08-BKGD02-3036-01

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
46	2205.01	2200 -	2207	2204.60	1.07E+01	11.66	1.47E+01	BI-214
47	2614.98	2610 -	2619	2614.43	6.70E+01	18.38	1.00E+01	TL-208

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

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 8/24/2017 2:14:07PM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	46.59	1.35E+02	86.80	1.73E-02	1.73E-03
m	2	64.00	2.88E+02	142.21	2.46E-02	1.81E-03
m	3	76.53	1.12E+03	155.42	2.67E-02	2.04E-03
M	4	87.21	1.71E+02	88.40	2.71E-02	2.24E-03
m	5	93.19	2.88E+02	90.06	2.71E-02	2.24E-03
	6	129.08	7.90E+01	89.33	2.46E-02	2.04E-03
	7	186.25	1.72E+02	88.07	1.96E-02	1.55E-03
	8	210.04	1.22E+02	72.66	1.79E-02	1.45E-03
M	9	238.94	8.89E+02	84.18	1.61E-02	1.34E-03
m	10	242.30	1.44E+02	80.79	1.59E-02	1.33E-03
	11	278.74	8.23E+01	73.85	1.42E-02	1.18E-03
	12	295.42	1.70E+02	67.66	1.35E-02	1.15E-03
	13	300.82	5.96E+01	47.52	1.33E-02	1.14E-03
	14	339.05	1.89E+02	58.88	1.19E-02	1.06E-03
	15	352.36	2.64E+02	82.78	1.15E-02	1.03E-03
	16	499.85	4.67E+01	39.85	8.42E-03	8.09E-04
	17	510.90	1.70E+02	51.38	8.26E-03	7.94E-04
	18	531.84	2.06E+01	24.90	7.96E-03	7.67E-04
	19	583.81	2.30E+02	56.21	7.32E-03	6.98E-04
	20	609.56	2.78E+02	53.32	7.04E-03	6.64E-04
	21	729.89	8.32E+01	52.57	5.99E-03	5.34E-04
	22	757.26	4.49E+01	43.47	5.80E-03	5.10E-04
	23	768.22	2.67E+01	30.04	5.72E-03	5.01E-04
	24	911.60	1.40E+02	41.41	4.92E-03	3.84E-04
	25	969.83	7.40E+01	42.35	4.66E-03	3.74E-04
	26	999.66	1.83E+01	18.95	4.54E-03	3.69E-04
M	27	1114.59	1.68E+01	23.24	4.14E-03	3.51E-04
m	28	1120.78	6.45E+01	29.41	4.12E-03	3.50E-04

Analysis Report for 1707091-18

HTC-A08-BKGD02-3036-01

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	29	1245.31	1.77E+01	21.31	3.77E-03	3.20E-04
	30	1284.61	1.70E+01	17.69	3.67E-03	3.09E-04
	31	1377.70	2.74E+01	19.24	3.47E-03	2.88E-04
	32	1430.36	9.00E+00	10.63	3.37E-03	2.80E-04
	33	1437.96	1.00E+01	10.82	3.35E-03	2.79E-04
M	34	1456.16	1.25E+01	2.35	3.32E-03	2.76E-04
m	35	1461.09	7.33E+02	55.39	3.31E-03	2.75E-04
	36	1530.97	9.54E+00	9.17	3.19E-03	2.64E-04
M	37	1625.52	6.41E+00	3.87	3.05E-03	2.49E-04
m	38	1629.46	1.11E+01	11.49	3.04E-03	2.48E-04
	39	1660.92	7.50E+00	8.28	3.00E-03	2.43E-04
	40	1685.39	9.05E+00	7.75	2.96E-03	2.39E-04
	41	1728.98	1.69E+01	10.77	2.91E-03	2.32E-04
	42	1765.02	4.98E+01	21.56	2.86E-03	2.26E-04
	43	1847.22	1.01E+01	8.00	2.77E-03	2.15E-04
	44	1983.34	7.00E+00	5.29	2.64E-03	2.15E-04
	45	2102.47	1.10E+01	10.68	2.54E-03	2.15E-04
	46	2205.01	1.07E+01	11.66	2.46E-03	2.15E-04
	47	2614.98	6.70E+01	18.38	2.24E-03	2.15E-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 : 8/24/2017 2:14:07PM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000055575.CNF

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	1	46.59	1.35E+02	86.80	4.47E+01	1.09E+01	9.00E+01	8.75E+01
m	2	64.00	2.88E+02	142.21	4.12E+01	5.67E+00	2.47E+02	1.42E+02
m	3	76.53	1.12E+03	155.42			1.12E+03	1.55E+02
M	4	87.21	1.71E+02	88.40			1.71E+02	8.84E+01
m	5	93.19	2.88E+02	90.06	7.98E+01	7.31E+00	2.09E+02	9.04E+01
	6	129.08	7.90E+01	89.33			7.90E+01	8.93E+01
	7	186.25	1.72E+02	88.07	3.06E+01	5.82E+00	1.42E+02	8.83E+01
	8	210.04	1.22E+02	72.66			1.22E+02	7.27E+01
M	9	238.94	8.89E+02	84.18	1.40E+01	2.71E+00	8.75E+02	8.42E+01
m	10	242.30	1.44E+02	80.79			1.44E+02	8.08E+01
	11	278.74	8.23E+01	73.85			8.23E+01	7.38E+01

Analysis Report for 1707091-18

HTC-A08-BKGD02-3036-01

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	12	295.42	1.70E+02	67.66			1.70E+02	6.77E+01
	13	300.82	5.96E+01	47.52			5.96E+01	4.75E+01
	14	339.05	1.89E+02	58.88			1.89E+02	5.89E+01
	15	352.36	2.64E+02	82.78	6.53E+00	4.43E+00	2.58E+02	8.29E+01
	16	499.85	4.67E+01	39.85			4.67E+01	3.98E+01
	17	510.90	1.70E+02	51.38	5.21E+01	4.74E+00	1.18E+02	5.16E+01
	18	531.84	2.06E+01	24.90			2.06E+01	2.49E+01
	19	583.81	2.30E+02	56.21			2.30E+02	5.62E+01
	20	609.56	2.78E+02	53.32	3.25E+00	2.97E+00	2.74E+02	5.34E+01
	21	729.89	8.32E+01	52.57			8.32E+01	5.26E+01
	22	757.26	4.49E+01	43.47			4.49E+01	4.35E+01
	23	768.22	2.67E+01	30.04			2.67E+01	3.00E+01
	24	911.60	1.40E+02	41.41	2.85E+00	2.76E+00	1.38E+02	4.15E+01
	25	969.83	7.40E+01	42.35			7.40E+01	4.23E+01
	26	999.66	1.83E+01	18.95			1.83E+01	1.89E+01
M	27	1114.59	1.68E+01	23.24			1.68E+01	2.32E+01
m	28	1120.78	6.45E+01	29.41			6.45E+01	2.94E+01
	29	1245.31	1.77E+01	21.31			1.77E+01	2.13E+01
	30	1284.61	1.70E+01	17.69			1.70E+01	1.77E+01
	31	1377.70	2.74E+01	19.24			2.74E+01	1.92E+01
	32	1430.36	9.00E+00	10.63			9.00E+00	1.06E+01
	33	1437.96	1.00E+01	10.82			1.00E+01	1.08E+01
M	34	1456.16	1.25E+01	2.35			1.25E+01	2.35E+00
m	35	1461.09	7.33E+02	55.39	1.00E+00	1.77E+00	7.32E+02	5.54E+01
	36	1530.97	9.54E+00	9.17			9.54E+00	9.17E+00
M	37	1625.52	6.41E+00	3.87			6.41E+00	3.87E+00
m	38	1629.46	1.11E+01	11.49			1.11E+01	1.15E+01
	39	1660.92	7.50E+00	8.28			7.50E+00	8.28E+00
	40	1685.39	9.05E+00	7.75			9.05E+00	7.75E+00
	41	1728.98	1.69E+01	10.77			1.69E+01	1.08E+01
	42	1765.02	4.98E+01	21.56			4.98E+01	2.16E+01
	43	1847.22	1.01E+01	8.00			1.01E+01	8.00E+00
	44	1983.34	7.00E+00	5.29			7.00E+00	5.29E+00
	45	2102.47	1.10E+01	10.68			1.10E+01	1.07E+01
	46	2205.01	1.07E+01	11.66			1.07E+01	1.17E+01
	47	2614.98	6.70E+01	18.38	1.86E+00	1.12E+00	6.51E+01	1.84E+01

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

Analysis Report for 1707091-18

HTC-A08-BKGD02-3036-01

AREA CORRECTION REPORT
REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 8/24/2017 2:14:07PM

Ref. Peak Energy : 0.00 Reference Date :
Peak Ratio : 0.00 Uncertainty : 0.00
Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000055575.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	46.59	1.35E+02	86.80	4.47E+01	1.09E+01	9.00E+01	8.75E+01
m	2	64.00	2.88E+02	142.21	4.12E+01	5.67E+00	2.47E+02	1.42E+02
m	3	76.53	1.12E+03	155.42			1.12E+03	1.55E+02
M	4	87.21	1.71E+02	88.40			1.71E+02	8.84E+01
m	5	93.19	2.88E+02	90.06	7.98E+01	7.31E+00	2.09E+02	9.04E+01
	6	129.08	7.90E+01	89.33			7.90E+01	8.93E+01
	7	186.25	1.72E+02	88.07	3.06E+01	5.82E+00	1.42E+02	8.83E+01
	8	210.04	1.22E+02	72.66			1.22E+02	7.27E+01
M	9	238.94	8.89E+02	84.18	1.40E+01	2.71E+00	8.75E+02	8.42E+01
m	10	242.30	1.44E+02	80.79			1.44E+02	8.08E+01
	11	278.74	8.23E+01	73.85			8.23E+01	7.38E+01
	12	295.42	1.70E+02	67.66			1.70E+02	6.77E+01
	13	300.82	5.96E+01	47.52			5.96E+01	4.75E+01
	14	339.05	1.89E+02	58.88			1.89E+02	5.89E+01
	15	352.36	2.64E+02	82.78	6.53E+00	4.43E+00	2.58E+02	8.29E+01
	16	499.85	4.67E+01	39.85			4.67E+01	3.98E+01
	17	510.90	1.70E+02	51.38	5.21E+01	4.74E+00	1.18E+02	5.16E+01
	18	531.84	2.06E+01	24.90			2.06E+01	2.49E+01
	19	583.81	2.30E+02	56.21			2.30E+02	5.62E+01
	20	609.56	2.78E+02	53.32	3.25E+00	2.97E+00	2.74E+02	5.34E+01
	21	729.89	8.32E+01	52.57			8.32E+01	5.26E+01
	22	757.26	4.49E+01	43.47			4.49E+01	4.35E+01
	23	768.22	2.67E+01	30.04			2.67E+01	3.00E+01
	24	911.60	1.40E+02	41.41	2.85E+00	2.76E+00	1.38E+02	4.15E+01
	25	969.83	7.40E+01	42.35			7.40E+01	4.23E+01
	26	999.66	1.83E+01	18.95			1.83E+01	1.89E+01
M	27	1114.59	1.68E+01	23.24			1.68E+01	2.32E+01
m	28	1120.78	6.45E+01	29.41			6.45E+01	2.94E+01
	29	1245.31	1.77E+01	21.31			1.77E+01	2.13E+01
	30	1284.61	1.70E+01	17.69			1.70E+01	1.77E+01
	31	1377.70	2.74E+01	19.24			2.74E+01	1.92E+01
	32	1430.36	9.00E+00	10.63			9.00E+00	1.06E+01
	33	1437.96	1.00E+01	10.82			1.00E+01	1.08E+01
M	34	1456.16	1.25E+01	2.35			1.25E+01	2.35E+00
m	35	1461.09	7.33E+02	55.39	1.00E+00	1.77E+00	7.32E+02	5.54E+01
	36	1530.97	9.54E+00	9.17			9.54E+00	9.17E+00
M	37	1625.52	6.41E+00	3.87			6.41E+00	3.87E+00
m	38	1629.46	1.11E+01	11.49			1.11E+01	1.15E+01
	39	1660.92	7.50E+00	8.28			7.50E+00	8.28E+00
	40	1685.39	9.05E+00	7.75			9.05E+00	7.75E+00
	41	1728.98	1.69E+01	10.77			1.69E+01	1.08E+01

Analysis Report for 1707091-18

HTC-A08-BKGD02-3036-01

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
42	1765.02	4.98E+01	21.56			4.98E+01	2.16E+01
43	1847.22	1.01E+01	8.00			1.01E+01	8.00E+00
44	1983.34	7.00E+00	5.29			7.00E+00	5.29E+00
45	2102.47	1.10E+01	10.68			1.10E+01	1.07E+01
46	2205.01	1.07E+01	11.66			1.07E+01	1.17E+01
47	2614.98	6.70E+01	18.38	1.86E+00	1.12E+00	6.51E+01	1.84E+01

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

NUCLIDE IDENTIFICATION REPORT

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

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.987	1460.81	*	10.67	2.30E+01	2.63E+00
ZN-65	0.869	1115.52	*	50.75	1.18E-01	1.64E-01
CD-109	0.897	88.03	*	3.72	2.19E+00	1.15E+00
SN-126	0.979	87.57	*	37.00	1.89E-01	9.91E-02
EU-155	0.316	86.50	*	30.90	2.36E-01	1.23E-01
		105.30		20.70		
HG-203	0.945	279.19	*	77.30	3.76E-01	3.39E-01
TL-208	0.850	583.14	*	30.22	1.16E+00	3.03E-01
		860.37		4.48		
		2614.66	*	35.85	9.02E-01	2.69E-01
PB-210	0.999	46.50	*	4.25	1.37E+00	1.34E+00
PB-212	0.980	238.63	*	44.60	1.35E+00	1.72E-01
		300.09	*	3.41	1.47E+00	1.18E+00
BI-214	0.973	609.31	*	46.30	9.35E-01	2.02E-01
		1120.29	*	15.10	1.15E+00	5.35E-01
		1764.49	*	15.80	1.22E+00	5.38E-01
		2204.22	*	4.98	9.66E-01	1.06E+00
PB-214	0.978	295.21	*	19.19	7.32E-01	2.98E-01
		351.92	*	37.19	6.69E-01	2.23E-01
RA-226	1.000	186.21	*	3.28	2.45E+00	4.75E+00
AC-228	0.938	338.32	*	11.40	1.55E+00	5.00E-01
		911.07	*	27.70	1.12E+00	3.50E-01
		969.11	*	16.60	1.06E+00	6.14E-01
TH-234	0.923	63.29	*	3.80	2.93E+00	1.71E+00
NP-237	0.924	86.50	*	12.60	5.56E-01	2.91E-01

Analysis Report for 1707091-18

HTC-A08-BKGD02-3036-01

* = 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 : 8/24/2017 2:14:07PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
m	3	76.53	3.11149E-01	6.94		
m	5	93.19	5.79422E-02	21.66	D-Esc	
	6	129.08	2.19454E-02	56.54		
	8	210.04	3.37997E-02	29.86	Tol.	CM-243
m	10	242.30	4.00799E-02	27.99		
	16	499.85	1.29781E-02	42.65		
	17	510.90	3.27390E-02	21.89		
	18	531.84	5.72823E-03	60.37	Tol.	ND-147
	21	729.89	2.31004E-02	31.61		
	22	757.26	1.24598E-02	48.46	Tol.	ZR-95
	23	768.22	7.41944E-03	56.23		
	26	999.66	5.07979E-03	51.80	Sum	
	29	1245.31	4.92929E-03	60.04		
	30	1284.61	4.73264E-03	51.92		
	31	1377.70	7.61525E-03	35.09		
	32	1430.36	2.50000E-03	59.06		
	33	1437.96	2.77778E-03	54.08		
M	34	1456.16	3.46520E-03	9.40		
	36	1530.97	2.64957E-03	48.04		
M	37	1625.52	1.77987E-03	30.22		
m	38	1629.46	3.07629E-03	51.87		
	39	1660.92	2.08333E-03	55.18		
	40	1685.39	2.51263E-03	42.82		
	41	1728.98	4.68254E-03	31.95		
	43	1847.22	2.81250E-03	39.51		
	44	1983.34	1.94444E-03	37.80		
	45	2102.47	3.05556E-03	48.53		

Analysis Report for 1707091-18

HTC-A08-BKGD02-3036-01

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	0.98	1460.81	*	10.67	2.30E+01	2.63E+00
ZN-65	0.86	1115.52	*	50.75	1.18E-01	1.64E-01
CD-109	0.89	88.03	*	3.72	2.19E+00	1.15E+00
SN-126	0.97	87.57	*	37.00	1.89E-01	9.91E-02
EU-155	0.31	86.50	*	30.90	2.36E-01	1.23E-01
		105.30		20.70		
HG-203	0.94	279.19	*	77.30	3.76E-01	3.39E-01
TL-208	0.85	583.14	*	30.22	1.16E+00	3.03E-01
		860.37		4.48		
		2614.66	*	35.85	9.02E-01	2.69E-01
PB-210	0.99	46.50	*	4.25	1.37E+00	1.34E+00
PB-212	0.98	238.63	*	44.60	1.35E+00	1.72E-01
		300.09	*	3.41	1.47E+00	1.18E+00
BI-214	0.97	609.31	*	46.30	9.35E-01	2.02E-01
		1120.29	*	15.10	1.15E+00	5.35E-01
		1764.49	*	15.80	1.22E+00	5.38E-01
		2204.22	*	4.98	9.66E-01	1.06E+00
PB-214	0.97	295.21	*	19.19	7.32E-01	2.98E-01
		351.92	*	37.19	6.69E-01	2.23E-01
RA-226	1.00	186.21	*	3.28	2.45E+00	4.75E+00
AC-228	0.93	338.32	*	11.40	1.55E+00	5.00E-01
		911.07	*	27.70	1.12E+00	3.50E-01
		969.11	*	16.60	1.06E+00	6.14E-01
TH-234	0.92	63.29	*	3.80	2.93E+00	1.71E+00
NP-237	0.92	86.50	*	12.60	5.56E-01	2.91E-01

Analysis Report for 1707091-18

HTC-A08-BKGD02-3036-01

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

INTERFERENCE CORRECTED REPORT

	Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
	K-40	0.987	2.30E+01	2.63E+00	
	ZN-65	0.869	1.18E-01	1.64E-01	
?	CD-109	0.897	2.19E+00	1.15E+00	
?	SN-126	0.979	1.89E-01	9.91E-02	
?	EU-155	0.316	2.36E-01	1.23E-01	
	HG-203	0.945	3.76E-01	3.39E-01	
	TL-208	0.850	1.02E+00	2.01E-01	
	PB-210	0.999	1.37E+00	1.34E+00	
	PB-212	0.980	1.35E+00	1.70E-01	
	BI-214	0.973	9.91E-01	1.76E-01	
	PB-214	0.978	6.92E-01	1.79E-01	
	RA-226	1.000	2.45E+00	4.75E+00	
	AC-228	0.938	1.23E+00	2.60E-01	
	TH-234	0.923	2.93E+00	1.71E+00	
?	NP-237	0.924	5.56E-01	2.91E-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 1707091-18

HTC-A08-BKGD02-3036-01

UNIDENTIFIED PEAKS

Peak Locate Performed on : 8/24/2017 2:14:07PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
m	3	76.53	3.11149E-01	6.94		
m	5	93.19	5.79422E-02	21.66	D-Esc	
	6	129.08	2.19454E-02	56.54		
	8	210.04	3.37997E-02	29.86	Tol.	CM-243
m	10	242.30	4.00799E-02	27.99		
	16	499.85	1.29781E-02	42.65		
	17	510.90	3.27390E-02	21.89		
	18	531.84	5.72823E-03	60.37	Tol.	ND-147
	21	729.89	2.31004E-02	31.61		
	22	757.26	1.24598E-02	48.46	Tol.	ZR-95
	23	768.22	7.41944E-03	56.23		
	26	999.66	5.07979E-03	51.80	Sum	
	29	1245.31	4.92929E-03	60.04		
	30	1284.61	4.73264E-03	51.92		
	31	1377.70	7.61525E-03	35.09		
	32	1430.36	2.50000E-03	59.06		
	33	1437.96	2.77778E-03	54.08		
M	34	1456.16	3.46520E-03	9.40		
	36	1530.97	2.64957E-03	48.04		
M	37	1625.52	1.77987E-03	30.22		
m	38	1629.46	3.07629E-03	51.87		
	39	1660.92	2.08333E-03	55.18		
	40	1685.39	2.51263E-03	42.82		
	41	1728.98	4.68254E-03	31.95		
	43	1847.22	2.81250E-03	39.51		
	44	1983.34	1.94444E-03	37.80		
	45	2102.47	3.05556E-03	48.53		

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

Analysis Report for 1707091-18

HTC-A08-BKGD02-3036-01

NUCLIDE MDA REPORT

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

		Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+		BE-7	477.59		10.42	5.64E-01	2.21E+00	2.21E+00
+		NA-22	1274.54		99.94	-4.92E-02	1.00E-01	1.00E-01
+	@	NA-24	1368.53		99.99	1.00E+26	1.00E+26	1.00E+26
	@		2754.09		99.86	0.00E+00		1.00E+26
+		AL-26	1808.65		99.76	2.68E-02	6.60E-02	6.60E-02
+		K-40	1460.81	*	10.67	2.30E+01	8.79E-01	8.79E-01
+	@	AR-41	1293.64		99.16	1.00E+26	1.00E+26	1.00E+26
+		TI-44	67.88		94.40	-3.23E-02	5.76E-02	5.76E-02
			78.34		96.00	1.74E-01		7.38E-02
+		SC-46	889.25		99.98	2.67E-02	1.86E-01	1.86E-01
			1120.51		99.99	2.49E-01		3.11E-01
+		V-48	983.52		99.98	-8.24E-01	6.43E+00	6.43E+00
			1312.10		97.50	-2.49E-01		7.25E+00
+		CR-51	320.08		9.83	7.94E-01	8.06E+00	8.06E+00
+		MN-54	834.83		99.97	-1.45E-02	9.90E-02	9.90E-02
+		CO-56	846.75		99.96	1.85E-02	2.01E-01	2.01E-01
			1037.75		14.03	-6.14E-01		1.47E+00
			1238.25		67.00	2.39E-01		4.67E-01
			1771.40		15.51	1.53E-02		1.19E+00
			2598.48		16.90	1.48E-01		8.56E-01
+		CO-57	122.06		85.51	-1.02E-02	6.33E-02	6.33E-02
			136.48		10.60	-4.15E-02		5.30E-01
+		CO-58	810.76		99.40	5.97E-02	2.14E-01	2.14E-01
+		FE-59	1099.22		56.50	1.95E-03	8.61E-01	8.61E-01
			1291.56		43.20	2.44E-01		1.13E+00
+		CO-60	1173.22		100.00	2.88E-02	9.39E-02	1.20E-01
			1332.49		100.00	-2.04E-02		9.39E-02
+		ZN-65	1115.52	*	50.75	1.18E-01	7.91E-01	7.91E-01
+		GA-67	93.31		35.70	4.35E+08	3.26E+08	3.26E+08
			208.95		2.24	3.99E+09		6.05E+09
			300.22		16.00	-1.53E+09		9.06E+08
+		SE-75	121.11		16.70	-1.15E-01	1.33E-01	4.49E-01
			136.00		59.20	4.09E-02		1.33E-01
			264.65		59.80	-5.26E-02		1.74E-01
			279.53		25.20	2.84E-01		4.50E-01
			400.65		11.40	-2.22E-01		9.93E-01
+		RB-82	776.52		13.00	-4.55E+00	1.02E+01	1.02E+01
+		RB-83	520.41		46.00	-1.53E-02	3.16E-01	3.16E-01
			529.64		30.30	-8.74E-02		4.77E-01
			552.65		16.40	1.92E-01		9.73E-01

Analysis Report for 1707091-18

HTC-A08-BKGD02-3036-01

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	KR-85	513.99		0.43	1.52E-01	2.27E+01	2.27E+01
+	SR-85	513.99		99.27	1.92E-03	2.87E-01	2.87E-01
+	Y-88	898.02		93.40	4.71E-02	1.35E-01	1.68E-01
		1836.01		99.38	2.29E-02		1.35E-01
+	MO-93	263.06		56.72	-6.74E-03	7.00E-02	1.02E-01
		684.67		99.68	2.44E-02		8.20E-02
		1477.11		99.08	8.33E-03		7.00E-02
+	NB-93M	16.57		9.43	3.60E+01	6.53E+01	6.53E+01
+	NB-94	702.63		100.00	8.97E-03	7.73E-02	8.36E-02
		871.10		100.00	2.17E-03		7.73E-02
+	NB-95	765.79		99.81	2.53E-01	6.70E-01	6.70E-01
+	NB-95M	235.69		25.00	1.49E+08	1.02E+08	1.02E+08
+	ZR-95	724.18		43.70	4.46E-02	4.92E-01	6.02E-01
		756.72		55.30	2.79E-01		4.92E-01
+	MO-99	181.06		6.20	3.75E+08	6.52E+10	8.35E+10
		739.58		12.80	6.26E+08		6.52E+10
		778.00		4.50	-8.93E+10		2.09E+11
+	RU-103	497.08		89.00	-1.35E-01	4.14E-01	4.14E-01
+	RU-106	621.84		9.80	3.39E-01	9.05E-01	9.05E-01
+	AG-108M	433.93		89.90	-2.47E-03	6.97E-02	6.97E-02
		614.37		90.40	-3.35E-03		9.96E-02
		722.95		90.50	2.00E-02		9.34E-02
+	CD-109	88.03	*	3.72	2.19E+00	3.55E+00	3.55E+00
+	AG-110M	657.75		93.14	-1.48E-02	1.05E-01	1.05E-01
		677.61		10.53	-8.18E-02		9.38E-01
		706.67		16.46	7.50E-02		6.65E-01
		763.93		21.98	-5.60E-01		4.71E-01
		884.67		71.63	-8.35E-03		1.53E-01
		1384.27		23.94	-9.60E-02		4.54E-01
+	CD-113M	263.70		0.02	-2.12E+01	2.54E+02	2.54E+02
+	SN-113	255.12		1.93	2.15E+00	1.84E-01	5.44E+00
		391.69		64.90	2.71E-02		1.84E-01
+	TE123M	159.00		84.10	-5.76E-02	9.62E-02	9.62E-02
+	SB-124	602.71		97.87	2.21E-02	2.36E-01	2.36E-01
		645.85		7.26	1.19E+00		3.21E+00
		722.78		11.10	5.21E-01		2.43E+00
		1691.02		49.00	0.00E+00		4.09E-01
+	I-125	35.49		6.49	6.67E-02	5.65E+00	5.65E+00
+	SB-125	176.33		6.89	-2.28E-01	2.30E-01	7.03E-01
		427.89		29.33	1.28E-02		2.30E-01
		463.38		10.35	6.08E-01		7.86E-01
		600.56		17.80	5.63E-02		4.30E-01
		635.90		11.32	1.48E-01		6.72E-01
+	SB-126	414.70		83.30	-8.39E+00	2.04E+01	2.04E+01
		666.33		99.60	2.76E+00		2.21E+01
		695.00		99.60	-1.81E+00		2.43E+01
		720.50		53.80	1.38E+01		4.38E+01
+	SN-126	87.57	*	37.00	1.89E-01	3.07E-01	3.07E-01

Analysis Report for 1707091-18

HTC-A08-BKGD02-3036-01

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	SB-127	473.00	25.00	8.30E+06	1.79E+07	2.04E+07
		685.20	35.70	5.32E+06		1.79E+07
		783.80	14.70	1.43E+07		4.59E+07
+	I-129	29.78	57.00	1.88E-01	3.62E-01	3.62E-01
		33.60	13.20	-9.85E-03		1.02E+00
		39.58	7.52	5.03E-01		1.20E+00
+	I-131	284.30	6.05	3.18E+02	4.61E+02	5.74E+03
		364.48	81.20	3.20E+01		4.61E+02
		636.97	7.26	3.22E+03		6.19E+03
		722.89	1.80	6.08E+03		2.84E+04
+	TE-132	49.72	13.10	-2.31E+07	1.46E+08	1.04E+09
		228.16	88.00	2.65E+07		1.46E+08
+	BA-133	81.00	33.00	-5.64E-01	1.45E-01	1.61E-01
		302.84	17.80	2.24E-01		3.67E-01
		356.01	60.00	-5.37E-03		1.45E-01
+	@ I-133	529.87	86.30	1.00E+26	1.00E+26	1.00E+26
+	XE-133	81.00	38.00	-3.04E+05	8.70E+04	8.70E+04
+	CS-134	563.23	8.38	3.30E-01	8.68E-02	9.48E-01
		569.32	15.43	1.62E-01		5.12E-01
		604.70	97.60	-4.41E-03		8.68E-02
		795.84	85.40	8.11E-02		1.23E-01
		801.93	8.73	1.85E-01		1.03E+00
+	CS-135	268.24	16.00	1.99E-01	3.94E-01	3.94E-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	3.17E+01	1.58E+01	1.25E+02
		163.89	4.61	5.36E+01		2.07E+02
		176.55	13.56	-2.21E+01		6.82E+01
		273.65	12.66	1.33E+01		1.01E+02
		340.57	48.50	5.72E+01		3.47E+01
		818.50	99.70	-2.32E+00		1.58E+01
		1048.07	79.60	-1.42E+00		2.50E+01
		1235.34	19.70	2.27E+01		1.30E+02
+	CS-137	661.65	85.12	-1.05E-02	9.11E-02	9.11E-02
+	LA-138	788.74	34.00	-8.05E-02	1.04E-01	2.34E-01
		1435.80	66.00	-1.82E-02		1.04E-01
+	CE-139	165.85	80.35	-1.78E-02	9.30E-02	9.30E-02
+	BA-140	162.64	6.70	1.25E+02	6.17E+01	1.69E+02
		304.84	4.50	5.42E-02		3.11E+02
		423.70	3.20	1.05E+02		4.92E+02
		437.55	2.00	2.13E+02		7.53E+02
		537.32	25.00	1.65E+01		6.17E+01
+	LA-140	328.77	20.50	-4.24E+00	2.21E+01	7.62E+01
		487.03	45.50	1.41E+01		3.31E+01
		815.85	23.50	-1.26E+01		7.74E+01
		1596.49	95.49	2.41E+00		2.21E+01
+	CE-141	145.44	48.40	5.93E-01	8.32E-01	8.32E-01
+	@ CE-143	57.36	11.80	1.00E+26	1.00E+26	1.00E+26

Analysis Report for 1707091-18

HTC-A08-BKGD02-3036-01

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
@	CE-143	293.26		42.00	1.00E+26	1.00E+26	1.00E+26
@		664.55		5.20	1.00E+26		1.00E+26
+	CE-144	133.54		10.80	4.59E-02	5.29E-01	5.29E-01
+	PM-144	476.78		42.00	-2.44E-02	8.61E-02	1.77E-01
		618.01		98.60	-3.36E-02		8.61E-02
		696.49		99.49	6.25E-02		1.06E-01
+	PM-145	36.85		21.70	-2.84E-01	2.60E-01	4.81E-01
		37.36		39.70	-1.78E-02		2.60E-01
		42.30		15.10	5.57E-03		5.04E-01
		72.40		2.31	-4.13E+00		2.79E+00
+	PM-146	453.90		39.94	-1.14E-01	1.65E-01	1.65E-01
		735.90		14.01	-2.18E-01		5.05E-01
		747.13		13.10	-1.79E-02		6.02E-01
+	ND-147	91.11		28.90	-7.79E+01	1.14E+02	1.14E+02
		531.02		13.10	-5.97E+01		2.84E+02
+	PM-149	285.90		3.10	-3.63E+12	1.04E+14	1.04E+14
+	EU-152	121.78		20.50	-3.32E-02	2.07E-01	2.07E-01
		244.69		5.40	1.11E-02		1.26E+00
		344.27		19.13	5.76E-04		3.45E-01
		778.89		9.20	-3.00E-01		9.15E-01
		964.01		10.40	-2.72E-02		9.63E-01
		1085.78		7.22	2.95E-01		1.35E+00
		1112.02		9.60	6.43E-01		1.15E+00
		1407.95		14.94	2.31E-01		5.85E-01
+	GD-153	97.43		31.30	5.70E-02	1.89E-01	1.89E-01
		103.18		22.20	-4.52E-02		2.63E-01
+	EU-154	123.07		40.50	1.70E-02	1.07E-01	1.07E-01
		723.30		19.70	9.38E-02		4.38E-01
		873.19		11.50	-6.39E-02		6.62E-01
		996.32		10.30	-2.62E-02		8.05E-01
		1004.76		17.90	2.30E-01		4.91E-01
		1274.45		35.50	-1.32E-01		2.68E-01
+	EU-155	86.50	*	30.90	2.36E-01	2.25E-01	3.82E-01
		105.30		20.70	1.24E-01		2.25E-01
+	EU-156	811.77		10.40	-2.19E+01	7.27E+01	7.27E+01
		1153.47		7.20	5.79E+00		1.45E+02
		1230.71		8.90	1.71E+01		1.30E+02
+	HO-166M	184.41		72.60	7.28E-02	7.87E-02	7.87E-02
		280.45		29.60	6.07E-02		2.09E-01
		410.94		11.10	1.40E-01		5.68E-01
		711.69		54.10	-6.54E-03		1.47E-01
+	TM-171	66.72		0.14	-7.93E+00	4.49E+01	4.49E+01
+	HF-172	67.35		5.31	-6.36E-01	4.24E-01	1.13E+00
		125.81		11.30	-4.19E-02		4.24E-01
+	LU-172	181.53		20.60	6.89E+02	5.45E+03	7.74E+03
		900.72		29.81	-9.09E+02		9.50E+03
		1093.66		62.50	2.41E+03		5.45E+03
+	LU-173	100.72		5.24	-1.60E-01	3.45E-01	9.62E-01
		272.11		21.20	1.60E-01		3.45E-01

Analysis Report for 1707091-18

HTC-A08-BKGD02-3036-01

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	HF-175	343.40		84.00	3.51E-04	2.10E-01	2.10E-01
+	LU-176	88.34		13.30	1.79E-01	5.53E-02	4.29E-01
		201.83		86.00	-1.14E-02		5.53E-02
		306.78		94.00	3.63E-03		6.11E-02
+	HF-181	133.02		41.70	3.54E-02	3.85E-01	5.64E-01
		345.85		17.20	3.31E-03		1.90E+00
		482.03		82.80	1.48E-01		3.85E-01
+	TA-182	67.75		41.20	-1.36E-01	2.43E-01	2.43E-01
		1121.30		34.90	8.84E-01		7.29E-01
		1189.05		16.23	4.82E-01		1.37E+00
		1221.41		26.98	5.77E-01		8.53E-01
		1231.02		11.44	2.43E-01		1.85E+00
+	IR-192	308.46		29.68	1.48E-02	3.49E-01	5.01E-01
		468.07		48.10	-3.74E-01		3.49E-01
+	HG-203	279.19	*	77.30	3.76E-01	5.50E-01	5.50E-01
+	TL-204	374.74		94.11	3.69E-02	7.28E-02	7.28E-02
		899.15		99.16	1.92E-02		8.74E-02
		911.74		91.10	4.01E-01		1.75E-01
+	BI-207	569.67		97.72	2.65E-02	7.38E-02	7.38E-02
		1063.62		74.90	-5.63E-02		1.25E-01
+	TL-208	583.14	*	30.22	1.16E+00	2.40E-01	4.05E-01
		860.37		4.48	9.16E-01		2.01E+00
		2614.66	*	35.85	9.02E-01		2.40E-01
+	BI-210M	262.00		45.00	8.93E-03	1.27E-01	1.27E-01
		300.00		23.00	-5.02E-01		2.97E-01
+	PB-210	46.50	*	4.25	1.37E+00	2.18E+00	2.18E+00
+	PB-211	404.84		2.90	-1.43E+00	2.10E+00	2.10E+00
		831.96		2.90	-3.57E-01		2.70E+00
+	BI-212	727.17		11.80	7.12E-01	8.41E-01	8.41E-01
		1620.62		2.75	3.97E-01		2.40E+00
+	PB-212	238.63	*	44.60	1.35E+00	2.37E-01	2.37E-01
		300.09	*	3.41	1.47E+00		1.88E+00
+	BI-214	609.31	*	46.30	9.35E-01	2.44E-01	2.44E-01
		1120.29	*	15.10	1.15E+00		2.01E+00
		1764.49	*	15.80	1.22E+00		7.25E-01
		2204.22	*	4.98	9.66E-01		1.68E+00
+	PB-214	295.21	*	19.19	7.32E-01	3.33E-01	4.53E-01
		351.92	*	37.19	6.69E-01		3.33E-01
+	RN-219	401.80		6.50	-1.48E-01	9.73E-01	9.73E-01
+	RA-223	323.87		3.88	-1.82E+00	1.61E+00	1.61E+00
+	RA-224	240.98		3.95	1.64E+01	2.96E+00	2.96E+00
+	RA-225	40.00		31.00	1.35E+01	3.23E+01	3.23E+01
+	RA-226	186.21	*	3.28	2.45E+00	2.47E+00	2.47E+00
+	TH-227	50.10		8.40	-1.65E-02	7.43E-01	7.43E-01
		236.00		11.50	1.22E+00		8.39E-01
		256.20		6.30	7.10E-03		9.00E-01
+	AC-228	338.32	*	11.40	1.55E+00	4.81E-01	7.22E-01
		911.07	*	27.70	1.12E+00		4.81E-01

Analysis Report for 1707091-18

HTC-A08-BKGD02-3036-01

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	AC-228	969.11	*	16.60	1.06E+00	4.81E-01	9.53E-01
+	TH-230	48.44		16.90	7.59E-02	4.13E-01	4.13E-01
		62.85		4.60	1.77E+00		1.36E+00
		67.67		0.37	-8.22E+00		1.47E+01
+	PA-231	283.67		1.60	-2.60E-02	2.79E+00	3.60E+00
		302.67		2.30	1.70E+00		2.79E+00
+	TH-231	25.64		14.70	1.06E+00	8.17E-01	2.66E+00
		84.21		6.40	-2.06E-01		8.17E-01
+	PA-233	311.98		38.60	-4.47E-01	2.00E+00	2.00E+00
+	PA-234	131.20		20.40	9.07E-02	2.30E-01	2.30E-01
		733.99		8.80	7.17E-02		8.52E-01
		946.00		12.00	-7.15E-02		7.36E-01
+	PA-234M	1001.03		0.92	-3.43E-01	1.01E+01	1.01E+01
+	TH-234	63.29	*	3.80	2.93E+00	5.20E+00	5.20E+00
+	U-235	143.76		10.50	-8.78E-02	4.26E-01	4.26E-01
		163.35		4.70	2.57E-01		9.89E-01
		205.31		4.70	2.47E-01		1.27E+00
+	NP-237	86.50	*	12.60	5.56E-01	9.02E-01	9.02E-01
+	NP-239	106.10		22.70	8.96E+11	1.62E+12	1.62E+12
		228.18		10.70	8.28E+11		4.58E+12
		277.60		14.10	1.53E+12		3.73E+12
+	AM-241	59.54		35.90	-7.17E-02	1.60E-01	1.60E-01
+	AM-243	74.67		66.00	1.61E-01	1.14E-01	1.14E-01
+	CM-243	209.75		3.29	1.86E+00	4.60E-01	1.96E+00
		228.14		10.60	1.03E-01		5.67E-01
		277.60		14.00	1.88E-01		4.60E-01

+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction
? = CAUTION: MDA value is inconsistent with Currie MDA at 95% confidence level

NUCLIDE MDA REPORT

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

Analysis Report for 1707091-18

HTC-A08-BKGD02-3036-01

	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	2.21E+00	2.21E+00	5.64E-01	1.04E+00
	NA-22	1274.54		99.94	1.00E-01	1.00E-01	-4.92E-02	4.58E-02
@	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	6.60E-02	6.60E-02	2.68E-02	2.76E-02
+	K-40	1460.81	*	10.67	8.79E-01	8.79E-01	2.30E+01	3.97E-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	5.76E-02	5.76E-02	-3.23E-02	2.81E-02
		78.34		96.00	7.38E-02		1.74E-01	3.63E-02
	SC-46	889.25		99.98	1.86E-01	1.86E-01	2.67E-02	8.63E-02
		1120.51		99.99	3.11E-01		2.49E-01	1.47E-01
	V-48	983.52		99.98	6.43E+00	6.43E+00	-8.24E-01	2.96E+00
		1312.10		97.50	7.25E+00		-2.49E-01	3.28E+00
	CR-51	320.08		9.83	8.06E+00	8.06E+00	7.94E-01	3.88E+00
	MN-54	834.83		99.97	9.90E-02	9.90E-02	-1.45E-02	4.60E-02
	CO-56	846.75		99.96	2.01E-01	2.01E-01	1.85E-02	9.36E-02
		1037.75		14.03	1.47E+00		-6.14E-01	6.77E-01
		1238.25		67.00	4.67E-01		2.39E-01	2.19E-01
		1771.40		15.51	1.19E+00		1.53E-02	5.12E-01
		2598.48		16.90	8.56E-01		1.48E-01	3.32E-01
	CO-57	122.06		85.51	6.33E-02	6.33E-02	-1.02E-02	3.08E-02
		136.48		10.60	5.30E-01		-4.15E-02	2.57E-01
	CO-58	810.76		99.40	2.14E-01	2.14E-01	5.97E-02	9.93E-02
	FE-59	1099.22		56.50	8.61E-01	8.61E-01	1.95E-03	4.00E-01
		1291.56		43.20	1.13E+00		2.44E-01	5.22E-01
	CO-60	1173.22		100.00	1.20E-01	9.39E-02	2.88E-02	5.62E-02
		1332.49		100.00	9.39E-02		-2.04E-02	4.26E-02
+	ZN-65	1115.52	*	50.75	7.91E-01	7.91E-01	1.18E-01	3.86E-01
	GA-67	93.31		35.70	3.26E+08	3.26E+08	4.35E+08	1.60E+08
		208.95		2.24	6.05E+09		3.99E+09	2.95E+09
		300.22		16.00	9.06E+08		-1.53E+09	4.38E+08
	SE-75	121.11		16.70	4.49E-01	1.33E-01	-1.15E-01	2.18E-01
		136.00		59.20	1.33E-01		4.09E-02	6.48E-02
		264.65		59.80	1.74E-01		-5.26E-02	8.39E-02
		279.53		25.20	4.50E-01		2.84E-01	2.17E-01
		400.65		11.40	9.93E-01		-2.22E-01	4.74E-01
	RB-82	776.52		13.00	1.02E+01	1.02E+01	-4.55E+00	4.77E+00
	RB-83	520.41		46.00	3.16E-01	3.16E-01	-1.53E-02	1.49E-01
		529.64		30.30	4.77E-01		-8.74E-02	2.24E-01
		552.65		16.40	9.73E-01		1.92E-01	4.60E-01
	KR-85	513.99		0.43	2.27E+01	2.27E+01	1.52E-01	1.09E+01
	SR-85	513.99		99.27	2.87E-01	2.87E-01	1.92E-03	1.38E-01
	Y-88	898.02		93.40	1.68E-01	1.35E-01	4.71E-02	7.80E-02
		1836.01		99.38	1.35E-01		2.29E-02	5.70E-02
	MO-93	263.06		56.72	1.02E-01	7.00E-02	-6.74E-03	4.94E-02
		684.67		99.68	8.20E-02		2.44E-02	3.86E-02
		1477.11		99.08	7.00E-02		8.33E-03	3.03E-02
	NB-93M	16.57		9.43	6.53E+01	6.53E+01	3.60E+01	3.18E+01
	NB-94	702.63		100.00	8.36E-02	7.73E-02	8.97E-03	3.94E-02
		871.10		100.00	7.73E-02		2.17E-03	3.57E-02
	NB-95	765.79		99.81	6.70E-01	6.70E-01	2.53E-01	3.16E-01

Analysis Report for 1707091-18

HTC-A08-BKGD02-3036-01

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	NB-95M	235.69		25.00	1.02E+08	1.02E+08	1.49E+08	5.03E+07
	ZR-95	724.18		43.70	6.02E-01	4.92E-01	4.46E-02	2.84E-01
		756.72		55.30	4.92E-01		2.79E-01	2.32E-01
	MO-99	181.06		6.20	8.35E+10	6.52E+10	3.75E+08	4.04E+10
		739.58		12.80	6.52E+10		6.26E+08	3.03E+10
		778.00		4.50	2.09E+11		-8.93E+10	9.80E+10
	RU-103	497.08		89.00	4.14E-01	4.14E-01	-1.35E-01	1.95E-01
	RU-106	621.84		9.80	9.05E-01	9.05E-01	3.39E-01	4.25E-01
	AG-108M	433.93		89.90	6.97E-02	6.97E-02	-2.47E-03	3.31E-02
		614.37		90.40	9.96E-02		-3.35E-03	4.74E-02
		722.95		90.50	9.34E-02		2.00E-02	4.39E-02
+	CD-109	88.03	*	3.72	3.55E+00	3.55E+00	2.19E+00	1.76E+00
	AG-110M	657.75		93.14	1.05E-01	1.05E-01	-1.48E-02	4.94E-02
		677.61		10.53	9.38E-01		-8.18E-02	4.40E-01
		706.67		16.46	6.65E-01		7.50E-02	3.13E-01
		763.93		21.98	4.71E-01		-5.60E-01	2.20E-01
		884.67		71.63	1.53E-01		-8.35E-03	7.08E-02
		1384.27		23.94	4.54E-01		-9.60E-02	2.03E-01
	CD-113M	263.70		0.02	2.54E+02	2.54E+02	-2.12E+01	1.22E+02
	SN-113	255.12		1.93	5.44E+00	1.84E-01	2.15E+00	2.63E+00
		391.69		64.90	1.84E-01		2.71E-02	8.77E-02
	TE123M	159.00		84.10	9.62E-02	9.62E-02	-5.76E-02	4.66E-02
	SB-124	602.71		97.87	2.36E-01	2.36E-01	2.21E-02	1.11E-01
		645.85		7.26	3.21E+00		1.19E+00	1.51E+00
		722.78		11.10	2.43E+00		5.21E-01	1.14E+00
		1691.02		49.00	4.09E-01		0.00E+00	1.71E-01
	I-125	35.49		6.49	5.65E+00	5.65E+00	6.67E-02	2.75E+00
	SB-125	176.33		6.89	7.03E-01	2.30E-01	-2.28E-01	3.40E-01
		427.89		29.33	2.30E-01		1.28E-02	1.09E-01
		463.38		10.35	7.86E-01		6.08E-01	3.76E-01
		600.56		17.80	4.30E-01		5.63E-02	2.02E-01
		635.90		11.32	6.72E-01		1.48E-01	3.15E-01
	SB-126	414.70		83.30	2.04E+01	2.04E+01	-8.39E+00	9.68E+00
		666.33		99.60	2.21E+01		2.76E+00	1.04E+01
		695.00		99.60	2.43E+01		-1.81E+00	1.15E+01
		720.50		53.80	4.38E+01		1.38E+01	2.06E+01
+	SN-126	87.57	*	37.00	3.07E-01	3.07E-01	1.89E-01	1.52E-01
	SB-127	473.00		25.00	2.04E+07	1.79E+07	8.30E+06	9.64E+06
		685.20		35.70	1.79E+07		5.32E+06	8.41E+06
		783.80		14.70	4.59E+07		1.43E+07	2.15E+07
	I-129	29.78		57.00	3.62E-01	3.62E-01	1.88E-01	1.76E-01
		33.60		13.20	1.02E+00		-9.85E-03	4.97E-01
		39.58		7.52	1.20E+00		5.03E-01	5.85E-01
	I-131	284.30		6.05	5.74E+03	4.61E+02	3.18E+02	2.76E+03
		364.48		81.20	4.61E+02		3.20E+01	2.20E+02
		636.97		7.26	6.19E+03		3.22E+03	2.91E+03
		722.89		1.80	2.84E+04		6.08E+03	1.34E+04
	TE-132	49.72		13.10	1.04E+09	1.46E+08	-2.31E+07	5.07E+08
		228.16		88.00	1.46E+08		2.65E+07	7.10E+07
	BA-133	81.00		33.00	1.61E-01	1.45E-01	-5.64E-01	7.90E-02
		302.84		17.80	3.67E-01		2.24E-01	1.77E-01
		356.01		60.00	1.45E-01		-5.37E-03	7.02E-02
	@ I-133	529.87		86.30	1.00E+26	1.00E+26	1.00E+26	1.00E+20

Analysis Report for 1707091-18

HTC-A08-BKGD02-3036-01

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
XE-133	81.00	38.00	8.70E+04	8.70E+04	-3.04E+05	4.26E+04
CS-134	563.23	8.38	9.48E-01	8.68E-02	3.30E-01	4.48E-01
	569.32	15.43	5.12E-01		1.62E-01	2.42E-01
	604.70	97.60	8.68E-02		-4.41E-03	4.10E-02
	795.84	85.40	1.23E-01		8.11E-02	5.78E-02
	801.93	8.73	1.03E+00		1.85E-01	4.79E-01
CS-135	268.24	16.00	3.94E-01	3.94E-01	1.99E-01	1.90E-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
@	1678.03	9.54	1.00E+26		1.00E+26	1.00E+20
CS-136	153.22	7.46	1.25E+02	1.58E+01	3.17E+01	6.06E+01
	163.89	4.61	2.07E+02		5.36E+01	1.00E+02
	176.55	13.56	6.82E+01		-2.21E+01	3.30E+01
	273.65	12.66	1.01E+02		1.33E+01	4.90E+01
	340.57	48.50	3.47E+01		5.72E+01	1.68E+01
	818.50	99.70	1.58E+01		-2.32E+00	7.34E+00
	1048.07	79.60	2.50E+01		-1.42E+00	1.16E+01
	1235.34	19.70	1.30E+02		2.27E+01	6.09E+01
CS-137	661.65	85.12	9.11E-02	9.11E-02	-1.05E-02	4.28E-02
LA-138	788.74	34.00	2.34E-01	1.04E-01	-8.05E-02	1.09E-01
	1435.80	66.00	1.04E-01		-1.82E-02	4.52E-02
CE-139	165.85	80.35	9.30E-02	9.30E-02	-1.78E-02	4.50E-02
BA-140	162.64	6.70	1.69E+02	6.17E+01	1.25E+02	8.21E+01
	304.84	4.50	3.11E+02		5.42E-02	1.49E+02
	423.70	3.20	4.92E+02		1.05E+02	2.34E+02
	437.55	2.00	7.53E+02		2.13E+02	3.58E+02
	537.32	25.00	6.17E+01		1.65E+01	2.90E+01
LA-140	328.77	20.50	7.62E+01	2.21E+01	-4.24E+00	3.67E+01
	487.03	45.50	3.31E+01		1.41E+01	1.57E+01
	815.85	23.50	7.74E+01		-1.26E+01	3.59E+01
	1596.49	95.49	2.21E+01		2.41E+00	9.82E+00
CE-141	145.44	48.40	8.32E-01	8.32E-01	5.93E-01	4.04E-01
@ CE-143	57.36	11.80	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	293.26	42.00	1.00E+26		1.00E+26	1.00E+20
@	664.55	5.20	1.00E+26		1.00E+26	1.00E+20
CE-144	133.54	10.80	5.29E-01	5.29E-01	4.59E-02	2.57E-01
PM-144	476.78	42.00	1.77E-01	8.61E-02	-2.44E-02	8.37E-02
	618.01	98.60	8.61E-02		-3.36E-02	4.04E-02
	696.49	99.49	1.06E-01		6.25E-02	5.00E-02
PM-145	36.85	21.70	4.81E-01	2.60E-01	-2.84E-01	2.34E-01
	37.36	39.70	2.60E-01		-1.78E-02	1.26E-01
	42.30	15.10	5.04E-01		5.57E-03	2.45E-01
	72.40	2.31	2.79E+00		-4.13E+00	1.37E+00
PM-146	453.90	39.94	1.65E-01	1.65E-01	-1.14E-01	7.82E-02
	735.90	14.01	5.05E-01		-2.18E-01	2.34E-01
	747.13	13.10	6.02E-01		-1.79E-02	2.81E-01
ND-147	91.11	28.90	1.14E+02	1.14E+02	-7.79E+01	5.57E+01
	531.02	13.10	2.84E+02		-5.97E+01	1.34E+02
PM-149	285.90	3.10	1.04E+14	1.04E+14	-3.63E+12	5.03E+13
EU-152	121.78	20.50	2.07E-01	2.07E-01	-3.32E-02	1.00E-01
	244.69	5.40	1.26E+00		1.11E-02	6.13E-01
	344.27	19.13	3.45E-01		5.76E-04	1.66E-01
	778.89	9.20	9.15E-01		-3.00E-01	4.28E-01

Analysis Report for 1707091-18

HTC-A08-BKGD02-3036-01

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	EU-152	964.01		10.40	9.63E-01	2.07E-01	-2.72E-02	4.50E-01
		1085.78		7.22	1.35E+00		2.95E-01	6.25E-01
		1112.02		9.60	1.15E+00		6.43E-01	5.36E-01
		1407.95		14.94	5.85E-01		2.31E-01	2.63E-01
	GD-153	97.43		31.30	1.89E-01	1.89E-01	5.70E-02	9.22E-02
		103.18		22.20	2.63E-01		-4.52E-02	1.28E-01
	EU-154	123.07		40.50	1.07E-01	1.07E-01	1.70E-02	5.22E-02
		723.30		19.70	4.38E-01		9.38E-02	2.06E-01
		873.19		11.50	6.62E-01		-6.39E-02	3.05E-01
		996.32		10.30	8.05E-01		-2.62E-02	3.69E-01
		1004.76		17.90	4.91E-01		2.30E-01	2.26E-01
		1274.45		35.50	2.68E-01		-1.32E-01	1.23E-01
+	EU-155	86.50	*	30.90	3.82E-01	2.25E-01	2.36E-01	1.89E-01
		105.30		20.70	2.25E-01		1.24E-01	1.10E-01
	EU-156	811.77		10.40	7.27E+01	7.27E+01	-2.19E+01	3.37E+01
		1153.47		7.20	1.45E+02		5.79E+00	6.72E+01
		1230.71		8.90	1.30E+02		1.71E+01	6.04E+01
	HO-166M	184.41		72.60	7.87E-02	7.87E-02	7.28E-02	3.83E-02
		280.45		29.60	2.09E-01		6.07E-02	1.01E-01
		410.94		11.10	5.68E-01		1.40E-01	2.70E-01
		711.69		54.10	1.47E-01		-6.54E-03	6.89E-02
	TM-171	66.72		0.14	4.49E+01	4.49E+01	-7.93E+00	2.20E+01
	HF-172	67.35		5.31	1.13E+00	4.24E-01	-6.36E-01	5.55E-01
		125.81		11.30	4.24E-01		-4.19E-02	2.06E-01
	LU-172	181.53		20.60	7.74E+03	5.45E+03	6.89E+02	3.74E+03
		900.72		29.81	9.50E+03		-9.09E+02	4.40E+03
		1093.66		62.50	5.45E+03		2.41E+03	2.53E+03
	LU-173	100.72		5.24	9.62E-01	3.45E-01	-1.60E-01	4.68E-01
		272.11		21.20	3.45E-01		1.60E-01	1.67E-01
	HF-175	343.40		84.00	2.10E-01	2.10E-01	3.51E-04	1.01E-01
	LU-176	88.34		13.30	4.29E-01	5.53E-02	1.79E-01	2.10E-01
		201.83		86.00	5.53E-02		-1.14E-02	2.67E-02
		306.78		94.00	6.11E-02		3.63E-03	2.93E-02
	HF-181	133.02		41.70	5.64E-01	3.85E-01	3.54E-02	2.74E-01
		345.85		17.20	1.90E+00		3.31E-03	9.13E-01
		482.03		82.80	3.85E-01		1.48E-01	1.82E-01
	TA-182	67.75		41.20	2.43E-01	2.43E-01	-1.36E-01	1.19E-01
		1121.30		34.90	7.29E-01		8.84E-01	3.45E-01
		1189.05		16.23	1.37E+00		4.82E-01	6.41E-01
		1221.41		26.98	8.53E-01		5.77E-01	4.00E-01
		1231.02		11.44	1.85E+00		2.43E-01	8.63E-01
	IR-192	308.46		29.68	5.01E-01	3.49E-01	1.48E-02	2.40E-01
		468.07		48.10	3.49E-01		-3.74E-01	1.65E-01
+	HG-203	279.19	*	77.30	5.50E-01	5.50E-01	3.76E-01	2.69E-01
	TL-204	374.74		94.11	7.28E-02	7.28E-02	3.69E-02	3.48E-02
		899.15		99.16	8.74E-02		1.92E-02	4.05E-02
		911.74		91.10	1.75E-01		4.01E-01	8.41E-02
	BI-207	569.67		97.72	7.38E-02	7.38E-02	2.65E-02	3.48E-02
		1063.62		74.90	1.25E-01		-5.63E-02	5.76E-02
+	TL-208	583.14	*	30.22	4.05E-01	2.40E-01	1.16E+00	1.96E-01
		860.37		4.48	2.01E+00		9.16E-01	9.40E-01
		2614.66	*	35.85	2.40E-01		9.02E-01	1.01E-01
	BI-210M	262.00		45.00	1.27E-01	1.27E-01	8.93E-03	6.15E-02

Analysis Report for 1707091-18

HTC-A08-BKGD02-3036-01

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	BI-210M	300.00		23.00	2.97E-01	1.27E-01	-5.02E-01	1.44E-01
+	PB-210	46.50	*	4.25	2.18E+00	2.18E+00	1.37E+00	1.07E+00
	PB-211	404.84		2.90	2.10E+00	2.10E+00	-1.43E+00	9.98E-01
		831.96		2.90	2.70E+00		-3.57E-01	1.25E+00
	BI-212	727.17		11.80	8.41E-01	8.41E-01	7.12E-01	3.99E-01
		1620.62		2.75	2.40E+00		3.97E-01	1.02E+00
+	PB-212	238.63	*	44.60	2.37E-01	2.37E-01	1.35E+00	1.17E-01
		300.09	*	3.41	1.88E+00		1.47E+00	9.09E-01
+	BI-214	609.31	*	46.30	2.44E-01	2.44E-01	9.35E-01	1.17E-01
		1120.29	*	15.10	2.01E+00		1.15E+00	9.81E-01
		1764.49	*	15.80	7.25E-01		1.22E+00	3.29E-01
		2204.22	*	4.98	1.68E+00		9.66E-01	7.20E-01
+	PB-214	295.21	*	19.19	4.53E-01	3.33E-01	7.32E-01	2.21E-01
		351.92	*	37.19	3.33E-01		6.69E-01	1.63E-01
	RN-219	401.80		6.50	9.73E-01	9.73E-01	-1.48E-01	4.64E-01
	RA-223	323.87		3.88	1.61E+00	1.61E+00	-1.82E+00	7.72E-01
	RA-224	240.98		3.95	2.96E+00	2.96E+00	1.64E+01	1.46E+00
	RA-225	40.00		31.00	3.23E+01	3.23E+01	1.35E+01	1.57E+01
+	RA-226	186.21	*	3.28	2.47E+00	2.47E+00	2.45E+00	1.21E+00
	TH-227	50.10		8.40	7.43E-01	7.43E-01	-1.65E-02	3.62E-01
		236.00		11.50	8.39E-01		1.22E+00	4.11E-01
		256.20		6.30	9.00E-01		7.10E-03	4.34E-01
+	AC-228	338.32	*	11.40	7.22E-01	4.81E-01	1.55E+00	3.50E-01
		911.07	*	27.70	4.81E-01		1.12E+00	2.30E-01
		969.11	*	16.60	9.53E-01		1.06E+00	4.57E-01
	TH-230	48.44		16.90	4.13E-01	4.13E-01	7.59E-02	2.02E-01
		62.85		4.60	1.36E+00		1.77E+00	6.68E-01
		67.67		0.37	1.47E+01		-8.22E+00	7.17E+00
	PA-231	283.67		1.60	3.60E+00	2.79E+00	-2.60E-02	1.73E+00
		302.67		2.30	2.79E+00		1.70E+00	1.34E+00
	TH-231	25.64		14.70	2.66E+00	8.17E-01	1.06E+00	1.30E+00
		84.21		6.40	8.17E-01		-2.06E-01	4.00E-01
	PA-233	311.98		38.60	2.00E+00	2.00E+00	-4.47E-01	9.60E-01
	PA-234	131.20		20.40	2.30E-01	2.30E-01	9.07E-02	1.12E-01
		733.99		8.80	8.52E-01		7.17E-02	3.98E-01
		946.00		12.00	7.36E-01		-7.15E-02	3.42E-01
	PA-234M	1001.03		0.92	1.01E+01	1.01E+01	-3.43E-01	4.68E+00
+	TH-234	63.29	*	3.80	5.20E+00	5.20E+00	2.93E+00	2.58E+00
	U-235	143.76		10.50	4.26E-01	4.26E-01	-8.78E-02	2.07E-01
		163.35		4.70	9.89E-01		2.57E-01	4.80E-01
		205.31		4.70	1.27E+00		2.47E-01	6.18E-01
+	NP-237	86.50	*	12.60	9.02E-01	9.02E-01	5.56E-01	4.47E-01
	NP-239	106.10		22.70	1.62E+12	1.62E+12	8.96E+11	7.91E+11
		228.18		10.70	4.58E+12		8.28E+11	2.22E+12
		277.60		14.10	3.73E+12		1.53E+12	1.80E+12
	AM-241	59.54		35.90	1.60E-01	1.60E-01	-7.17E-02	7.82E-02
	AM-243	74.67		66.00	1.14E-01	1.14E-01	1.61E-01	5.60E-02
	CM-243	209.75		3.29	1.96E+00	4.60E-01	1.86E+00	9.57E-01
		228.14		10.60	5.67E-01		1.03E-01	2.75E-01
		277.60		14.00	4.60E-01		1.88E-01	2.23E-01

Analysis Report for 1707091-18

HTC-A08-BKGD02-3036-01

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

No Action Level results available for reporting purposes.

DATA REVIEW COMMENTS REPORT

Creation Date	Comment	User

No Data Review Comments Entered.

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

Sample Title: HTC-A08-BKGD02-3036-01

Elapsed Live time: 3600
Elapsed Real Time: 3609

Channel								
1:	0	0	0	0	0	0	0	0
9:	7	172	159	157	134	116	100	106
17:	110	99	109	77	92	87	93	107
25:	101	94	81	96	84	80	93	102
33:	80	92	79	80	83	94	89	100
41:	99	79	84	81	80	129	177	121
49:	92	95	102	105	108	111	119	106
57:	108	95	131	123	152	138	162	200
65:	181	137	136	140	145	123	130	159
73:	156	210	353	319	396	437	206	145
81:	117	131	114	132	136	142	195	193
89:	150	159	165	133	215	221	129	95
97:	98	104	98	112	101	84	94	91
105:	112	116	77	105	87	89	84	91
113:	97	83	73	96	82	104	71	73
121:	85	82	83	69	85	70	93	91
129:	92	113	91	84	85	79	82	81
137:	69	80	66	63	85	67	72	80
145:	88	73	88	80	69	65	71	69
153:	65	64	95	67	71	69	56	74
161:	70	80	74	74	69	53	60	63
169:	68	54	66	63	66	77	65	50
177:	62	63	56	51	69	61	52	62
185:	86	115	134	93	61	55	61	67
193:	63	62	56	71	54	52	57	50
201:	62	40	57	59	62	55	48	62
209:	75	91	76	60	56	52	45	59
217:	64	50	52	51	60	48	53	49
225:	50	43	68	51	40	49	50	39
233:	52	43	41	51	79	194	427	291
241:	113	99	97	45	42	39	35	41
249:	50	23	38	47	29	39	44	33
257:	37	36	41	30	35	34	34	41
265:	40	37	33	37	40	51	59	31
273:	40	33	42	42	37	56	47	30
281:	35	31	42	23	29	34	30	31
289:	30	27	34	35	31	29	99	126
297:	64	35	18	54	51	35	31	25
305:	29	23	36	24	31	25	26	28
313:	26	29	24	24	33	39	29	27
321:	25	34	31	35	34	24	24	56
329:	44	25	30	20	33	29	23	25
337:	37	70	89	62	33	40	17	24
345:	16	35	38	26	30	24	58	152
353:	140	68	18	28	24	30	26	31
361:	27	22	18	21	20	22	29	31

369:	18	16	23	26	32	24	19	25

Sample Title: HTC-A08-BKGD02-3036-01

Channel								
377:	21	26	16	25	19	22	19	22
385:	20	19	18	16	18	15	27	24
393:	23	25	26	26	24	20	24	21
401:	27	18	18	15	20	21	22	16
409:	19	29	19	21	12	20	12	17
417:	22	16	18	17	27	15	17	20
425:	24	22	16	18	20	13	13	17
433:	17	10	21	24	19	17	20	10
441:	10	18	14	18	17	21	18	14
449:	25	20	18	14	16	22	12	15
457:	18	19	23	12	14	22	29	42
465:	15	21	17	18	12	15	16	14
473:	19	14	9	21	8	13	22	10
481:	16	11	7	10	18	12	10	17
489:	15	17	13	13	11	9	10	14
497:	13	15	11	20	21	16	16	11
505:	10	18	16	18	22	41	81	43
513:	39	17	15	13	11	9	12	11
521:	13	20	10	16	8	21	13	7
529:	12	7	19	15	14	10	9	8
537:	17	16	12	14	15	9	21	11
545:	11	16	18	20	9	15	16	13
553:	11	14	19	11	11	12	14	16
561:	13	13	20	15	5	18	13	9
569:	7	19	13	18	17	9	13	13
577:	13	17	11	13	17	22	98	95
585:	46	12	12	17	13	11	8	15
593:	6	14	9	10	13	12	12	16
601:	13	11	11	11	12	13	11	31
609:	106	110	67	12	10	10	10	14
617:	11	9	18	11	5	16	16	11
625:	8	10	9	11	7	9	11	8
633:	9	12	11	9	8	15	12	16
641:	3	14	16	13	14	11	8	8
649:	8	12	6	15	10	11	12	12
657:	13	15	8	9	9	14	12	15
665:	17	10	13	8	9	8	14	9
673:	15	5	15	10	9	14	14	7
681:	6	9	15	11	13	11	10	17
689:	9	18	9	20	6	10	21	14
697:	11	13	11	18	9	6	20	17
705:	10	9	14	10	14	12	9	12
713:	5	12	14	9	13	10	14	15
721:	8	18	6	13	7	19	23	26
729:	22	10	8	11	7	14	8	8
737:	9	4	3	9	11	12	13	12
745:	13	9	7	6	6	12	5	10
753:	10	8	15	19	14	15	9	13
761:	9	9	9	5	10	9	15	14
769:	28	15	9	17	15	15	15	11
777:	12	7	6	11	10	15	8	12
785:	12	11	7	11	7	14	8	6
793:	8	13	27	18	5	10	12	9

801:	11	9	6	7	12	7	11	11

Sample Title: HTC-A08-BKGD02-3036-01

Channel								
809:	5	11	7	7	7	12	5	6
817:	10	6	9	11	9	5	10	8
825:	8	3	5	4	7	9	11	5
833:	5	8	11	12	12	4	8	8
841:	8	10	9	8	5	11	4	11
849:	10	12	7	7	9	5	9	9
857:	11	1	11	11	15	14	8	6
865:	6	9	5	9	9	6	8	6
873:	3	9	7	7	8	3	5	9
881:	11	5	10	11	7	7	8	8
889:	5	9	2	14	5	5	7	7
897:	8	6	8	10	7	8	6	8
905:	9	8	6	5	6	25	62	56
913:	30	9	4	6	5	3	5	7
921:	4	5	5	7	6	5	4	6
929:	4	4	9	9	5	17	12	7
937:	5	7	6	6	4	11	8	7
945:	10	8	10	9	5	10	9	9
953:	5	7	6	3	7	6	9	5
961:	7	3	9	11	16	13	11	22
969:	34	35	17	8	5	9	3	4
977:	5	10	10	4	2	7	4	6
985:	10	6	8	8	5	7	3	11
993:	11	5	3	5	4	8	7	17
1001:	7	4	6	8	8	9	9	4
1009:	5	3	3	8	12	6	8	8
1017:	14	8	5	7	10	11	4	6
1025:	16	4	5	5	5	7	10	7
1033:	7	9	10	1	6	5	10	8
1041:	4	11	6	10	10	11	7	9
1049:	4	6	11	8	10	8	6	5
1057:	3	6	7	8	2	7	10	8
1065:	10	6	8	9	14	4	7	3
1073:	5	8	2	5	7	7	10	6
1081:	7	9	8	11	6	12	5	7
1089:	4	3	8	1	4	13	9	12
1097:	8	9	6	7	8	8	9	4
1105:	5	8	7	6	12	13	10	9
1113:	7	3	12	8	4	6	12	29
1121:	27	14	11	9	7	7	4	3
1129:	4	5	11	8	6	4	6	4
1137:	7	8	9	7	8	10	8	5
1145:	8	12	6	7	8	10	5	9
1153:	8	6	11	7	8	8	12	7
1161:	11	10	8	4	7	8	5	15
1169:	6	9	12	12	10	8	7	11
1177:	9	5	7	3	8	14	7	6
1185:	10	8	12	14	13	6	10	10
1193:	6	11	5	5	12	11	6	4
1201:	10	8	14	10	3	7	8	9
1209:	9	6	8	6	10	4	11	9
1217:	7	9	11	11	16	8	11	9
1225:	5	6	12	13	7	5	8	12

1233:	12	5	9	6	18	12	11	13

Sample Title: HTC-A08-BKGD02-3036-01

Channel								
1241:	9	8	7	14	12	11	9	2
1249:	9	8	5	4	4	7	5	9
1257:	8	6	6	9	7	13	5	7
1265:	9	6	3	5	7	5	4	5
1273:	10	4	3	7	4	7	10	6
1281:	4	8	3	11	8	8	2	3
1289:	4	9	9	2	8	9	9	2
1297:	9	2	9	5	3	8	4	6
1305:	4	3	3	4	4	3	7	2
1313:	4	4	7	5	6	2	2	7
1321:	6	7	4	7	7	6	7	5
1329:	2	7	4	0	9	5	5	6
1337:	4	9	4	4	3	3	3	5
1345:	3	4	6	4	1	3	5	1
1353:	4	5	3	1	4	2	8	3
1361:	0	1	7	4	2	3	3	2
1369:	1	3	1	0	2	1	3	5
1377:	11	7	7	7	4	3	4	5
1385:	4	2	2	4	3	3	2	3
1393:	2	4	2	3	3	6	2	2
1401:	2	6	4	1	4	1	3	4
1409:	9	3	2	2	2	2	2	4
1417:	3	3	5	2	1	0	2	2
1425:	6	0	0	2	3	3	5	2
1433:	1	0	2	1	4	4	3	2
1441:	1	1	1	4	1	5	2	4
1449:	3	6	4	4	5	5	1	8
1457:	2	11	65	186	256	170	44	9
1465:	0	0	1	0	0	2	1	1
1473:	1	3	2	1	1	3	0	0
1481:	3	3	0	2	0	3	2	3
1489:	1	0	2	4	6	3	1	2
1497:	2	1	1	4	3	4	0	2
1505:	1	3	0	1	3	1	1	1
1513:	0	1	3	2	2	1	0	1
1521:	1	2	2	1	0	2	0	1
1529:	2	4	3	2	1	0	0	1
1537:	2	1	1	2	1	1	3	2
1545:	3	1	2	0	2	0	0	4
1553:	2	2	1	0	1	1	0	0
1561:	1	1	0	2	2	2	1	0
1569:	0	2	1	1	3	3	0	1
1577:	3	1	1	4	1	2	2	2
1585:	0	1	2	10	4	2	1	3
1593:	6	1	2	2	4	0	4	0
1601:	2	3	1	1	0	2	1	2
1609:	1	1	0	1	0	1	0	0
1617:	1	1	2	3	1	3	0	0
1625:	3	1	1	0	5	5	4	2
1633:	4	0	3	1	3	2	0	1
1641:	2	0	1	1	3	1	2	2
1649:	1	0	1	2	1	1	1	0
1657:	1	1	1	2	2	4	0	1

1665:	0	2	2	0	0	1	1	2

Sample Title: HTC-A08-BKGD02-3036-01

Channel								
1673:	1	1	2	1	3	0	0	1
1681:	0	1	1	2	3	2	2	0
1689:	0	0	2	1	1	2	1	1
1697:	1	1	1	1	1	2	1	1
1705:	1	1	0	0	0	1	1	0
1713:	0	0	4	1	2	0	2	1
1721:	0	1	0	0	0	1	3	4
1729:	6	4	3	0	2	1	0	1
1737:	0	2	0	0	2	2	1	2
1745:	2	0	1	2	2	1	2	0
1753:	2	1	1	1	1	2	2	2
1761:	2	3	6	14	7	12	4	1
1769:	2	1	2	1	0	1	1	1
1777:	1	1	0	0	1	1	1	0
1785:	0	2	1	0	2	0	0	1
1793:	3	0	1	2	0	0	3	1
1801:	1	0	0	0	1	2	1	0
1809:	1	1	2	1	0	1	2	0
1817:	1	0	0	1	2	0	0	1
1825:	0	2	1	0	1	0	1	0
1833:	3	0	2	1	1	0	3	0
1841:	2	0	1	0	0	3	5	2
1849:	1	0	0	0	2	1	1	1
1857:	0	0	1	0	0	0	0	0
1865:	1	0	1	0	0	1	0	1
1873:	1	0	0	1	1	0	0	0
1881:	1	1	0	2	0	0	0	0
1889:	1	0	2	0	2	0	1	2
1897:	1	0	1	0	0	6	4	1
1905:	0	2	1	3	1	1	1	0
1913:	0	0	1	0	2	1	0	1
1921:	1	1	0	0	1	2	1	2
1929:	2	0	2	0	1	1	1	0
1937:	1	1	1	0	2	0	3	0
1945:	2	2	2	0	2	1	2	1
1953:	2	2	1	0	1	0	1	1
1961:	1	1	2	1	1	0	1	2
1969:	1	2	1	1	0	2	0	1
1977:	1	0	0	0	1	1	2	3
1985:	0	0	0	1	0	0	0	0
1993:	1	1	2	0	1	0	1	0
2001:	1	0	2	1	3	1	1	2
2009:	0	0	0	1	1	0	3	2
2017:	0	4	1	0	0	1	2	0
2025:	1	0	0	0	0	0	0	0
2033:	1	0	0	0	0	0	1	0
2041:	1	1	1	1	0	1	1	1
2049:	1	1	1	2	0	1	1	0
2057:	1	3	0	2	0	1	0	1
2065:	1	1	1	1	1	0	0	0
2073:	0	1	0	0	1	1	0	2
2081:	0	1	1	0	1	0	0	3
2089:	1	2	3	1	0	0	1	1

2097:	0	1	2	1	1	4	3	3

Sample Title: HTC-A08-BKGD02-3036-01

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

2529:	0	3	0	1	0	1	0	1

Sample Title: HTC-A08-BKGD02-3036-01

Channel								
2537:	1	0	0	0	0	1	0	0
2545:	0	0	0	0	0	0	0	1
2553:	0	0	1	0	1	1	0	3
2561:	1	1	0	0	0	0	0	2
2569:	1	0	1	0	0	0	0	0
2577:	1	1	0	1	0	0	0	0
2585:	0	0	1	0	1	1	0	0
2593:	1	0	0	0	0	1	1	1
2601:	0	1	0	0	0	0	0	0
2609:	1	0	2	3	9	26	19	7
2617:	5	1	0	1	0	0	0	1
2625:	1	0	0	0	0	0	0	0
2633:	0	0	0	0	0	0	1	1
2641:	0	0	0	0	0	0	0	0
2649:	0	0	0	0	0	0	0	0
2657:	0	1	0	0	0	0	0	1
2665:	0	1	0	0	0	0	0	0
2673:	0	0	0	0	0	0	0	1
2681:	0	0	0	0	0	0	0	2
2689:	0	1	0	0	1	0	0	1
2697:	0	1	0	0	0	1	0	0
2705:	0	0	0	1	0	0	0	0
2713:	0	1	0	0	0	0	0	0
2721:	0	0	0	0	1	0	1	0
2729:	0	0	0	0	0	0	1	0
2737:	0	0	0	0	0	1	0	0
2745:	1	0	0	0	0	0	0	0
2753:	0	0	0	0	0	1	0	1
2761:	0	0	0	1	0	1	1	0
2769:	0	1	0	0	0	0	0	0
2777:	1	0	0	1	0	1	0	0
2785:	0	0	0	1	0	0	0	0
2793:	0	2	0	1	0	0	0	1
2801:	1	0	0	1	0	1	0	2
2809:	0	0	0	0	0	1	0	0
2817:	0	0	0	0	1	0	1	0
2825:	1	0	1	0	1	0	0	0
2833:	0	0	0	0	0	1	0	0
2841:	0	0	0	0	0	0	0	1
2849:	0	0	0	0	1	0	0	1
2857:	0	0	1	0	0	0	0	1
2865:	0	0	1	0	0	0	0	0
2873:	0	0	0	0	1	0	0	0
2881:	0	0	0	0	0	0	0	0
2889:	0	0	0	0	0	1	0	2
2897:	0	0	0	0	0	0	0	1
2905:	0	1	0	0	1	0	0	0
2913:	1	0	0	0	0	0	0	1
2921:	1	2	0	0	0	0	0	0
2929:	0	0	1	0	0	0	0	0
2937:	0	0	0	0	0	0	0	0
2945:	0	1	0	0	0	0	0	1
2953:	0	0	0	0	0	0	0	1

2961:	0	0	0	0	0	0	0	0

Sample Title: HTC-A08-BKGD02-3036-01

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

3393:	0	1	0	0	0	0	0	0

Sample Title: HTC-A08-BKGD02-3036-01

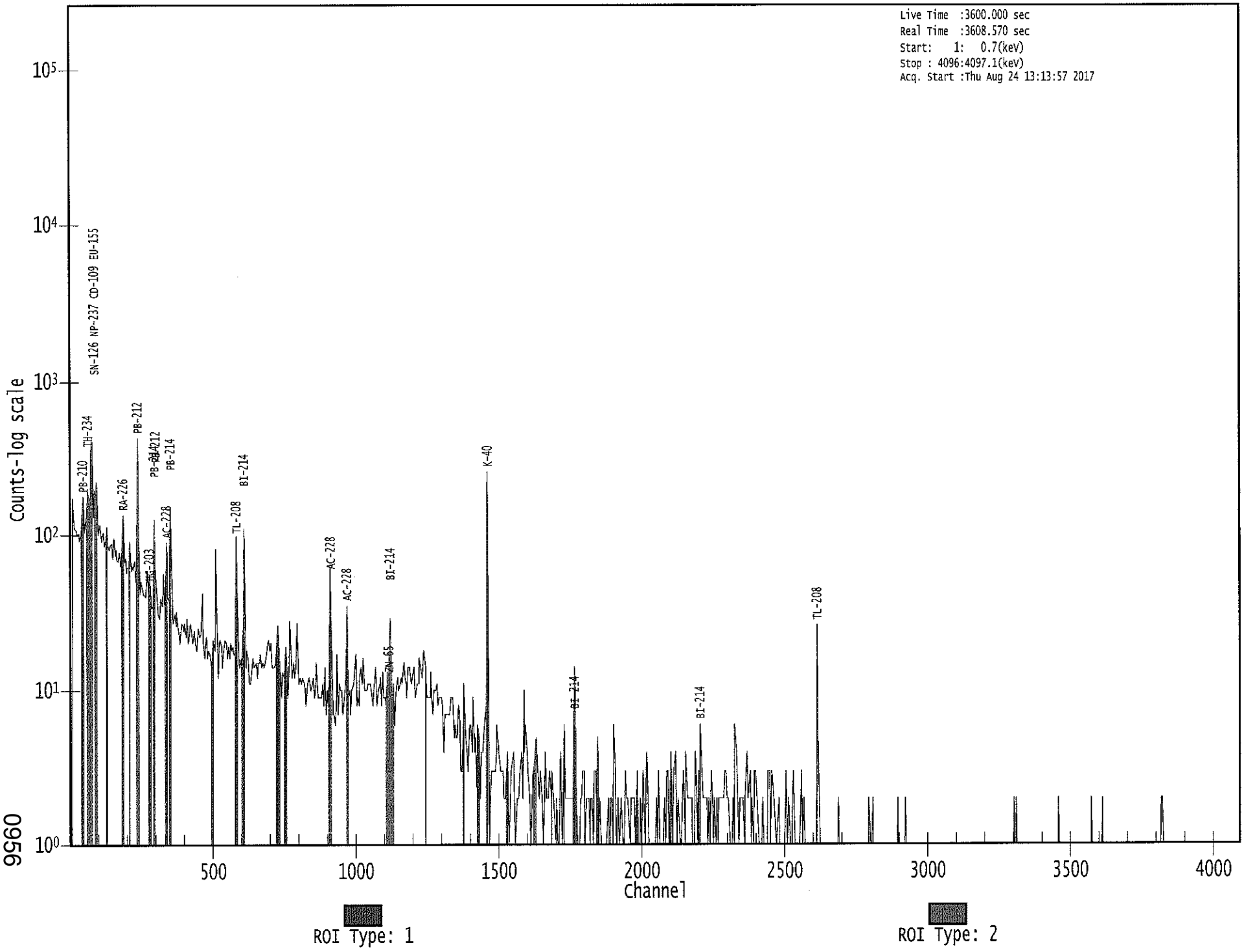
Channel								
3401:	0	0	0	0	0	0	0	0
3409:	0	1	0	0	0	0	0	0
3417:	0	0	0	0	0	0	0	0
3425:	1	0	0	0	1	0	0	0
3433:	0	0	0	0	0	0	1	0
3441:	0	0	0	0	0	0	0	0
3449:	0	0	0	0	0	0	0	0
3457:	1	2	0	0	0	0	0	0
3465:	0	0	0	0	0	0	0	0
3473:	0	0	0	1	0	0	0	0
3481:	0	0	0	0	0	1	0	0
3489:	0	0	0	0	0	0	0	0
3497:	0	0	0	0	0	0	0	0
3505:	0	0	0	0	0	0	0	0
3513:	0	0	0	0	0	0	0	0
3521:	0	0	0	1	0	0	0	0
3529:	0	1	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	1
3561:	0	0	0	0	0	0	0	0
3569:	0	0	0	0	2	0	1	0
3577:	0	0	0	0	0	0	0	0
3585:	0	1	1	0	0	0	1	1
3593:	0	0	0	0	0	0	0	0
3601:	0	1	0	1	0	0	0	0
3609:	0	0	1	2	0	0	0	0
3617:	0	0	0	0	0	0	0	0
3625:	0	0	0	0	1	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	0	0	0	0
3673:	0	0	0	0	0	1	0	0
3681:	0	0	0	0	1	0	0	0
3689:	0	0	0	0	0	1	0	0
3697:	0	0	0	0	0	0	1	1
3705:	0	1	0	0	0	0	0	0
3713:	0	0	0	0	0	0	0	0
3721:	0	0	0	1	0	0	0	0
3729:	1	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:	1	0	0	0	0	0	0	0
3761:	0	0	0	0	0	0	0	0
3769:	0	0	1	1	0	0	1	0
3777:	0	0	0	0	0	0	0	0
3785:	0	0	0	0	0	0	0	0
3793:	1	0	0	1	0	0	0	0
3801:	0	0	0	0	0	0	0	0
3809:	0	0	1	0	0	0	0	1
3817:	0	2	0	0	2	0	0	0

3825:	0	1	0	0	0	0	0	0

Sample Title: HTC-A08-BKGD02-3036-01

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

0000055907.CNF



0956

KB 3/24/17

Apex-Gamma

Analysis Report for 1707091-19

HTC-A08-BKGD02-3642-01

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 1707091-19
Sample Description	: HTC-A08-BKGD02-3642-01
Sample Type	: SOIL
Sample Size	: 8.018E+02 grams
Facility	: Countroom
Sample Taken On	: 5/15/2017 1:00:46PM
Acquisition Started	: 8/24/2017 1:15:34PM
Procedure	: GAS-1602 pCi
Operator	: Administrator
Detector Name	: GE1
Geometry	: GAS-1602
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	: 1/14/2017
Efficiency Calibration Used Done On	: 1/14/2017
Efficiency Calibration Description	:
Sample Number	: 55908

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

Analysis Report for 1707091-19

HTC-A08-BKGD02-3642-01

PEAK LOCATE REPORT

Peak Locate Performed on : 8/24/2017 2:15:39PM
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	31.59	32.22	0.0000	0.00
2	62.87	63.48	0.0000	0.00
3	74.56	75.15	0.0000	0.00
4	77.26	77.85	0.0000	0.00
5	92.44	93.02	0.0000	0.00
6	185.41	185.89	0.0000	0.00
7	208.29	208.74	0.0000	0.00
8	238.58	239.00	0.0000	0.00
9	241.74	242.17	0.0000	0.00
10	269.91	270.30	0.0000	0.00
11	295.33	295.70	0.0000	0.00
12	300.72	301.08	0.0000	0.00
13	328.47	328.81	0.0000	0.00
14	338.54	338.86	0.0000	0.00
15	351.71	352.03	0.0000	0.00
16	405.07	405.33	0.0000	0.00
17	411.05	411.30	0.0000	0.00
18	462.37	462.56	0.0000	0.00
19	510.76	510.91	0.0000	0.00
20	517.62	517.76	0.0000	0.00
21	579.19	579.27	0.0000	0.00
22	583.31	583.39	0.0000	0.00
23	588.93	589.00	0.0000	0.00
24	610.07	610.12	0.0000	0.00
25	728.02	727.95	0.0000	0.00
26	756.91	756.81	0.0000	0.00
27	769.26	769.15	0.0000	0.00
28	795.48	795.35	0.0000	0.00
29	836.55	836.37	0.0000	0.00
30	841.10	840.91	0.0000	0.00
31	870.61	870.40	0.0000	0.00
32	911.52	911.27	0.0000	0.00
33	935.21	934.94	0.0000	0.00
34	965.48	965.17	0.0000	0.00
35	969.44	969.13	0.0000	0.00
36	1009.96	1009.61	0.0000	0.00
37	1094.93	1094.49	0.0000	0.00
38	1120.72	1120.26	0.0000	0.00
39	1189.29	1188.76	0.0000	0.00
40	1254.54	1253.95	0.0000	0.00
41	1352.12	1351.43	0.0000	0.00
42	1367.20	1366.49	0.0000	0.00

Analysis Report for 1707091-19

HTC-A08-BKGD02-3642-01

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
43	1376.60	1375.88	0.0000	0.00
44	1409.14	1408.40	0.0000	0.00
45	1461.47	1460.67	0.0000	0.00
46	1465.82	1465.02	0.0000	0.00
47	1504.59	1503.75	0.0000	0.00
48	1509.84	1509.00	0.0000	0.00
49	1566.95	1566.05	0.0000	0.00
50	1589.66	1588.74	0.0000	0.00
51	1631.50	1630.54	0.0000	0.00
52	1638.20	1637.23	0.0000	0.00
53	1661.44	1660.45	0.0000	0.00
54	1693.54	1692.51	0.0000	0.00
55	1732.80	1731.74	0.0000	0.00
56	1765.25	1764.16	0.0000	0.00
57	1817.69	1816.55	0.0000	0.00
58	1847.96	1846.78	0.0000	0.00
59	1920.51	1919.26	0.0000	0.00
60	2017.51	2016.17	0.0000	0.00
61	2104.77	2103.35	0.0000	0.00
62	2204.89	2203.38	0.0000	0.00
63	2355.29	2353.63	0.0000	0.00
64	2471.32	2469.55	0.0000	0.00
65	2615.43	2613.52	0.0000	0.00
66	3907.11	3904.00	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1707091-19

HTC-A08-BKGD02-3642-01

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 8/24/2017 2:15:39PM

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	31.59	30 -	34	32.22	5.33E+01	49.91	5.01E+02	1.42
	2	62.87	59 -	67	63.48	2.26E+02	117.21	1.98E+03	1.58
M	3	74.56	72 -	86	75.15	3.10E+02	90.85	1.39E+03	1.65
m	4	77.26	72 -	86	77.85	4.40E+02	95.51	1.39E+03	1.65
	5	92.44	90 -	97	93.02	2.81E+02	111.19	1.84E+03	1.76
	6	185.41	181 -	190	185.89	1.88E+02	90.83	1.07E+03	1.79
	7	208.29	206 -	211	208.74	6.27E+01	58.95	6.45E+02	0.99
M	8	238.58	233 -	247	239.00	7.26E+02	69.68	4.20E+02	1.82
m	9	241.74	233 -	247	242.17	1.59E+02	70.02	3.99E+02	1.82
	10	269.91	268 -	273	270.30	4.47E+01	45.35	3.77E+02	2.53
M	11	295.33	292 -	305	295.70	2.43E+02	46.78	2.85E+02	1.61
m	12	300.72	292 -	305	301.08	4.49E+01	43.54	3.26E+02	2.06
	13	328.47	325 -	331	328.81	4.82E+01	43.85	3.14E+02	2.71
	14	338.54	335 -	343	338.86	1.90E+02	60.67	4.49E+02	1.95
	15	351.71	347 -	355	352.03	3.67E+02	63.10	3.86E+02	1.49
	16	405.07	403 -	407	405.33	2.74E+01	30.44	1.77E+02	2.02
	17	411.05	408 -	417	411.30	4.62E+01	48.56	3.12E+02	4.17
	18	462.37	457 -	468	462.56	8.34E+01	52.76	3.07E+02	3.57
	19	510.76	505 -	516	510.91	1.53E+02	59.90	3.71E+02	1.90
	20	517.62	516 -	521	517.76	2.10E+01	26.72	1.26E+02	1.85
M	21	579.19	578 -	592	579.27	1.68E+01	17.20	7.98E+01	2.25
m	22	583.31	578 -	592	583.39	2.58E+02	44.27	1.70E+02	2.25
m	23	588.93	578 -	592	589.00	2.03E+01	28.84	1.29E+02	1.86
	24	610.07	604 -	622	610.12	3.42E+02	75.96	3.97E+02	2.13
	25	728.02	723 -	736	727.95	7.79E+01	44.89	1.90E+02	2.55
	26	756.91	752 -	766	756.81	4.51E+01	46.85	2.20E+02	11.24
	27	769.26	766 -	773	769.15	5.46E+01	29.53	1.11E+02	2.94
	28	795.48	791 -	799	795.35	2.87E+01	32.81	1.47E+02	5.16
M	29	836.55	834 -	846	836.37	3.60E+01	20.09	6.11E+01	2.49
m	30	841.10	834 -	846	840.91	2.70E+01	29.36	9.82E+01	2.89
	31	870.61	867 -	873	870.40	1.85E+01	23.02	8.10E+01	3.78
	32	911.52	906 -	916	911.27	1.71E+02	44.77	1.75E+02	2.05
	33	935.21	933 -	937	934.94	2.01E+01	18.21	5.38E+01	2.57
M	34	965.48	960 -	975	965.17	3.24E+01	28.13	1.08E+02	2.22
m	35	969.44	960 -	975	969.13	7.25E+01	30.25	9.59E+01	2.22
	36	1009.96	1007 -	1012	1009.61	2.43E+01	16.88	3.53E+01	3.65
	37	1094.93	1090 -	1097	1094.49	2.28E+01	23.83	7.84E+01	3.74
	38	1120.72	1115 -	1125	1120.26	9.98E+01	37.85	1.38E+02	1.90
	39	1189.29	1186 -	1191	1188.76	2.17E+01	24.72	1.05E+02	2.63
	40	1254.54	1252 -	1256	1253.95	1.25E+01	14.76	3.69E+01	2.04

Analysis Report for 1707091-19

HTC-A08-BKGD02-3642-01

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
	41	1352.12	1349 -	1354	1351.43	1.30E+01	13.11	2.40E+01	3.21
	42	1367.20	1363 -	1370	1366.49	1.38E+01	16.49	3.64E+01	2.21
	43	1376.60	1371 -	1385	1375.88	2.33E+01	27.02	6.55E+01	6.50
	44	1409.14	1404 -	1411	1408.40	1.24E+01	15.36	2.91E+01	1.40
M	45	1461.47	1454 -	1469	1460.67	1.04E+03	66.02	3.12E+01	2.34
m	46	1465.82	1454 -	1469	1465.02	3.51E+01	52.35	3.96E+01	2.65
	47	1504.59	1501 -	1506	1503.75	1.24E+01	9.54	7.13E+00	2.90
	48	1509.84	1507 -	1512	1509.00	1.00E+01	6.32	0.00E+00	2.36
	49	1566.95	1563 -	1568	1566.05	6.22E+00	7.35	5.56E+00	2.88
	50	1589.66	1584 -	1595	1588.74	2.55E+01	18.55	3.09E+01	2.30
	51	1631.50	1628 -	1632	1630.54	7.45E+00	7.92	7.09E+00	1.81
	52	1638.20	1634 -	1640	1637.23	6.50E+00	6.65	3.00E+00	2.16
	53	1661.44	1656 -	1664	1660.45	1.12E+01	11.52	1.36E+01	1.79
	54	1693.54	1689 -	1696	1692.51	6.90E+00	8.49	6.20E+00	1.41
	55	1732.80	1725 -	1740	1731.74	2.57E+01	16.00	1.27E+01	3.65
	56	1765.25	1758 -	1769	1764.16	6.63E+01	21.35	2.34E+01	2.06
	57	1817.69	1814 -	1818	1816.55	5.79E+00	5.85	2.43E+00	1.36
	58	1847.96	1842 -	1849	1846.78	9.91E+00	10.58	1.22E+01	1.68
	59	1920.51	1915 -	1923	1919.26	8.50E+00	9.62	9.00E+00	3.24
	60	2017.51	2012 -	2018	2016.17	5.22E+00	7.78	7.56E+00	2.63
	61	2104.77	2101 -	2106	2103.35	6.88E+00	9.85	1.22E+01	2.32
	62	2204.89	2200 -	2206	2203.38	1.60E+01	8.00	0.00E+00	1.85
	63	2355.29	2351 -	2357	2353.63	7.72E+00	6.95	2.56E+00	2.63
	64	2471.32	2467 -	2472	2469.55	5.63E+00	7.07	4.75E+00	2.00
	65	2615.43	2610 -	2617	2613.52	1.02E+02	20.20	0.00E+00	3.10
	66	3907.11	3900 -	3906	3904.00	5.00E+00	4.47	0.00E+00	2.98

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 : 8/24/2017 2:15:39PM

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	31.59	30 -	34	5.33E+01	49.91	5.01E+02	3.92E+01
2	62.87	59 -	67	2.26E+02	117.21	1.98E+03	9.31E+01

Analysis Report for 1707091-19

HTC-A08-BKGD02-3642-01

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
M	3	74.56	72 -	86	3.10E+02	90.85	1.39E+03	6.13E+01
m	4	77.26	72 -	86	4.40E+02	95.51	1.39E+03	6.13E+01
	5	92.44	90 -	97	2.81E+02	111.19	1.84E+03	8.72E+01
	6	185.41	181 -	190	1.88E+02	90.83	1.07E+03	7.12E+01
	7	208.29	206 -	211	6.27E+01	58.95	6.45E+02	4.67E+01
M	8	238.58	233 -	247	7.26E+02	69.68	4.20E+02	3.37E+01
m	9	241.74	233 -	247	1.59E+02	70.02	3.99E+02	3.28E+01
	10	269.91	268 -	273	4.47E+01	45.35	3.77E+02	3.56E+01
M	11	295.33	292 -	305	2.43E+02	46.78	2.85E+02	2.78E+01
m	12	300.72	292 -	305	4.49E+01	43.54	3.26E+02	2.97E+01
	13	328.47	325 -	331	4.82E+01	43.85	3.14E+02	3.42E+01
	14	338.54	335 -	343	1.90E+02	60.67	4.49E+02	4.44E+01
	15	351.71	347 -	355	3.67E+02	63.10	3.86E+02	4.12E+01
	16	405.07	403 -	407	2.74E+01	30.44	1.77E+02	2.35E+01
	17	411.05	408 -	417	4.62E+01	48.56	3.12E+02	3.83E+01
	18	462.37	457 -	468	8.34E+01	52.76	3.07E+02	4.07E+01
	19	510.76	505 -	516	1.53E+02	59.90	3.71E+02	4.48E+01
	20	517.62	516 -	521	2.10E+01	26.72	1.26E+02	2.06E+01
M	21	579.19	578 -	592	1.68E+01	17.20	7.98E+01	1.47E+01
m	22	583.31	578 -	592	2.58E+02	44.27	1.70E+02	2.14E+01
m	23	588.93	578 -	592	2.03E+01	28.84	1.29E+02	1.87E+01
	24	610.07	604 -	622	3.42E+02	75.96	3.97E+02	1.78E+01
	25	728.02	723 -	736	7.79E+01	44.89	1.90E+02	1.59E+01
	26	756.91	752 -	766	4.51E+01	46.85	2.20E+02	3.69E+01
	27	769.26	766 -	773	5.46E+01	29.53	1.11E+02	2.10E+01
	28	795.48	791 -	799	2.87E+01	32.81	1.47E+02	2.55E+01
M	29	836.55	834 -	846	3.60E+01	20.09	6.11E+01	1.29E+01
m	30	841.10	834 -	846	2.70E+01	29.36	9.82E+01	1.63E+01
	31	870.61	867 -	873	1.85E+01	23.02	8.10E+01	1.76E+01
	32	911.52	906 -	916	1.71E+02	44.77	1.75E+02	2.99E+01
	33	935.21	933 -	937	2.01E+01	18.21	5.38E+01	1.30E+01
M	34	965.48	960 -	975	3.24E+01	28.13	1.08E+02	1.71E+01
m	35	969.44	960 -	975	7.25E+01	30.25	9.59E+01	1.61E+01
	36	1009.96	1007 -	1012	2.43E+01	16.88	3.53E+01	1.13E+01
	37	1094.93	1090 -	1097	2.28E+01	23.83	7.84E+01	1.79E+01
	38	1120.72	1115 -	1125	9.98E+01	37.85	1.38E+02	2.64E+01
	39	1189.29	1186 -	1191	2.17E+01	24.72	1.05E+02	1.88E+01
	40	1254.54	1252 -	1256	1.25E+01	14.76	3.69E+01	1.06E+01
	41	1352.12	1349 -	1354	1.30E+01	13.11	2.40E+01	9.00E+00
	42	1367.20	1363 -	1370	1.38E+01	16.49	3.64E+01	1.21E+01
	43	1376.60	1371 -	1385	2.33E+01	27.02	6.55E+01	2.08E+01
	44	1409.14	1404 -	1411	1.24E+01	15.36	2.91E+01	1.12E+01
M	45	1461.47	1454 -	1469	1.04E+03	66.02	3.12E+01	9.19E+00
m	46	1465.82	1454 -	1469	3.51E+01	52.35	3.96E+01	1.03E+01
	47	1504.59	1501 -	1506	1.24E+01	9.54	7.13E+00	5.28E+00
	48	1509.84	1507 -	1512	1.00E+01	6.32	0.00E+00	0.00E+00
	49	1566.95	1563 -	1568	6.22E+00	7.35	5.56E+00	4.44E+00
	50	1589.66	1584 -	1595	2.55E+01	18.55	3.09E+01	1.28E+01
	51	1631.50	1628 -	1632	7.45E+00	7.92	7.09E+00	4.72E+00
	52	1638.20	1634 -	1640	6.50E+00	6.65	3.00E+00	3.51E+00
	53	1661.44	1656 -	1664	1.12E+01	11.52	1.36E+01	7.71E+00

Analysis Report for 1707091-19

HTC-A08-BKGD02-3642-01

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
54	1693.54	1689 -	1696	6.90E+00	8.49	6.20E+00	5.48E+00
55	1732.80	1725 -	1740	2.57E+01	16.00	1.27E+01	1.02E+01
56	1765.25	1758 -	1769	6.63E+01	21.35	2.34E+01	1.14E+01
57	1817.69	1814 -	1818	5.79E+00	5.85	2.43E+00	2.74E+00
58	1847.96	1842 -	1849	9.91E+00	10.58	1.22E+01	6.99E+00
59	1920.51	1915 -	1923	8.50E+00	9.62	9.00E+00	6.29E+00
60	2017.51	2012 -	2018	5.22E+00	7.78	7.56E+00	5.17E+00
61	2104.77	2101 -	2106	6.88E+00	9.85	1.22E+01	6.85E+00
62	2204.89	2200 -	2206	1.60E+01	8.00	0.00E+00	0.00E+00
63	2355.29	2351 -	2357	7.72E+00	6.95	2.56E+00	3.43E+00
64	2471.32	2467 -	2472	5.63E+00	7.07	4.75E+00	4.31E+00
65	2615.43	2610 -	2617	1.02E+02	20.20	0.00E+00	0.00E+00
66	3907.11	3900 -	3906	5.00E+00	4.47	0.00E+00	0.00E+00

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

PEAK WITH NID REPORT

Peak Analysis Performed on : 8/24/2017 2:15:39PM

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	31.59	30 -	34	32.22	5.33E+01	49.91	5.01E+02	.....
	2	62.87	59 -	67	63.48	2.26E+02	117.21	1.98E+03	TH-230
									TH-234
M	3	74.56	72 -	86	75.15	3.10E+02	90.85	1.39E+03	AM-243
m	4	77.26	72 -	86	77.85	4.40E+02	95.51	1.39E+03	.....
	5	92.44	90 -	97	93.02	2.81E+02	111.19	1.84E+03	GA-67
	6	185.41	181 -	190	185.89	1.88E+02	90.83	1.07E+03	RA-226
									HO-166M
	7	208.29	206 -	211	208.74	6.27E+01	58.95	6.45E+02	GA-67
M	8	238.58	233 -	247	239.00	7.26E+02	69.68	4.20E+02	PB-212
m	9	241.74	233 -	247	242.17	1.59E+02	70.02	3.99E+02	RA-224
	10	269.91	268 -	273	270.30	4.47E+01	45.35	3.77E+02	.....

Analysis Report for 1707091-19

HTC-A08-BKGD02-3642-01

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
M	11	295.33	292 -	305	295.70	2.43E+02	46.78	2.85E+02	PB-214
m	12	300.72	292 -	305	301.08	4.49E+01	43.54	3.26E+02	GA-67
									PB-212
									BI-210M
	13	328.47	325 -	331	328.81	4.82E+01	43.85	3.14E+02	LA-140
	14	338.54	335 -	343	338.86	1.90E+02	60.67	4.49E+02	AC-228
	15	351.71	347 -	355	352.03	3.67E+02	63.10	3.86E+02	PB-214
	16	405.07	403 -	407	405.33	2.74E+01	30.44	1.77E+02	PB-211
	17	411.05	408 -	417	411.30	4.62E+01	48.56	3.12E+02	HO-166M
	18	462.37	457 -	468	462.56	8.34E+01	52.76	3.07E+02	.....
	19	510.76	505 -	516	510.91	1.53E+02	59.90	3.71E+02	.....
	20	517.62	516 -	521	517.76	2.10E+01	26.72	1.26E+02	.....
M	21	579.19	578 -	592	579.27	1.68E+01	17.20	7.98E+01	.....
m	22	583.31	578 -	592	583.39	2.58E+02	44.27	1.70E+02	TL-208
m	23	588.93	578 -	592	589.00	2.03E+01	28.84	1.29E+02	.....
	24	610.07	604 -	622	610.12	3.42E+02	75.96	3.97E+02	BI-214
	25	728.02	723 -	736	727.95	7.79E+01	44.89	1.90E+02	BI-212
	26	756.91	752 -	766	756.81	4.51E+01	46.85	2.20E+02	ZR-95
	27	769.26	766 -	773	769.15	5.46E+01	29.53	1.11E+02	.....
	28	795.48	791 -	799	795.35	2.87E+01	32.81	1.47E+02	CS-134
M	29	836.55	834 -	846	836.37	3.60E+01	20.09	6.11E+01	.....
m	30	841.10	834 -	846	840.91	2.70E+01	29.36	9.82E+01	.....
	31	870.61	867 -	873	870.40	1.85E+01	23.02	8.10E+01	NB-94
	32	911.52	906 -	916	911.27	1.71E+02	44.77	1.75E+02	TL-204
									AC-228
	33	935.21	933 -	937	934.94	2.01E+01	18.21	5.38E+01	.....
M	34	965.48	960 -	975	965.17	3.24E+01	28.13	1.08E+02	.....
m	35	969.44	960 -	975	969.13	7.25E+01	30.25	9.59E+01	AC-228
	36	1009.96	1007 -	1012	1009.61	2.43E+01	16.88	3.53E+01	.....
	37	1094.93	1090 -	1097	1094.49	2.28E+01	23.83	7.84E+01	.....
	38	1120.72	1115 -	1125	1120.26	9.98E+01	37.85	1.38E+02	SC-46
									BI-214
									TA-182
	39	1189.29	1186 -	1191	1188.76	2.17E+01	24.72	1.05E+02	TA-182
	40	1254.54	1252 -	1256	1253.95	1.25E+01	14.76	3.69E+01	.....
	41	1352.12	1349 -	1354	1351.43	1.30E+01	13.11	2.40E+01	.....
	42	1367.20	1363 -	1370	1366.49	1.38E+01	16.49	3.64E+01	.....
	43	1376.60	1371 -	1385	1375.88	2.33E+01	27.02	6.55E+01	.....
	44	1409.14	1404 -	1411	1408.40	1.24E+01	15.36	2.91E+01	.....
M	45	1461.47	1454 -	1469	1460.67	1.04E+03	66.02	3.12E+01	K-40
m	46	1465.82	1454 -	1469	1465.02	3.51E+01	52.35	3.96E+01	.....
	47	1504.59	1501 -	1506	1503.75	1.24E+01	9.54	7.13E+00	.....
	48	1509.84	1507 -	1512	1509.00	1.00E+01	6.32	0.00E+00	.....
	49	1566.95	1563 -	1568	1566.05	6.22E+00	7.35	5.56E+00	.....
	50	1589.66	1584 -	1595	1588.74	2.55E+01	18.55	3.09E+01	.....
	51	1631.50	1628 -	1632	1630.54	7.45E+00	7.92	7.09E+00	.....
	52	1638.20	1634 -	1640	1637.23	6.50E+00	6.65	3.00E+00	.....
	53	1661.44	1656 -	1664	1660.45	1.12E+01	11.52	1.36E+01	.....
	54	1693.54	1689 -	1696	1692.51	6.90E+00	8.49	6.20E+00	.....
	55	1732.80	1725 -	1740	1731.74	2.57E+01	16.00	1.27E+01	.....
	56	1765.25	1758 -	1769	1764.16	6.63E+01	21.35	2.34E+01	BI-214
	57	1817.69	1814 -	1818	1816.55	5.79E+00	5.85	2.43E+00	.....
	58	1847.96	1842 -	1849	1846.78	9.91E+00	10.58	1.22E+01	.....
	59	1920.51	1915 -	1923	1919.26	8.50E+00	9.62	9.00E+00	.....

Analysis Report for 1707091-19

HTC-A08-BKGD02-3642-01

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
60	2017.51	2012 -	2018	2016.17	5.22E+00	7.78	7.56E+00	.....
61	2104.77	2101 -	2106	2103.35	6.88E+00	9.85	1.22E+01	.....
62	2204.89	2200 -	2206	2203.38	1.60E+01	8.00	0.00E+00	BI-214
63	2355.29	2351 -	2357	2353.63	7.72E+00	6.95	2.56E+00	.....
64	2471.32	2467 -	2472	2469.55	5.63E+00	7.07	4.75E+00	.....
65	2615.43	2610 -	2617	2613.52	1.02E+02	20.20	0.00E+00	TL-208
66	3907.11	3900 -	3906	3904.00	5.00E+00	4.47	0.00E+00	.....

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

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 8/24/2017 2:15:39PM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	31.59	5.33E+01	49.91	1.98E-02	2.22E-03
	2	62.87	2.26E+02	117.21	2.70E-02	2.25E-03
M	3	74.56	3.10E+02	90.85	2.75E-02	2.38E-03
m	4	77.26	4.40E+02	95.51	2.75E-02	2.41E-03
	5	92.44	2.81E+02	111.19	2.73E-02	2.45E-03
	6	185.41	1.88E+02	90.83	2.17E-02	1.68E-03
	7	208.29	6.27E+01	58.95	2.04E-02	1.61E-03
M	8	238.58	7.26E+02	69.68	1.89E-02	1.53E-03
m	9	241.74	1.59E+02	70.02	1.87E-02	1.52E-03
	10	269.91	4.47E+01	45.35	1.74E-02	1.44E-03
M	11	295.33	2.43E+02	46.78	1.64E-02	1.37E-03
m	12	300.72	4.49E+01	43.54	1.62E-02	1.36E-03
	13	328.47	4.82E+01	43.85	1.53E-02	1.29E-03
	14	338.54	1.90E+02	60.67	1.49E-02	1.27E-03
	15	351.71	3.67E+02	63.10	1.45E-02	1.24E-03
	16	405.07	2.74E+01	30.44	1.31E-02	1.14E-03
	17	411.05	4.62E+01	48.56	1.30E-02	1.13E-03
	18	462.37	8.34E+01	52.76	1.19E-02	1.10E-03
	19	510.76	1.53E+02	59.90	1.10E-02	1.07E-03
	20	517.62	2.10E+01	26.72	1.09E-02	1.06E-03
M	21	579.19	1.68E+01	17.20	1.00E-02	1.02E-03
m	22	583.31	2.58E+02	44.27	9.96E-03	1.02E-03
m	23	588.93	2.03E+01	28.84	9.89E-03	1.02E-03

Analysis Report for 1707091-19

HTC-A08-BKGD02-3642-01

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	24	610.07	3.42E+02	75.96	9.62E-03	1.00E-03
	25	728.02	7.79E+01	44.89	8.40E-03	8.67E-04
	26	756.91	4.51E+01	46.85	8.16E-03	8.21E-04
	27	769.26	5.46E+01	29.53	8.06E-03	8.01E-04
	28	795.48	2.87E+01	32.81	7.85E-03	7.59E-04
M	29	836.55	3.60E+01	20.09	7.56E-03	6.94E-04
m	30	841.10	2.70E+01	29.36	7.53E-03	6.87E-04
	31	870.61	1.85E+01	23.02	7.33E-03	6.40E-04
	32	911.52	1.71E+02	44.77	7.08E-03	5.91E-04
	33	935.21	2.01E+01	18.21	6.95E-03	5.82E-04
M	34	965.48	3.24E+01	28.13	6.78E-03	5.71E-04
m	35	969.44	7.25E+01	30.25	6.76E-03	5.69E-04
	36	1009.96	2.43E+01	16.88	6.56E-03	5.54E-04
	37	1094.93	2.28E+01	23.83	6.18E-03	5.21E-04
	38	1120.72	9.98E+01	37.85	6.07E-03	5.11E-04
	39	1189.29	2.17E+01	24.72	5.81E-03	4.87E-04
	40	1254.54	1.25E+01	14.76	5.59E-03	4.72E-04
	41	1352.12	1.30E+01	13.11	5.29E-03	4.50E-04
	42	1367.20	1.38E+01	16.49	5.25E-03	4.46E-04
	43	1376.60	2.33E+01	27.02	5.22E-03	4.44E-04
	44	1409.14	1.24E+01	15.36	5.14E-03	4.37E-04
M	45	1461.47	1.04E+03	66.02	5.00E-03	4.25E-04
m	46	1465.82	3.51E+01	52.35	4.99E-03	4.24E-04
	47	1504.59	1.24E+01	9.54	4.90E-03	4.15E-04
	48	1509.84	1.00E+01	6.32	4.89E-03	4.13E-04
	49	1566.95	6.22E+00	7.35	4.76E-03	4.00E-04
	50	1589.66	2.55E+01	18.55	4.71E-03	3.95E-04
	51	1631.50	7.45E+00	7.92	4.63E-03	3.85E-04
	52	1638.20	6.50E+00	6.65	4.61E-03	3.84E-04
	53	1661.44	1.12E+01	11.52	4.57E-03	3.78E-04
	54	1693.54	6.90E+00	8.49	4.50E-03	3.71E-04
	55	1732.80	2.57E+01	16.00	4.43E-03	3.62E-04
	56	1765.25	6.63E+01	21.35	4.37E-03	3.54E-04
	57	1817.69	5.79E+00	5.85	4.28E-03	3.42E-04
	58	1847.96	9.91E+00	10.58	4.23E-03	3.38E-04
	59	1920.51	8.50E+00	9.62	4.12E-03	3.38E-04
	60	2017.51	5.22E+00	7.78	3.98E-03	3.38E-04
	61	2104.77	6.88E+00	9.85	3.86E-03	3.38E-04
	62	2204.89	1.60E+01	8.00	3.74E-03	3.38E-04
	63	2355.29	7.72E+00	6.95	3.56E-03	3.38E-04
	64	2471.32	5.63E+00	7.07	3.44E-03	3.38E-04
	65	2615.43	1.02E+02	20.20	3.31E-03	3.38E-04
	66	3907.11	5.00E+00	4.47	2.43E-03	3.38E-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 1707091-19

HTC-A08-BKGD02-3642-01

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 8/24/2017 2:15:39PM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000055573.CNF

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	1	31.59	5.33E+01	49.91			5.33E+01	4.99E+01
	2	62.87	2.26E+02	117.21	8.94E+01	1.41E+01	1.37E+02	1.18E+02
M	3	74.56	3.10E+02	90.85			3.10E+02	9.08E+01
m	4	77.26	4.40E+02	95.51	7.20E+00	1.47E+00	4.33E+02	9.55E+01
	5	92.44	2.81E+02	111.19	1.38E+02	1.72E+01	1.43E+02	1.13E+02
	6	185.41	1.88E+02	90.83	5.22E+01	7.59E+00	1.35E+02	9.11E+01
	7	208.29	6.27E+01	58.95			6.27E+01	5.89E+01
M	8	238.58	7.26E+02	69.68	2.13E+01	6.33E+00	7.04E+02	7.00E+01
m	9	241.74	1.59E+02	70.02			1.59E+02	7.00E+01
	10	269.91	4.47E+01	45.35	1.23E+00	4.98E+00	4.35E+01	4.56E+01
M	11	295.33	2.43E+02	46.78			2.43E+02	4.68E+01
m	12	300.72	4.49E+01	43.54			4.49E+01	4.35E+01
	13	328.47	4.82E+01	43.85			4.82E+01	4.38E+01
	14	338.54	1.90E+02	60.67			1.90E+02	6.07E+01
	15	351.71	3.67E+02	63.10	5.79E+00	4.49E+00	3.61E+02	6.33E+01
	16	405.07	2.74E+01	30.44			2.74E+01	3.04E+01
	17	411.05	4.62E+01	48.56			4.62E+01	4.86E+01
	18	462.37	8.34E+01	52.76			8.34E+01	5.28E+01
	19	510.76	1.53E+02	59.90	7.28E+01	5.30E+00	8.07E+01	6.01E+01
	20	517.62	2.10E+01	26.72			2.10E+01	2.67E+01
M	21	579.19	1.68E+01	17.20			1.68E+01	1.72E+01
m	22	583.31	2.58E+02	44.27	2.72E+00	3.05E+00	2.55E+02	4.44E+01
m	23	588.93	2.03E+01	28.84			2.03E+01	2.88E+01
	24	610.07	3.42E+02	75.96	6.35E+00	4.02E+00	3.35E+02	7.61E+01
	25	728.02	7.79E+01	44.89			7.79E+01	4.49E+01
	26	756.91	4.51E+01	46.85			4.51E+01	4.69E+01
	27	769.26	5.46E+01	29.53			5.46E+01	2.95E+01
	28	795.48	2.87E+01	32.81			2.87E+01	3.28E+01
M	29	836.55	3.60E+01	20.09			3.60E+01	2.01E+01
m	30	841.10	2.70E+01	29.36			2.70E+01	2.94E+01
	31	870.61	1.85E+01	23.02			1.85E+01	2.30E+01
	32	911.52	1.71E+02	44.77	5.31E+00	3.00E+00	1.66E+02	4.49E+01
	33	935.21	2.01E+01	18.21			2.01E+01	1.82E+01
M	34	965.48	3.24E+01	28.13			3.24E+01	2.81E+01
m	35	969.44	7.25E+01	30.25			7.25E+01	3.03E+01
	36	1009.96	2.43E+01	16.88			2.43E+01	1.69E+01
	37	1094.93	2.28E+01	23.83			2.28E+01	2.38E+01
	38	1120.72	9.98E+01	37.85			9.98E+01	3.78E+01
	39	1189.29	2.17E+01	24.72			2.17E+01	2.47E+01
	40	1254.54	1.25E+01	14.76			1.25E+01	1.48E+01
	41	1352.12	1.30E+01	13.11			1.30E+01	1.31E+01
	42	1367.20	1.38E+01	16.49			1.38E+01	1.65E+01
	43	1376.60	2.33E+01	27.02			2.33E+01	2.70E+01
	44	1409.14	1.24E+01	15.36			1.24E+01	1.54E+01

Analysis Report for 1707091-19

HTC-A08-BKGD02-3642-01

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
M	45	1461.47	1.04E+03	66.02	8.09E+00	2.23E+00	1.03E+03	6.61E+01
m	46	1465.82	3.51E+01	52.35			3.51E+01	5.23E+01
	47	1504.59	1.24E+01	9.54			1.24E+01	9.54E+00
	48	1509.84	1.00E+01	6.32			1.00E+01	6.32E+00
	49	1566.95	6.22E+00	7.35			6.22E+00	7.35E+00
	50	1589.66	2.55E+01	18.55			2.55E+01	1.85E+01
	51	1631.50	7.45E+00	7.92			7.45E+00	7.92E+00
	52	1638.20	6.50E+00	6.65			6.50E+00	6.65E+00
	53	1661.44	1.12E+01	11.52			1.12E+01	1.15E+01
	54	1693.54	6.90E+00	8.49			6.90E+00	8.49E+00
	55	1732.80	2.57E+01	16.00			2.57E+01	1.60E+01
	56	1765.25	6.63E+01	21.35			6.63E+01	2.14E+01
	57	1817.69	5.79E+00	5.85			5.79E+00	5.85E+00
	58	1847.96	9.91E+00	10.58	1.22E+00	1.50E+00	8.68E+00	1.07E+01
	59	1920.51	8.50E+00	9.62			8.50E+00	9.62E+00
	60	2017.51	5.22E+00	7.78			5.22E+00	7.78E+00
	61	2104.77	6.88E+00	9.85			6.88E+00	9.85E+00
	62	2204.89	1.60E+01	8.00			1.60E+01	8.00E+00
	63	2355.29	7.72E+00	6.95			7.72E+00	6.95E+00
	64	2471.32	5.63E+00	7.07			5.63E+00	7.07E+00
	65	2615.43	1.02E+02	20.20	5.63E+00	1.38E+00	9.64E+01	2.02E+01
	66	3907.11	5.00E+00	4.47			5.00E+00	4.47E+00

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

AREA CORRECTION REPORT
REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 8/24/2017 2:15:39PM

Ref. Peak Energy : 0.00 Reference Date :
Peak Ratio : 0.00 Uncertainty : 0.00
Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000055573.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	31.59	5.33E+01	49.91			5.33E+01	4.99E+01
	2	62.87	2.26E+02	117.21	8.94E+01	1.41E+01	1.37E+02	1.18E+02
M	3	74.56	3.10E+02	90.85			3.10E+02	9.08E+01
m	4	77.26	4.40E+02	95.51	7.20E+00	1.47E+00	4.33E+02	9.55E+01
	5	92.44	2.81E+02	111.19	1.38E+02	1.72E+01	1.43E+02	1.13E+02
	6	185.41	1.88E+02	90.83	5.22E+01	7.59E+00	1.35E+02	9.11E+01

Analysis Report for 1707091-19

HTC-A08-BKGD02-3642-01

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	7	208.29	6.27E+01	58.95			6.27E+01	5.89E+01
M	8	238.58	7.26E+02	69.68	2.13E+01	6.33E+00	7.04E+02	7.00E+01
m	9	241.74	1.59E+02	70.02			1.59E+02	7.00E+01
	10	269.91	4.47E+01	45.35	1.23E+00	4.98E+00	4.35E+01	4.56E+01
M	11	295.33	2.43E+02	46.78			2.43E+02	4.68E+01
m	12	300.72	4.49E+01	43.54			4.49E+01	4.35E+01
	13	328.47	4.82E+01	43.85			4.82E+01	4.38E+01
	14	338.54	1.90E+02	60.67			1.90E+02	6.07E+01
	15	351.71	3.67E+02	63.10	5.79E+00	4.49E+00	3.61E+02	6.33E+01
	16	405.07	2.74E+01	30.44			2.74E+01	3.04E+01
	17	411.05	4.62E+01	48.56			4.62E+01	4.86E+01
	18	462.37	8.34E+01	52.76			8.34E+01	5.28E+01
	19	510.76	1.53E+02	59.90	7.28E+01	5.30E+00	8.07E+01	6.01E+01
	20	517.62	2.10E+01	26.72			2.10E+01	2.67E+01
M	21	579.19	1.68E+01	17.20			1.68E+01	1.72E+01
m	22	583.31	2.58E+02	44.27	2.72E+00	3.05E+00	2.55E+02	4.44E+01
m	23	588.93	2.03E+01	28.84			2.03E+01	2.88E+01
	24	610.07	3.42E+02	75.96	6.35E+00	4.02E+00	3.35E+02	7.61E+01
	25	728.02	7.79E+01	44.89			7.79E+01	4.49E+01
	26	756.91	4.51E+01	46.85			4.51E+01	4.69E+01
	27	769.26	5.46E+01	29.53			5.46E+01	2.95E+01
	28	795.48	2.87E+01	32.81			2.87E+01	3.28E+01
M	29	836.55	3.60E+01	20.09			3.60E+01	2.01E+01
m	30	841.10	2.70E+01	29.36			2.70E+01	2.94E+01
	31	870.61	1.85E+01	23.02			1.85E+01	2.30E+01
	32	911.52	1.71E+02	44.77	5.31E+00	3.00E+00	1.66E+02	4.49E+01
	33	935.21	2.01E+01	18.21			2.01E+01	1.82E+01
M	34	965.48	3.24E+01	28.13			3.24E+01	2.81E+01
m	35	969.44	7.25E+01	30.25			7.25E+01	3.03E+01
	36	1009.96	2.43E+01	16.88			2.43E+01	1.69E+01
	37	1094.93	2.28E+01	23.83			2.28E+01	2.38E+01
	38	1120.72	9.98E+01	37.85			9.98E+01	3.78E+01
	39	1189.29	2.17E+01	24.72			2.17E+01	2.47E+01
	40	1254.54	1.25E+01	14.76			1.25E+01	1.48E+01
	41	1352.12	1.30E+01	13.11			1.30E+01	1.31E+01
	42	1367.20	1.38E+01	16.49			1.38E+01	1.65E+01
	43	1376.60	2.33E+01	27.02			2.33E+01	2.70E+01
	44	1409.14	1.24E+01	15.36			1.24E+01	1.54E+01
M	45	1461.47	1.04E+03	66.02	8.09E+00	2.23E+00	1.03E+03	6.61E+01
m	46	1465.82	3.51E+01	52.35			3.51E+01	5.23E+01
	47	1504.59	1.24E+01	9.54			1.24E+01	9.54E+00
	48	1509.84	1.00E+01	6.32			1.00E+01	6.32E+00
	49	1566.95	6.22E+00	7.35			6.22E+00	7.35E+00
	50	1589.66	2.55E+01	18.55			2.55E+01	1.85E+01
	51	1631.50	7.45E+00	7.92			7.45E+00	7.92E+00
	52	1638.20	6.50E+00	6.65			6.50E+00	6.65E+00
	53	1661.44	1.12E+01	11.52			1.12E+01	1.15E+01
	54	1693.54	6.90E+00	8.49			6.90E+00	8.49E+00
	55	1732.80	2.57E+01	16.00			2.57E+01	1.60E+01
	56	1765.25	6.63E+01	21.35			6.63E+01	2.14E+01
	57	1817.69	5.79E+00	5.85			5.79E+00	5.85E+00
	58	1847.96	9.91E+00	10.58	1.22E+00	1.50E+00	8.68E+00	1.07E+01
	59	1920.51	8.50E+00	9.62			8.50E+00	9.62E+00
	60	2017.51	5.22E+00	7.78			5.22E+00	7.78E+00

Analysis Report for 1707091-19

HTC-A08-BKGD02-3642-01

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
61	2104.77	6.88E+00	9.85			6.88E+00	9.85E+00
62	2204.89	1.60E+01	8.00			1.60E+01	8.00E+00
63	2355.29	7.72E+00	6.95			7.72E+00	6.95E+00
64	2471.32	5.63E+00	7.07			5.63E+00	7.07E+00
65	2615.43	1.02E+02	20.20	5.63E+00	1.38E+00	9.64E+01	2.02E+01
66	3907.11	5.00E+00	4.47			5.00E+00	4.47E+00

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

NUCLIDE IDENTIFICATION REPORT

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

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.933	1460.81	*	10.67	1.81E+01	1.96E+00
TL-208	0.838	583.14	*	30.22	7.93E-01	1.60E-01
		860.37		4.48		
		2614.66	*	35.85	7.62E-01	1.78E-01
PB-211	0.305	404.84	*	2.90	6.73E-01	7.51E-01
		831.96		2.90		
BI-212	0.674	727.17	*	11.80	7.35E-01	4.31E-01
		1620.62		2.75		
PB-212	0.995	238.63	*	44.60	7.84E-01	1.00E-01
		300.09	*	3.41	7.60E-01	7.39E-01
BI-214	0.924	609.31	*	46.30	7.04E-01	1.76E-01
		1120.29	*	15.10	1.02E+00	3.96E-01
		1764.49	*	15.80	8.99E-01	2.98E-01
		2204.22	*	4.98	8.05E-01	4.09E-01
PB-214	0.995	295.21	*	19.19	7.22E-01	1.51E-01
		351.92	*	37.19	6.25E-01	1.22E-01
RA-224	0.911	240.98	*	3.95	2.02E+00	9.02E-01
RA-226	0.901	186.21	*	3.28	1.78E+00	3.47E+00
AC-228	0.977	338.32	*	11.40	1.04E+00	3.45E-01
		911.07	*	27.70	7.92E-01	2.24E-01
		969.11	*	16.60	6.05E-01	2.57E-01
TH-234	0.973	63.29	*	3.80	1.25E+00	1.08E+00
AM-243	0.998	74.67	*	66.00	1.60E-01	4.89E-02

Analysis Report for 1707091-19

HTC-A08-BKGD02-3642-01

* = 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 : 8/24/2017 2:15:39PM
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	31.59	1.48099E-02	46.81		
m	4	77.26	1.20336E-01	11.02		
	5	92.44	3.97643E-02	39.30	Tol.	GA-67
	7	208.29	1.74268E-02	46.98	Tol.	GA-67
	10	269.91	1.20709E-02	52.50		
	13	328.47	1.33801E-02	45.51	Tol.	LA-140
	17	411.05	1.28355E-02	52.54	Tol.	HO-166M
	18	462.37	2.31663E-02	31.63		
	19	510.76	2.24133E-02	37.26		
	20	517.62	5.83333E-03	63.62		
M	21	579.19	4.66091E-03	51.27		
m	23	588.93	5.63234E-03	71.13		
	26	756.91	1.25314E-02	51.93	Sum	
	27	769.26	1.51705E-02	27.04	Sum	
	28	795.48	7.98066E-03	57.09	Sum	
M	29	836.55	9.99130E-03	27.93		
m	30	841.10	7.49346E-03	54.41		
	31	870.61	5.13889E-03	62.22	Tol.	NB-94
	33	935.21	5.57920E-03	45.34	Sum	
M	34	965.48	9.00747E-03	43.37		
	36	1009.96	6.76257E-03	34.67		
	37	1094.93	6.33961E-03	52.21		
	39	1189.29	6.03416E-03	56.89	Tol.	TA-182
	40	1254.54	3.48566E-03	58.80	S-Esc	
	41	1352.12	3.61111E-03	50.44		
	42	1367.20	3.83247E-03	59.77		
	43	1376.60	6.45833E-03	58.11		
	44	1409.14	3.45679E-03	61.72		
m	46	1465.82	9.75483E-03	74.53		
	47	1504.59	3.45486E-03	38.35		
	48	1509.84	2.77778E-03	31.62		
	49	1566.95	1.72840E-03	59.05		
	50	1589.66	7.09688E-03	36.30		
	51	1631.50	2.07071E-03	53.13		

Analysis Report for 1707091-19

HTC-A08-BKGD02-3642-01

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
52	1638.20	1.80556E-03	51.17		
53	1661.44	3.10957E-03	51.46		
54	1693.54	1.91667E-03	61.49	S-Esc	
55	1732.80	7.12674E-03	31.18		
57	1817.69	1.60714E-03	50.58		
58	1847.96	2.41163E-03	61.56	Sum	
59	1920.51	2.36111E-03	56.57		
60	2017.51	1.45062E-03	74.47		
61	2104.77	1.91239E-03	71.53	S-Esc	
63	2355.29	2.14506E-03	44.98		
64	2471.32	1.56250E-03	62.85		
66	3907.11	1.38889E-03	44.72		

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

NUCLIDE IDENTIFICATION REPORT

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

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.93	1460.81	*	10.67	1.81E+01	1.96E+00
TL-208	0.83	583.14	*	30.22	7.93E-01	1.60E-01
		860.37		4.48		
		2614.66	*	35.85	7.62E-01	1.78E-01
PB-211	0.30	404.84	*	2.90	6.73E-01	7.51E-01
		831.96		2.90		
BI-212	0.67	727.17	*	11.80	7.35E-01	4.31E-01
		1620.62		2.75		
PB-212	0.99	238.63	*	44.60	7.84E-01	1.00E-01
		300.09	*	3.41	7.60E-01	7.39E-01
BI-214	0.92	609.31	*	46.30	7.04E-01	1.76E-01
		1120.29	*	15.10	1.02E+00	3.96E-01
		1764.49	*	15.80	8.99E-01	2.98E-01
		2204.22	*	4.98	8.05E-01	4.09E-01
PB-214	0.99	295.21	*	19.19	7.22E-01	1.51E-01
		351.92	*	37.19	6.25E-01	1.22E-01

Analysis Report for 1707091-19

HTC-A08-BKGD02-3642-01

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
RA-224	0.91	240.98	*	3.95	2.02E+00	9.02E-01
RA-226	0.90	186.21	*	3.28	1.78E+00	3.47E+00
AC-228	0.97	338.32	*	11.40	1.04E+00	3.45E-01
		911.07	*	27.70	7.92E-01	2.24E-01
		969.11	*	16.60	6.05E-01	2.57E-01
TH-234	0.97	63.29	*	3.80	1.25E+00	1.08E+00
AM-243	0.99	74.67	*	66.00	1.60E-01	4.89E-02

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

INTERFERENCE CORRECTED REPORT

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
K-40	0.933	1.81E+01	1.96E+00	
TL-208	0.838	7.79E-01	1.19E-01	
PB-211	0.305	6.73E-01	7.51E-01	
BI-212	0.674	7.35E-01	4.31E-01	
PB-212	0.995	7.84E-01	9.95E-02	
BI-214	0.924	7.90E-01	1.34E-01	
PB-214	0.995	6.63E-01	9.49E-02	
RA-224	0.911	2.02E+00	9.02E-01	
RA-226	0.901	1.78E+00	3.47E+00	
AC-228	0.977	7.75E-01	1.52E-01	
TH-234	0.973	1.25E+00	1.08E+00	
AM-243	0.998	1.60E-01	4.89E-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 1707091-19

HTC-A08-BKGD02-3642-01

UNIDENTIFIED PEAKS

Peak Locate Performed on : 8/24/2017 2:15:39PM
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	31.59	1.48099E-02	46.81		
m	4	77.26	1.20336E-01	11.02		
	5	92.44	3.97643E-02	39.30	Tol.	GA-67
	7	208.29	1.74268E-02	46.98	Tol.	GA-67
	10	269.91	1.20709E-02	52.50		
	13	328.47	1.33801E-02	45.51	Tol.	LA-140
	17	411.05	1.28355E-02	52.54	Tol.	HO-166M
	18	462.37	2.31663E-02	31.63		
	19	510.76	2.24133E-02	37.26		
	20	517.62	5.83333E-03	63.62		
M	21	579.19	4.66091E-03	51.27		
m	23	588.93	5.63234E-03	71.13		
	26	756.91	1.25314E-02	51.93	Sum	
	27	769.26	1.51705E-02	27.04	Sum	
	28	795.48	7.98066E-03	57.09	Sum	
M	29	836.55	9.99130E-03	27.93		
m	30	841.10	7.49346E-03	54.41		
	31	870.61	5.13889E-03	62.22	Tol.	NB-94
	33	935.21	5.57920E-03	45.34	Sum	
M	34	965.48	9.00747E-03	43.37		
	36	1009.96	6.76257E-03	34.67		
	37	1094.93	6.33961E-03	52.21		
	39	1189.29	6.03416E-03	56.89	Tol.	TA-182
	40	1254.54	3.48566E-03	58.80	S-Esc	
	41	1352.12	3.61111E-03	50.44		
	42	1367.20	3.83247E-03	59.77		
	43	1376.60	6.45833E-03	58.11		
	44	1409.14	3.45679E-03	61.72		
m	46	1465.82	9.75483E-03	74.53		
	47	1504.59	3.45486E-03	38.35		
	48	1509.84	2.77778E-03	31.62		
	49	1566.95	1.72840E-03	59.05		
	50	1589.66	7.09688E-03	36.30		
	51	1631.50	2.07071E-03	53.13		
	52	1638.20	1.80556E-03	51.17		

Analysis Report for 1707091-19

HTC-A08-BKGD02-3642-01

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
53	1661.44	3.10957E-03	51.46		
54	1693.54	1.91667E-03	61.49	S-Esc	
55	1732.80	7.12674E-03	31.18		
57	1817.69	1.60714E-03	50.58		
58	1847.96	2.41163E-03	61.56	Sum	
59	1920.51	2.36111E-03	56.57		
60	2017.51	1.45062E-03	74.47		
61	2104.77	1.91239E-03	71.53	S-Esc	
63	2355.29	2.14506E-03	44.98		
64	2471.32	1.56250E-03	62.85		
66	3907.11	1.38889E-03	44.72		

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

NUCLIDE MDA REPORT

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

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	BE-7	477.59		10.42	2.76E-01	1.44E+00	1.44E+00
+	NA-22	1274.54		99.94	-3.13E-02	5.93E-02	5.93E-02
+	@ NA-24	1368.53		99.99	1.00E+26	1.00E+26	1.00E+26
	@	2754.09		99.86	1.00E+26		1.00E+26
+	AL-26	1808.65		99.76	5.46E-03	3.96E-02	3.96E-02
+	K-40	1460.81	*	10.67	1.81E+01	7.97E-01	7.97E-01
+	@ AR-41	1293.64		99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88		94.40	1.17E-02	4.47E-02	4.47E-02
		78.34		96.00	8.80E-02		5.59E-02
+	SC-46	889.25		99.98	-5.20E-02	1.11E-01	1.11E-01
		1120.51		99.99	3.34E-01		2.07E-01
+	V-48	983.52		99.98	6.30E-01	4.14E+00	4.14E+00
		1312.10		97.50	-8.31E-02		4.36E+00
+	CR-51	320.08		9.83	1.27E+00	4.97E+00	4.97E+00
+	MN-54	834.83		99.97	2.84E-03	7.10E-02	7.10E-02
+	CO-56	846.75		99.96	-1.67E-02	1.06E-01	1.06E-01
		1037.75		14.03	-5.03E-01		8.57E-01

Analysis Report for 1707091-19

HTC-A08-BKGD02-3642-01

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	CO-56	1238.25	67.00	1.51E-01	1.06E-01	2.84E-01
		1771.40	15.51	-2.69E-01		5.61E-01
		2598.48	16.90	2.71E-02		4.37E-01
+	CO-57	122.06	85.51	3.33E-03	5.40E-02	5.40E-02
		136.48	10.60	-1.18E-01		4.21E-01
+	CO-58	810.76	99.40	-4.24E-03	1.21E-01	1.21E-01
+	FE-59	1099.22	56.50	-2.58E-02	4.47E-01	4.47E-01
		1291.56	43.20	-1.17E-01		5.97E-01
+	CO-60	1173.22	100.00	1.72E-02	5.34E-02	7.50E-02
		1332.49	100.00	1.16E-02		5.34E-02
+	ZN-65	1115.52	50.75	-1.61E-02	1.41E-01	1.41E-01
+	GA-67	93.31	35.70	4.02E+08	2.73E+08	2.73E+08
		208.95	2.24	2.58E+09		3.75E+09
		300.22	16.00	-1.08E+09		5.86E+08
+	SE-75	121.11	16.70	-2.12E-02	1.04E-01	3.75E-01
		136.00	59.20	-2.92E-02		1.04E-01
		264.65	59.80	9.73E-03		1.20E-01
		279.53	25.20	1.54E-01		3.05E-01
		400.65	11.40	6.13E-02		6.77E-01
+	RB-82	776.52	13.00	-1.15E+00	5.65E+00	5.65E+00
+	RB-83	520.41	46.00	1.31E-02	1.99E-01	1.99E-01
		529.64	30.30	7.70E-02		3.33E-01
		552.65	16.40	-1.71E-02		5.65E-01
+	KR-85	513.99	0.43	1.44E+01	1.43E+01	1.43E+01
+	SR-85	513.99	99.27	1.82E-01	1.81E-01	1.81E-01
+	Y-88	898.02	93.40	-2.75E-03	6.42E-02	9.52E-02
		1836.01	99.38	5.19E-03		6.42E-02
+	MO-93	263.06	56.72	1.24E-02	4.35E-02	7.25E-02
		684.67	99.68	3.18E-03		5.06E-02
		1477.11	99.08	-3.07E-03		4.35E-02
+	NB-93M	16.57	9.43	-3.74E-02	3.97E-01	3.97E-01
+	NB-94	702.63	100.00	1.36E-02	4.72E-02	4.72E-02
		871.10	100.00	2.67E-03		4.91E-02
+	NB-95	765.79	99.81	9.67E-02	4.01E-01	4.01E-01
+	NB-95M	235.69	25.00	-2.71E+08	4.92E+07	4.92E+07
+	ZR-95	724.18	43.70	-4.26E-02	2.84E-01	3.44E-01
		756.72	55.30	1.72E-01		2.84E-01
+	MO-99	181.06	6.20	-7.83E+10	4.28E+10	6.44E+10
		739.58	12.80	9.08E+09		4.28E+10
		778.00	4.50	4.74E+10		1.25E+11
+	RU-103	497.08	89.00	5.08E-03	2.83E-01	2.83E-01
+	RU-106	621.84	9.80	1.18E-03	5.46E-01	5.46E-01
+	AG-108M	433.93	89.90	3.47E-03	4.40E-02	4.40E-02
		614.37	90.40	-3.18E-01		5.95E-02
		722.95	90.50	-1.16E-02		4.93E-02
+	CD-109	88.03	3.72	4.73E-01	1.42E+00	1.42E+00
+	AG-110M	657.75	93.14	2.42E-02	6.75E-02	6.75E-02
		677.61	10.53	5.63E-02		6.14E-01

Analysis Report for 1707091-19

HTC-A08-BKGD02-3642-01

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	AG-110M	706.67	16.46	2.94E-03	6.75E-02	3.72E-01
		763.93	21.98	-2.80E-01		2.84E-01
		884.67	71.63	2.36E-02		9.60E-02
		1384.27	23.94	3.41E-02		1.94E-01
+	CD-113M	263.70	0.02	-3.96E+01	1.75E+02	1.75E+02
+	SN-113	255.12	1.93	2.18E-01	1.19E-01	3.41E+00
		391.69	64.90	6.90E-03		1.19E-01
+	TE123M	159.00	84.10	7.78E-03	7.56E-02	7.56E-02
+	SB-124	602.71	97.87	8.19E-03	1.41E-01	1.41E-01
		645.85	7.26	-1.66E-01		1.96E+00
		722.78	11.10	-3.03E-01		1.28E+00
		1691.02	49.00	-2.03E-02		2.26E-01
+	I-125	35.49	6.49	9.89E-01	1.80E+00	1.80E+00
+	SB-125	176.33	6.89	-1.54E-02	1.37E-01	5.16E-01
		427.89	29.33	2.17E-03		1.37E-01
		463.38	10.35	3.97E-01		4.98E-01
		600.56	17.80	5.79E-03		2.59E-01
		635.90	11.32	-2.94E-01		3.91E-01
+	SB-126	414.70	83.30	-4.39E-01	1.26E+01	1.38E+01
		666.33	99.60	-4.83E+00		1.26E+01
		695.00	99.60	-2.67E+00		1.31E+01
		720.50	53.80	1.17E+00		2.44E+01
+	SN-126	87.57	37.00	4.09E-02	1.19E-01	1.19E-01
+	SB-127	473.00	25.00	2.30E+06	1.10E+07	1.36E+07
		685.20	35.70	6.93E+05		1.10E+07
		783.80	14.70	4.71E+06		2.68E+07
+	I-129	29.78	57.00	-6.04E-03	7.08E-02	7.08E-02
		33.60	13.20	2.87E-02		2.88E-01
		39.58	7.52	1.36E-01		4.92E-01
+	I-131	284.30	6.05	-2.37E+03	2.79E+02	4.00E+03
		364.48	81.20	-1.95E+02		2.79E+02
		636.97	7.26	-4.18E+02		3.63E+03
		722.89	1.80	-3.55E+03		1.50E+04
+	TE-132	49.72	13.10	-9.38E+08	8.59E+07	5.84E+08
		228.16	88.00	-5.05E+06		8.59E+07
+	BA-133	81.00	33.00	-2.86E-01	8.79E-02	1.27E-01
		302.84	17.80	1.90E-01		2.49E-01
		356.01	60.00	8.24E-03		8.79E-02
+	@ I-133	529.87	86.30	1.00E+26	1.00E+26	1.00E+26
+	XE-133	81.00	38.00	-1.54E+05	6.83E+04	6.83E+04
+	CS-134	563.23	8.38	2.20E-03	5.35E-02	5.61E-01
		569.32	15.43	6.64E-02		3.17E-01
		604.70	97.60	-2.86E-03		5.35E-02
		795.84	85.40	6.67E-02		7.14E-02
		801.93	8.73	3.02E-02		6.06E-01
+	CS-135	268.24	16.00	2.04E-03	2.67E-01	2.67E-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

Analysis Report for 1707091-19

HTC-A08-BKGD02-3642-01

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	CS-136	153.22	7.46	5.25E+01	8.48E+00	1.00E+02
		163.89	4.61	8.64E+01		1.65E+02
		176.55	13.56	-1.49E+00		5.01E+01
		273.65	12.66	-1.45E+01		6.72E+01
		340.57	48.50	5.16E+01		2.44E+01
		818.50	99.70	-3.45E+00		8.48E+00
		1048.07	79.60	-2.47E+00		1.32E+01
		1235.34	19.70	4.15E+01		7.85E+01
+	CS-137	661.65	85.12	8.94E-03	5.61E-02	5.61E-02
+	LA-138	788.74	34.00	5.30E-02	7.00E-02	1.42E-01
		1435.80	66.00	3.03E-02		7.00E-02
+	CE-139	165.85	80.35	-1.07E-02	7.43E-02	7.43E-02
+	BA-140	162.64	6.70	1.02E+02	4.34E+01	1.35E+02
		304.84	4.50	-1.92E+01		2.12E+02
		423.70	3.20	6.91E+01		2.82E+02
		437.55	2.00	9.13E+01		5.08E+02
		537.32	25.00	-9.32E+00		4.34E+01
+	LA-140	328.77	20.50	2.89E+01	1.06E+01	5.00E+01
		487.03	45.50	4.00E+00		2.15E+01
		815.85	23.50	1.85E+00		4.31E+01
		1596.49	95.49	-4.63E-01		1.06E+01
+	CE-141	145.44	48.40	-6.09E-03	6.26E-01	6.26E-01
+	@ CE-143	57.36	11.80	1.00E+26	1.00E+26	1.00E+26
	@	293.26	42.00	1.00E+26		1.00E+26
	@	664.55	5.20	1.00E+26		1.00E+26
+	CE-144	133.54	10.80	-1.90E-01	4.00E-01	4.00E-01
+	PM-144	476.78	42.00	5.94E-02	5.68E-02	1.21E-01
		618.01	98.60	-1.73E-04		6.09E-02
		696.49	99.49	-1.14E-02		5.68E-02
+	PM-145	36.85	21.70	1.72E-03	9.62E-02	1.71E-01
		37.36	39.70	3.66E-02		9.62E-02
		42.30	15.10	-3.53E-01		2.39E-01
		72.40	2.31	-5.17E-01		2.16E+00
+	PM-146	453.90	39.94	2.62E-02	1.05E-01	1.05E-01
		735.90	14.01	-9.96E-02		2.96E-01
		747.13	13.10	9.66E-02		3.66E-01
+	ND-147	91.11	28.90	1.58E+02	9.82E+01	9.82E+01
		531.02	13.10	1.66E+02		2.10E+02
+	PM-149	285.90	3.10	-1.82E+13	7.32E+13	7.32E+13
+	EU-152	121.78	20.50	-9.77E-03	1.73E-01	1.73E-01
		244.69	5.40	-4.65E-01		7.26E-01
		344.27	19.13	1.24E-02		2.17E-01
		778.89	9.20	3.96E-02		5.35E-01
		964.01	10.40	-6.56E-01		6.59E-01
		1085.78	7.22	-2.79E-02		8.20E-01
		1112.02	9.60	-3.63E-02		5.08E-01
		1407.95	14.94	1.17E-01		3.32E-01
+	GD-153	97.43	31.30	3.68E-02	1.59E-01	1.59E-01
		103.18	22.20	-1.93E-02		2.08E-01

Analysis Report for 1707091-19

HTC-A08-BKGD02-3642-01

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	EU-154	123.07		40.50	2.13E-02	9.09E-02	9.09E-02
		723.30		19.70	-5.46E-02		2.31E-01
		873.19		11.50	-1.50E-02		4.30E-01
		996.32		10.30	-2.82E-01		4.99E-01
		1004.76		17.90	1.02E-01		3.27E-01
		1274.45		35.50	-8.35E-02		1.59E-01
+	EU-155	86.50		30.90	5.09E-02	1.48E-01	1.48E-01
		105.30		20.70	-1.23E-01		1.71E-01
+	EU-156	811.77		10.40	-1.11E+01	4.24E+01	4.24E+01
		1153.47		7.20	-3.53E+01		8.97E+01
		1230.71		8.90	-1.55E+01		7.28E+01
+	HO-166M	184.41		72.60	8.32E-02	5.93E-02	5.93E-02
		280.45		29.60	8.53E-02		1.44E-01
		410.94		11.10	1.15E-01		3.90E-01
		711.69		54.10	2.44E-02		8.92E-02
+	TM-171	66.72		0.14	3.68E+00	3.33E+01	3.33E+01
+	HF-172	67.35		5.31	2.29E-01	3.55E-01	8.78E-01
		125.81		11.30	-5.93E-02		3.55E-01
+	LU-172	181.53		20.60	-7.18E+03	3.17E+03	5.90E+03
		900.72		29.81	-1.66E+03		5.21E+03
		1093.66		62.50	2.15E+03		3.17E+03
+	LU-173	100.72		5.24	1.75E-01	2.30E-01	7.91E-01
		272.11		21.20	-2.44E-03		2.30E-01
+	HF-175	343.40		84.00	7.53E-03	1.32E-01	1.32E-01
+	LU-176	88.34		13.30	1.14E-01	4.08E-02	3.42E-01
		201.83		86.00	-8.37E-03		4.11E-02
		306.78		94.00	-1.03E-02		4.08E-02
+	HF-181	133.02		41.70	-2.00E-01	2.20E-01	4.22E-01
		345.85		17.20	7.09E-02		1.23E+00
		482.03		82.80	-1.41E-01		2.20E-01
+	TA-182	67.75		41.20	4.91E-02	1.88E-01	1.88E-01
		1121.30		34.90	8.01E-01		4.80E-01
		1189.05		16.23	7.52E-03		8.30E-01
		1221.41		26.98	3.19E-01		5.18E-01
		1231.02		11.44	-2.21E-01		1.04E+00
+	IR-192	308.46		29.68	-6.42E-02	2.19E-01	3.34E-01
		468.07		48.10	-1.52E-02		2.19E-01
+	HG-203	279.19		77.30	1.25E-01	2.48E-01	2.48E-01
+	TL-204	374.74		94.11	-3.96E-03	4.44E-02	4.44E-02
		899.15		99.16	9.55E-03		4.99E-02
		911.74		91.10	2.82E-01		1.12E-01
+	BI-207	569.67		97.72	1.23E-02	4.61E-02	4.61E-02
		1063.62		74.90	1.76E-02		7.60E-02
+	TL-208	583.14	*	30.22	7.93E-01	8.56E-02	2.91E-01
		860.37		4.48	6.23E-01		1.31E+00
		2614.66	*	35.85	7.62E-01		8.56E-02
+	BI-210M	262.00		45.00	-3.00E-02	8.84E-02	8.84E-02
		300.00		23.00	-6.83E-01		1.95E-01
+	PB-210	46.50		4.25	1.43E+00	9.46E-01	9.46E-01

Analysis Report for 1707091-19

HTC-A08-BKGD02-3642-01

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	PB-211	404.84	*	2.90	6.73E-01	1.22E+00	1.22E+00
		831.96		2.90	2.44E-02		1.72E+00
+	BI-212	727.17	*	11.80	7.35E-01	6.67E-01	6.67E-01
		1620.62		2.75	1.20E+00		1.80E+00
+	PB-212	238.63	*	44.60	7.84E-01	1.88E-01	1.88E-01
		300.09	*	3.41	7.60E-01		2.23E+00
+	BI-214	609.31	*	46.30	7.04E-01	1.36E-01	2.36E-01
		1120.29	*	15.10	1.02E+00		5.68E-01
		1764.49	*	15.80	8.99E-01		3.45E-01
		2204.22	*	4.98	8.05E-01		1.36E-01
+	PB-214	295.21	*	19.19	7.22E-01	1.49E-01	3.88E-01
		351.92	*	37.19	6.25E-01		1.49E-01
+	RN-219	401.80		6.50	-1.14E-01	6.63E-01	6.63E-01
+	RA-223	323.87		3.88	4.28E-01	1.02E+00	1.02E+00
+	RA-224	240.98	*	3.95	2.02E+00	2.13E+00	2.13E+00
+	RA-225	40.00		31.00	-1.83E+00	1.33E+01	1.33E+01
+	RA-226	186.21	*	3.28	1.78E+00	1.94E+00	1.94E+00
+	TH-227	50.10		8.40	-2.79E-01	4.03E-01	4.27E-01
		236.00		11.50	-2.22E+00		4.03E-01
		256.20		6.30	3.40E-01		6.65E-01
+	AC-228	338.32	*	11.40	1.04E+00	3.01E-01	5.03E-01
		911.07	*	27.70	7.92E-01		3.01E-01
		969.11	*	16.60	6.05E-01		6.43E-01
+	TH-230	48.44		16.90	-7.81E-03	2.25E-01	2.25E-01
		62.85		4.60	1.13E+00		9.93E-01
		67.67		0.37	2.97E+00		1.14E+01
+	PA-231	283.67		1.60	-2.57E+00	1.90E+00	2.46E+00
		302.67		2.30	1.45E+00		1.90E+00
+	TH-231	25.64		14.70	-2.41E+00	3.57E-01	3.57E-01
		84.21		6.40	-1.68E-01		6.60E-01
+	PA-233	311.98		38.60	6.70E-02	1.34E+00	1.34E+00
+	PA-234	131.20		20.40	-3.91E-04	1.70E-01	1.70E-01
		733.99		8.80	6.06E-02		4.94E-01
		946.00		12.00	1.92E-02		4.18E-01
+	PA-234M	1001.03		0.92	6.60E+00	6.75E+00	6.75E+00
+	TH-234	63.29	*	3.80	1.25E+00	1.76E+00	1.76E+00
+	U-235	143.76		10.50	3.09E-02	3.38E-01	3.38E-01
		163.35		4.70	4.13E-01		7.91E-01
		205.31		4.70	-1.24E-01		7.97E-01
+	NP-237	86.50		12.60	1.20E-01	3.48E-01	3.48E-01
+	NP-239	106.10		22.70	-3.52E+10	1.27E+12	1.27E+12
		228.18		10.70	-1.58E+11		2.69E+12
		277.60		14.10	1.31E+12		2.51E+12
+	AM-241	59.54		35.90	-8.07E-02	1.10E-01	1.10E-01
+	AM-243	74.67	*	66.00	1.60E-01	1.58E-01	1.58E-01
+	CM-243	209.75		3.29	4.30E-01	3.10E-01	1.20E+00
		228.14		10.60	-1.95E-02		3.33E-01

Analysis Report for 1707091-19

HTC-A08-BKGD02-3642-01

Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
CM-243	277.60	14.00	1.61E-01	3.10E-01	3.10E-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	1.44E+00	1.44E+00	2.76E-01	6.81E-01
	NA-22	1274.54		99.94	5.93E-02	5.93E-02	-3.13E-02	2.72E-02
@	NA-24	1368.53		99.99	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		2754.09		99.86	1.00E+26		1.00E+26	1.00E+20
	AL-26	1808.65		99.76	3.96E-02	3.96E-02	5.46E-03	1.68E-02
+	K-40	1460.81	*	10.67	7.97E-01	7.97E-01	1.81E+01	3.75E-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	4.47E-02	4.47E-02	1.17E-02	2.18E-02
		78.34		96.00	5.59E-02		8.80E-02	2.75E-02
	SC-46	889.25		99.98	1.11E-01	1.11E-01	-5.20E-02	5.16E-02
		1120.51		99.99	2.07E-01		3.34E-01	9.86E-02
	V-48	983.52		99.98	4.14E+00	4.14E+00	6.30E-01	1.92E+00
		1312.10		97.50	4.36E+00		-8.31E-02	1.99E+00
	CR-51	320.08		9.83	4.97E+00	4.97E+00	1.27E+00	2.38E+00
	MN-54	834.83		99.97	7.10E-02	7.10E-02	2.84E-03	3.34E-02
	CO-56	846.75		99.96	1.06E-01	1.06E-01	-1.67E-02	4.90E-02
		1037.75		14.03	8.57E-01		-5.03E-01	3.94E-01
		1238.25		67.00	2.84E-01		1.51E-01	1.34E-01
		1771.40		15.51	5.61E-01		-2.69E-01	2.35E-01
		2598.48		16.90	4.37E-01		2.71E-02	1.64E-01
	CO-57	122.06		85.51	5.40E-02	5.40E-02	3.33E-03	2.63E-02
		136.48		10.60	4.21E-01		-1.18E-01	2.04E-01
	CO-58	810.76		99.40	1.21E-01	1.21E-01	-4.24E-03	5.59E-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)
FE-59	1099.22	56.50	4.47E-01	4.47E-01	-2.58E-02	2.06E-01
	1291.56	43.20	5.97E-01		-1.17E-01	2.73E-01
CO-60	1173.22	100.00	7.50E-02	5.34E-02	1.72E-02	3.53E-02
	1332.49	100.00	5.34E-02		1.16E-02	2.43E-02
ZN-65	1115.52	50.75	1.41E-01	1.41E-01	-1.61E-02	6.50E-02
GA-67	93.31	35.70	2.73E+08	2.73E+08	4.02E+08	1.34E+08
	208.95	2.24	3.75E+09		2.58E+09	1.81E+09
	300.22	16.00	5.86E+08		-1.08E+09	2.83E+08
SE-75	121.11	16.70	3.75E-01	1.04E-01	-2.12E-02	1.82E-01
	136.00	59.20	1.04E-01		-2.92E-02	5.07E-02
	264.65	59.80	1.20E-01		9.73E-03	5.80E-02
	279.53	25.20	3.05E-01		1.54E-01	1.47E-01
	400.65	11.40	6.77E-01		6.13E-02	3.24E-01
RB-82	776.52	13.00	5.65E+00	5.65E+00	-1.15E+00	2.64E+00
RB-83	520.41	46.00	1.99E-01	1.99E-01	1.31E-02	9.36E-02
	529.64	30.30	3.33E-01		7.70E-02	1.58E-01
	552.65	16.40	5.65E-01		-1.71E-02	2.66E-01
KR-85	513.99	0.43	1.43E+01	1.43E+01	1.44E+01	6.89E+00
SR-85	513.99	99.27	1.81E-01	1.81E-01	1.82E-01	8.71E-02
Y-88	898.02	93.40	9.52E-02	6.42E-02	-2.75E-03	4.40E-02
	1836.01	99.38	6.42E-02		5.19E-03	2.63E-02
MO-93	263.06	56.72	7.25E-02	4.35E-02	1.24E-02	3.50E-02
	684.67	99.68	5.06E-02		3.18E-03	2.38E-02
	1477.11	99.08	4.35E-02		-3.07E-03	1.91E-02
NB-93M	16.57	9.43	3.97E-01	3.97E-01	-3.74E-02	1.86E-01
NB-94	702.63	100.00	4.72E-02	4.72E-02	1.36E-02	2.21E-02
	871.10	100.00	4.91E-02		2.67E-03	2.28E-02
NB-95	765.79	99.81	4.01E-01	4.01E-01	9.67E-02	1.89E-01
NB-95M	235.69	25.00	4.92E+07	4.92E+07	-2.71E+08	2.39E+07
ZR-95	724.18	43.70	3.44E-01	2.84E-01	-4.26E-02	1.62E-01
	756.72	55.30	2.84E-01		1.72E-01	1.34E-01
MO-99	181.06	6.20	6.44E+10	4.28E+10	-7.83E+10	3.11E+10
	739.58	12.80	4.28E+10		9.08E+09	2.01E+10
	778.00	4.50	1.25E+11		4.74E+10	5.85E+10
RU-103	497.08	89.00	2.83E-01	2.83E-01	5.08E-03	1.34E-01
RU-106	621.84	9.80	5.46E-01	5.46E-01	1.18E-03	2.57E-01
AG-108M	433.93	89.90	4.40E-02	4.40E-02	3.47E-03	2.09E-02
	614.37	90.40	5.95E-02		-3.18E-01	2.83E-02
	722.95	90.50	4.93E-02		-1.16E-02	2.30E-02
CD-109	88.03	3.72	1.42E+00	1.42E+00	4.73E-01	6.97E-01
AG-110M	657.75	93.14	6.75E-02	6.75E-02	2.42E-02	3.18E-02
	677.61	10.53	6.14E-01		5.63E-02	2.89E-01
	706.67	16.46	3.72E-01		2.94E-03	1.74E-01
	763.93	21.98	2.84E-01		-2.80E-01	1.33E-01
	884.67	71.63	9.60E-02		2.36E-02	4.48E-02
	1384.27	23.94	1.94E-01		3.41E-02	8.34E-02
CD-113M	263.70	0.02	1.75E+02	1.75E+02	-3.96E+01	8.41E+01
SN-113	255.12	1.93	3.41E+00	1.19E-01	2.18E-01	1.64E+00
	391.69	64.90	1.19E-01		6.90E-03	5.69E-02
TE123M	159.00	84.10	7.56E-02	7.56E-02	7.78E-03	3.66E-02
SB-124	602.71	97.87	1.41E-01	1.41E-01	8.19E-03	6.60E-02
	645.85	7.26	1.96E+00		-1.66E-01	9.21E-01
	722.78	11.10	1.28E+00		-3.03E-01	5.99E-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)
SB-124	1691.02	49.00	2.26E-01	1.41E-01	-2.03E-02	9.47E-02
I-125	35.49	6.49	1.80E+00	1.80E+00	9.89E-01	8.71E-01
SB-125	176.33	6.89	5.16E-01	1.37E-01	-1.54E-02	2.49E-01
	427.89	29.33	1.37E-01		2.17E-03	6.47E-02
	463.38	10.35	4.98E-01		3.97E-01	2.38E-01
	600.56	17.80	2.59E-01		5.79E-03	1.22E-01
	635.90	11.32	3.91E-01		-2.94E-01	1.82E-01
SB-126	414.70	83.30	1.38E+01	1.26E+01	-4.39E-01	6.55E+00
	666.33	99.60	1.26E+01		-4.83E+00	5.89E+00
	695.00	99.60	1.31E+01		-2.67E+00	6.13E+00
	720.50	53.80	2.44E+01		1.17E+00	1.14E+01
SN-126	87.57	37.00	1.19E-01	1.19E-01	4.09E-02	5.84E-02
SB-127	473.00	25.00	1.36E+07	1.10E+07	2.30E+06	6.45E+06
	685.20	35.70	1.10E+07		6.93E+05	5.19E+06
	783.80	14.70	2.68E+07		4.71E+06	1.26E+07
I-129	29.78	57.00	7.08E-02	7.08E-02	-6.04E-03	3.42E-02
	33.60	13.20	2.88E-01		2.87E-02	1.40E-01
	39.58	7.52	4.92E-01		1.36E-01	2.39E-01
I-131	284.30	6.05	4.00E+03	2.79E+02	-2.37E+03	1.93E+03
	364.48	81.20	2.79E+02		-1.95E+02	1.33E+02
	636.97	7.26	3.63E+03		-4.18E+02	1.70E+03
	722.89	1.80	1.50E+04		-3.55E+03	7.00E+03
TE-132	49.72	13.10	5.84E+08	8.59E+07	-9.38E+08	2.84E+08
	228.16	88.00	8.59E+07		-5.05E+06	4.13E+07
BA-133	81.00	33.00	1.27E-01	8.79E-02	-2.86E-01	6.19E-02
	302.84	17.80	2.49E-01		1.90E-01	1.20E-01
	356.01	60.00	8.79E-02		8.24E-03	4.24E-02
@ I-133	529.87	86.30	1.00E+26	1.00E+26	1.00E+26	1.00E+20
XE-133	81.00	38.00	6.83E+04	6.83E+04	-1.54E+05	3.34E+04
CS-134	563.23	8.38	5.61E-01	5.35E-02	2.20E-03	2.64E-01
	569.32	15.43	3.17E-01		6.64E-02	1.50E-01
	604.70	97.60	5.35E-02		-2.86E-03	2.53E-02
	795.84	85.40	7.14E-02		6.67E-02	3.36E-02
	801.93	8.73	6.06E-01		3.02E-02	2.83E-01
CS-135	268.24	16.00	2.67E-01	2.67E-01	2.04E-03	1.29E-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	1.00E+02	8.48E+00	5.25E+01	4.87E+01
	163.89	4.61	1.65E+02		8.64E+01	8.02E+01
	176.55	13.56	5.01E+01		-1.49E+00	2.42E+01
	273.65	12.66	6.72E+01		-1.45E+01	3.24E+01
	340.57	48.50	2.44E+01		5.16E+01	1.19E+01
	818.50	99.70	8.48E+00		-3.45E+00	3.90E+00
	1048.07	79.60	1.32E+01		-2.47E+00	6.08E+00
	1235.34	19.70	7.85E+01		4.15E+01	3.69E+01
CS-137	661.65	85.12	5.61E-02	5.61E-02	8.94E-03	2.64E-02
LA-138	788.74	34.00	1.42E-01	7.00E-02	5.30E-02	6.63E-02
	1435.80	66.00	7.00E-02		3.03E-02	3.12E-02
CE-139	165.85	80.35	7.43E-02	7.43E-02	-1.07E-02	3.60E-02
BA-140	162.64	6.70	1.35E+02	4.34E+01	1.02E+02	6.54E+01
	304.84	4.50	2.12E+02		-1.92E+01	1.02E+02
	423.70	3.20	2.82E+02		6.91E+01	1.34E+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)
BA-140	437.55	2.00	5.08E+02	4.34E+01	9.13E+01	2.42E+02
	537.32	25.00	4.34E+01		-9.32E+00	2.06E+01
LA-140	328.77	20.50	5.00E+01	1.06E+01	2.89E+01	2.40E+01
	487.03	45.50	2.15E+01		4.00E+00	1.01E+01
	815.85	23.50	4.31E+01		1.85E+00	1.99E+01
	1596.49	95.49	1.06E+01		-4.63E-01	4.64E+00
CE-141	145.44	48.40	6.26E-01	6.26E-01	-6.09E-03	3.04E-01
@ CE-143	57.36	11.80	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	293.26	42.00	1.00E+26		1.00E+26	1.00E+20
@	664.55	5.20	1.00E+26		1.00E+26	1.00E+20
CE-144	133.54	10.80	4.00E-01	4.00E-01	-1.90E-01	1.94E-01
PM-144	476.78	42.00	1.21E-01	5.68E-02	5.94E-02	5.75E-02
	618.01	98.60	6.09E-02		-1.73E-04	2.88E-02
	696.49	99.49	5.68E-02		-1.14E-02	2.66E-02
PM-145	36.85	21.70	1.71E-01	9.62E-02	1.72E-03	8.26E-02
	37.36	39.70	9.62E-02		3.66E-02	4.66E-02
	42.30	15.10	2.39E-01		-3.53E-01	1.16E-01
	72.40	2.31	2.16E+00		-5.17E-01	1.06E+00
PM-146	453.90	39.94	1.05E-01	1.05E-01	2.62E-02	4.98E-02
	735.90	14.01	2.96E-01		-9.96E-02	1.37E-01
	747.13	13.10	3.66E-01		9.66E-02	1.71E-01
ND-147	91.11	28.90	9.82E+01	9.82E+01	1.58E+02	4.82E+01
	531.02	13.10	2.10E+02		1.66E+02	9.98E+01
PM-149	285.90	3.10	7.32E+13	7.32E+13	-1.82E+13	3.52E+13
EU-152	121.78	20.50	1.73E-01	1.73E-01	-9.77E-03	8.41E-02
	244.69	5.40	7.26E-01		-4.65E-01	3.50E-01
	344.27	19.13	2.17E-01		1.24E-02	1.04E-01
	778.89	9.20	5.35E-01		3.96E-02	2.50E-01
	964.01	10.40	6.59E-01		-6.56E-01	3.11E-01
	1085.78	7.22	8.20E-01		-2.79E-02	3.81E-01
	1112.02	9.60	5.08E-01		-3.63E-02	2.32E-01
	1407.95	14.94	3.32E-01		1.17E-01	1.49E-01
GD-153	97.43	31.30	1.59E-01	1.59E-01	3.68E-02	7.76E-02
	103.18	22.20	2.08E-01		-1.93E-02	1.01E-01
EU-154	123.07	40.50	9.09E-02	9.09E-02	2.13E-02	4.42E-02
	723.30	19.70	2.31E-01		-5.46E-02	1.08E-01
	873.19	11.50	4.30E-01		-1.50E-02	2.00E-01
	996.32	10.30	4.99E-01		-2.82E-01	2.31E-01
	1004.76	17.90	3.27E-01		1.02E-01	1.52E-01
	1274.45	35.50	1.59E-01		-8.35E-02	7.27E-02
EU-155	86.50	30.90	1.48E-01	1.48E-01	5.09E-02	7.23E-02
	105.30	20.70	1.71E-01		-1.23E-01	8.30E-02
EU-156	811.77	10.40	4.24E+01	4.24E+01	-1.11E+01	1.96E+01
	1153.47	7.20	8.97E+01		-3.53E+01	4.19E+01
	1230.71	8.90	7.28E+01		-1.55E+01	3.39E+01
HO-166M	184.41	72.60	5.93E-02	5.93E-02	8.32E-02	2.88E-02
	280.45	29.60	1.44E-01		8.53E-02	6.96E-02
	410.94	11.10	3.90E-01		1.15E-01	1.86E-01
	711.69	54.10	8.92E-02		2.44E-02	4.19E-02
TM-171	66.72	0.14	3.33E+01	3.33E+01	3.68E+00	1.63E+01
HF-172	67.35	5.31	8.78E-01	3.55E-01	2.29E-01	4.29E-01
	125.81	11.30	3.55E-01		-5.93E-02	1.73E-01
LU-172	181.53	20.60	5.90E+03	3.17E+03	-7.18E+03	2.86E+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)
	LU-172	900.72		29.81	5.21E+03	3.17E+03	-1.66E+03	2.40E+03
		1093.66		62.50	3.17E+03		2.15E+03	1.47E+03
	LU-173	100.72		5.24	7.91E-01	2.30E-01	1.75E-01	3.85E-01
		272.11		21.20	2.30E-01		-2.44E-03	1.11E-01
	HF-175	343.40		84.00	1.32E-01	1.32E-01	7.53E-03	6.32E-02
	LU-176	88.34		13.30	3.42E-01	4.08E-02	1.14E-01	1.68E-01
		201.83		86.00	4.11E-02		-8.37E-03	1.98E-02
		306.78		94.00	4.08E-02		-1.03E-02	1.96E-02
	HF-181	133.02		41.70	4.22E-01	2.20E-01	-2.00E-01	2.05E-01
		345.85		17.20	1.23E+00		7.09E-02	5.89E-01
		482.03		82.80	2.20E-01		-1.41E-01	1.03E-01
	TA-182	67.75		41.20	1.88E-01	1.88E-01	4.91E-02	9.20E-02
		1121.30		34.90	4.80E-01		8.01E-01	2.29E-01
		1189.05		16.23	8.30E-01		7.52E-03	3.90E-01
		1221.41		26.98	5.18E-01		3.19E-01	2.44E-01
		1231.02		11.44	1.04E+00		-2.21E-01	4.84E-01
	IR-192	308.46		29.68	3.34E-01	2.19E-01	-6.42E-02	1.60E-01
		468.07		48.10	2.19E-01		-1.52E-02	1.04E-01
	HG-203	279.19		77.30	2.48E-01	2.48E-01	1.25E-01	1.20E-01
	TL-204	374.74		94.11	4.44E-02	4.44E-02	-3.96E-03	2.12E-02
		899.15		99.16	4.99E-02		9.55E-03	2.31E-02
		911.74		91.10	1.12E-01		2.82E-01	5.41E-02
	BI-207	569.67		97.72	4.61E-02	4.61E-02	1.23E-02	2.18E-02
		1063.62		74.90	7.60E-02		1.76E-02	3.53E-02
+	TL-208	583.14	*	30.22	2.91E-01	8.56E-02	7.93E-01	1.42E-01
		860.37		4.48	1.31E+00		6.23E-01	6.16E-01
		2614.66	*	35.85	8.56E-02		7.62E-01	3.21E-02
	BI-210M	262.00		45.00	8.84E-02	8.84E-02	-3.00E-02	4.26E-02
		300.00		23.00	1.95E-01		-6.83E-01	9.39E-02
	PB-210	46.50		4.25	9.46E-01	9.46E-01	1.43E+00	4.61E-01
+	PB-211	404.84	*	2.90	1.22E+00	1.22E+00	6.73E-01	5.78E-01
		831.96		2.90	1.72E+00		2.44E-02	8.04E-01
+	BI-212	727.17	*	11.80	6.67E-01	6.67E-01	7.35E-01	3.21E-01
		1620.62		2.75	1.80E+00		1.20E+00	7.99E-01
+	PB-212	238.63	*	44.60	1.88E-01	1.88E-01	7.84E-01	9.27E-02
		300.09	*	3.41	2.23E+00		7.60E-01	1.09E+00
+	BI-214	609.31	*	46.30	2.36E-01	1.36E-01	7.04E-01	1.15E-01
		1120.29	*	15.10	5.68E-01		1.02E+00	2.70E-01
		1764.49	*	15.80	3.45E-01		8.99E-01	1.54E-01
		2204.22	*	4.98	1.36E-01		8.05E-01	0.00E+00
+	PB-214	295.21	*	19.19	3.88E-01	1.49E-01	7.22E-01	1.90E-01
		351.92	*	37.19	1.49E-01		6.25E-01	7.20E-02
	RN-219	401.80		6.50	6.63E-01	6.63E-01	-1.14E-01	3.17E-01
	RA-223	323.87		3.88	1.02E+00	1.02E+00	4.28E-01	4.87E-01
+	RA-224	240.98	*	3.95	2.13E+00	2.13E+00	2.02E+00	1.05E+00
	RA-225	40.00		31.00	1.33E+01	1.33E+01	-1.83E+00	6.46E+00
+	RA-226	186.21	*	3.28	1.94E+00	1.94E+00	1.78E+00	9.51E-01
	TH-227	50.10		8.40	4.27E-01	4.03E-01	-2.79E-01	2.08E-01
		236.00		11.50	4.03E-01		-2.22E+00	1.95E-01
		256.20		6.30	6.65E-01		3.40E-01	3.21E-01
+	AC-228	338.32	*	11.40	5.03E-01	3.01E-01	1.04E+00	2.44E-01
		911.07	*	27.70	3.01E-01		7.92E-01	1.44E-01
		969.11	*	16.60	6.43E-01		6.05E-01	3.10E-01

Analysis Report for 1707091-19

HTC-A08-BKGD02-3642-01

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	TH-230	48.44		16.90	2.25E-01	2.25E-01	-7.81E-03	1.09E-01
		62.85		4.60	9.93E-01		1.13E+00	4.86E-01
		67.67		0.37	1.14E+01		2.97E+00	5.56E+00
	PA-231	283.67		1.60	2.46E+00	1.90E+00	-2.57E+00	1.18E+00
		302.67		2.30	1.90E+00		1.45E+00	9.13E-01
	TH-231	25.64		14.70	3.57E-01	3.57E-01	-2.41E+00	1.73E-01
		84.21		6.40	6.60E-01		-1.68E-01	3.23E-01
	PA-233	311.98		38.60	1.34E+00	1.34E+00	6.70E-02	6.43E-01
	PA-234	131.20		20.40	1.70E-01	1.70E-01	-3.91E-04	8.28E-02
		733.99		8.80	4.94E-01		6.06E-02	2.30E-01
		946.00		12.00	4.18E-01		1.92E-02	1.94E-01
	PA-234M	1001.03		0.92	6.75E+00	6.75E+00	6.60E+00	3.17E+00
+	TH-234	63.29	*	3.80	1.76E+00	1.76E+00	1.25E+00	8.70E-01
	U-235	143.76		10.50	3.38E-01	3.38E-01	3.09E-02	1.64E-01
		163.35		4.70	7.91E-01		4.13E-01	3.84E-01
		205.31		4.70	7.97E-01		-1.24E-01	3.85E-01
	NP-237	86.50		12.60	3.48E-01	3.48E-01	1.20E-01	1.70E-01
	NP-239	106.10		22.70	1.27E+12	1.27E+12	-3.52E+10	6.20E+11
		228.18		10.70	2.69E+12		-1.58E+11	1.29E+12
		277.60		14.10	2.51E+12		1.31E+12	1.21E+12
	AM-241	59.54		35.90	1.10E-01	1.10E-01	-8.07E-02	5.38E-02
+	AM-243	74.67	*	66.00	1.58E-01	1.58E-01	1.60E-01	7.85E-02
	CM-243	209.75		3.29	1.20E+00	3.10E-01	4.30E-01	5.82E-01
		228.14		10.60	3.33E-01		-1.95E-02	1.60E-01
		277.60		14.00	3.10E-01		1.61E-01	1.49E-01

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

No Action Level results available for reporting purposes.

DATA REVIEW COMMENTS REPORT

Creation Date	Comment	User

Analysis Report for 1707091-19

HTC-A08-BKGD02-3642-01

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: HTC-A08-BKGD02-3642-01

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	73	77	56	153	552	141
25:	63	76	54	50	54	56	63	65
33:	77	43	51	69	61	77	60	78
41:	70	69	69	68	76	110	134	82
49:	81	63	93	81	95	105	91	83
57:	83	109	92	116	120	122	161	223
65:	140	129	114	123	156	140	137	141
73:	166	156	330	243	298	398	141	137
81:	128	119	128	130	142	110	169	189
89:	122	150	157	117	250	206	119	103
97:	97	104	100	107	88	98	78	70
105:	96	85	87	74	99	105	92	94
113:	89	89	69	84	85	68	96	68
121:	75	93	82	88	84	81	87	87
129:	93	86	76	75	73	72	70	66
137:	80	78	71	76	88	73	73	86
145:	74	67	63	71	72	72	75	85
153:	70	78	78	65	57	64	60	64
161:	74	78	74	66	89	60	64	57
169:	69	63	63	79	66	55	51	49
177:	62	54	53	50	50	53	69	72
185:	65	133	100	78	55	50	64	59
193:	62	60	42	64	63	64	55	58
201:	57	37	54	59	45	63	61	65
209:	54	90	52	55	48	60	46	52
217:	48	54	51	41	43	48	57	49
225:	48	49	44	40	48	45	48	41
233:	47	45	54	58	56	171	459	212
241:	91	122	84	64	36	37	32	45
249:	37	34	33	46	38	40	39	42
257:	43	40	37	40	27	30	33	40
265:	38	44	29	32	39	48	48	36
273:	30	34	32	39	34	39	46	42
281:	35	36	29	32	26	27	30	41
289:	38	36	31	28	31	29	120	154
297:	38	29	34	39	51	33	36	31
305:	26	27	28	19	24	28	25	32
313:	23	32	18	27	27	24	24	17
321:	34	34	18	26	21	22	24	47
329:	35	38	18	25	17	32	19	23
337:	32	90	121	51	27	31	20	29
345:	28	20	21	27	27	32	56	233
353:	116	32	16	29	33	24	24	30
361:	23	17	19	25	19	15	20	19

369:	16	31	18	23	18	20	24	20

Sample Title: HTC-A08-BKGD02-3642-01

Channel								
377:	25	16	21	18	16	22	23	21
385:	18	16	19	24	21	21	26	24
393:	12	25	25	20	23	30	22	22
401:	16	23	21	22	30	28	15	15
409:	26	26	22	27	19	17	14	21
417:	15	17	10	21	13	14	23	12
425:	19	15	13	17	8	14	19	14
433:	12	21	15	18	16	16	23	20
441:	25	23	14	16	16	15	16	19
449:	15	14	17	19	18	16	19	11
457:	13	16	17	20	16	27	28	33
465:	25	15	13	14	13	18	12	13
473:	20	21	19	16	9	26	10	12
481:	12	8	10	12	11	14	11	16
489:	21	18	19	16	11	17	15	22
497:	13	14	13	14	14	19	7	17
505:	15	15	15	22	28	46	86	51
513:	22	18	12	9	21	21	11	10
521:	12	9	11	17	13	10	13	15
529:	10	17	16	18	20	23	9	12
537:	16	15	19	16	14	18	16	12
545:	10	18	16	9	14	15	8	10
553:	11	16	13	12	12	14	10	7
561:	13	14	20	12	12	12	12	15
569:	12	9	18	18	13	12	12	13
577:	17	10	22	15	15	37	115	109
585:	27	25	13	15	21	8	18	6
593:	15	10	13	10	14	11	12	19
601:	9	15	7	9	15	7	10	37
609:	129	135	33	10	19	20	17	16
617:	11	21	16	13	11	11	13	8
625:	10	11	9	14	11	15	14	12
633:	9	11	9	10	9	10	10	17
641:	13	12	13	8	9	13	10	10
649:	15	6	16	16	7	12	12	11
657:	11	17	11	12	13	10	11	16
665:	13	8	10	6	9	10	17	12
673:	9	9	9	8	15	17	15	9
681:	15	14	15	12	15	8	11	14
689:	18	7	13	10	17	9	9	10
697:	12	7	12	14	11	11	8	12
705:	10	11	12	6	13	9	10	12
713:	11	10	14	11	9	18	13	9
721:	9	3	10	7	8	19	28	30
729:	11	9	8	15	6	7	10	5
737:	9	6	7	13	13	12	14	9
745:	13	7	7	15	9	7	3	6
753:	10	14	16	13	15	9	10	9
761:	8	9	8	17	6	5	14	24
769:	16	16	12	16	7	9	11	10
777:	10	11	8	11	11	8	8	10
785:	10	15	10	11	7	11	8	5
793:	14	15	17	13	10	12	8	6

801:	7	16	8	11	9	10	7	10

Sample Title: HTC-A08-BKGD02-3642-01

Channel								
809:	7	6	10	10	4	7	8	7
817:	11	6	5	3	5	11	9	8
825:	9	10	10	8	6	9	11	14
833:	7	6	13	20	15	11	6	19
841:	12	8	12	9	7	3	7	7
849:	6	9	6	16	7	6	11	9
857:	10	10	13	23	15	8	9	11
865:	7	10	5	7	12	11	11	9
873:	4	5	10	7	9	8	8	12
881:	4	9	11	10	14	6	11	8
889:	4	7	9	10	7	11	7	8
897:	10	8	6	5	5	9	3	6
905:	11	6	7	9	12	36	87	62
913:	13	13	6	8	7	11	5	3
921:	7	10	8	3	13	5	5	5
929:	4	11	10	9	5	15	14	12
937:	1	8	8	8	5	6	9	3
945:	10	5	15	5	7	4	14	8
953:	7	11	7	4	9	11	11	6
961:	12	10	10	19	23	16	9	22
969:	41	33	10	9	8	10	6	6
977:	6	9	3	6	9	9	12	9
985:	5	4	6	9	9	5	5	11
993:	4	8	4	6	8	12	8	6
1001:	18	15	10	9	4	3	6	10
1009:	5	9	12	0	4	4	5	8
1017:	9	8	8	8	9	9	10	7
1025:	7	6	7	12	12	9	15	10
1033:	8	10	2	4	6	7	9	7
1041:	11	8	6	9	10	6	6	3
1049:	9	8	6	7	9	10	6	2
1057:	3	6	7	6	10	4	6	13
1065:	10	9	7	8	13	12	12	9
1073:	9	4	12	8	4	5	12	15
1081:	11	12	6	13	14	6	6	3
1089:	8	5	5	7	10	12	9	9
1097:	5	2	12	7	3	9	8	6
1105:	10	10	8	5	5	10	4	6
1113:	2	6	5	6	7	16	19	46
1121:	29	14	11	11	5	9	10	16
1129:	7	11	6	7	11	13	6	9
1137:	7	7	11	10	6	7	9	7
1145:	13	8	2	9	10	11	11	9
1153:	8	7	15	6	14	13	6	8
1161:	6	11	13	4	7	7	7	14
1169:	10	15	12	10	14	10	13	10
1177:	9	10	9	7	4	7	9	13
1185:	8	10	7	19	15	16	7	10
1193:	11	15	9	10	4	14	9	11
1201:	5	10	4	7	11	9	9	19
1209:	6	15	12	13	11	6	12	14
1217:	8	15	12	14	9	12	12	13
1225:	9	4	5	12	15	2	10	5

1233:	12	14	11	8	12	23	15	8

Sample Title: HTC-A08-BKGD02-3642-01

Channel								
1241:	14	3	10	10	7	12	4	5
1249:	8	7	5	3	8	11	7	2
1257:	5	5	6	6	8	10	5	10
1265:	5	13	8	4	11	5	4	13
1273:	4	5	4	5	6	11	6	4
1281:	6	4	8	5	3	7	8	3
1289:	2	4	7	10	4	8	6	4
1297:	2	3	8	5	5	4	6	3
1305:	5	6	5	5	2	7	6	3
1313:	10	3	3	7	6	5	1	2
1321:	2	5	1	3	3	8	5	7
1329:	4	5	5	3	4	8	4	3
1337:	1	5	3	4	2	5	2	3
1345:	1	6	2	1	3	4	6	6
1353:	5	1	3	1	6	3	4	5
1361:	2	2	2	4	3	6	7	4
1369:	3	3	2	1	7	7	8	3
1377:	9	4	7	2	2	1	1	2
1385:	0	4	3	0	4	1	2	5
1393:	4	2	2	0	1	5	3	5
1401:	1	4	5	2	3	1	4	10
1409:	4	3	0	1	3	4	3	4
1417:	3	1	4	1	5	2	2	9
1425:	2	1	2	2	5	0	4	3
1433:	4	3	1	2	4	6	1	2
1441:	2	1	2	6	1	1	3	5
1449:	3	4	0	2	4	0	4	5
1457:	5	19	85	349	397	173	34	11
1465:	18	11	3	2	1	4	3	1
1473:	2	1	4	3	2	3	3	2
1481:	5	0	2	2	1	0	1	1
1489:	1	0	1	2	2	3	2	2
1497:	3	3	2	1	2	2	4	4
1505:	4	0	0	4	3	2	1	0
1513:	0	1	0	3	2	2	1	1
1521:	0	1	1	1	1	1	2	2
1529:	0	1	2	5	2	0	3	0
1537:	3	1	1	2	3	1	2	1
1545:	3	0	1	4	3	0	0	1
1553:	1	0	1	2	0	1	4	0
1561:	0	2	0	1	3	2	3	0
1569:	0	0	1	3	2	0	0	5
1577:	1	2	1	0	4	5	1	1
1585:	2	4	8	9	3	1	2	2
1593:	3	5	1	2	2	2	1	1
1601:	2	2	0	0	1	1	1	1
1609:	2	1	1	0	2	1	1	0
1617:	3	4	3	6	1	3	2	1
1625:	1	2	3	0	1	5	5	0
1633:	0	1	0	1	3	2	1	0
1641:	0	0	0	0	1	0	0	0
1649:	1	1	2	1	2	1	0	1
1657:	2	0	2	2	4	6	1	0

1665:	2	1	1	1	0	1	1	1

Sample Title: HTC-A08-BKGD02-3642-01

Channel								
1673:	2	1	2	1	0	0	1	1
1681:	1	1	1	1	2	2	0	1
1689:	1	0	2	4	1	1	1	0
1697:	0	1	2	0	1	0	2	1
1705:	2	0	1	2	1	1	0	0
1713:	1	1	1	1	1	0	2	1
1721:	1	0	1	2	0	2	2	2
1729:	6	3	5	3	1	1	1	2
1737:	1	2	1	0	0	6	0	0
1745:	1	0	1	2	0	0	3	2
1753:	2	1	1	2	1	0	2	1
1761:	3	4	10	26	16	8	2	3
1769:	3	0	0	1	0	1	2	0
1777:	3	2	2	3	1	3	3	0
1785:	2	0	2	0	0	1	1	0
1793:	1	1	0	0	1	3	2	0
1801:	1	1	2	0	1	1	1	1
1809:	2	0	5	2	1	0	1	2
1817:	4	0	0	1	2	2	1	3
1825:	1	1	0	1	1	1	0	1
1833:	2	1	0	2	1	0	2	0
1841:	1	1	1	0	3	3	3	5
1849:	0	1	1	1	0	2	0	0
1857:	1	0	2	0	1	1	0	1
1865:	0	1	2	1	0	1	4	0
1873:	3	1	0	1	1	0	1	0
1881:	0	0	1	0	0	0	1	0
1889:	2	1	2	1	1	1	3	1
1897:	0	1	0	0	3	0	0	1
1905:	0	0	1	1	0	2	2	2
1913:	1	0	1	0	1	2	4	1
1921:	3	1	0	1	0	2	2	1
1929:	1	0	0	1	1	1	1	1
1937:	1	4	0	0	0	1	0	0
1945:	0	1	0	0	1	1	0	0
1953:	0	2	1	1	1	1	4	1
1961:	0	0	2	1	1	0	1	0
1969:	0	0	1	3	1	0	1	1
1977:	1	1	0	2	1	0	2	4
1985:	2	1	1	1	1	1	0	0
1993:	2	0	1	2	0	1	2	1
2001:	1	2	0	0	2	0	1	0
2009:	2	0	2	0	1	0	3	1
2017:	4	0	0	0	2	1	0	0
2025:	1	3	1	0	1	2	2	0
2033:	0	0	1	0	1	1	1	1
2041:	1	3	1	1	1	0	0	0
2049:	1	0	0	0	0	2	3	0
2057:	1	2	1	1	1	1	0	1
2065:	1	2	1	2	1	1	1	0
2073:	1	2	1	0	1	1	1	0
2081:	0	0	1	0	0	0	0	3
2089:	2	0	0	0	2	2	2	1

2097:	0	2	2	3	1	3	4	4

Sample Title: HTC-A08-BKGD02-3642-01

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

2529:	0	0	0	0	1	1	0	0

Sample Title: HTC-A08-BKGD02-3642-01

Channel								
2537:	0	1	1	0	0	0	1	2
2545:	1	0	1	0	0	0	0	1
2553:	0	0	1	0	1	1	0	0
2561:	1	0	0	1	0	0	0	0
2569:	0	1	0	0	0	1	0	0
2577:	0	1	0	0	0	0	0	0
2585:	0	0	0	0	0	0	0	0
2593:	0	1	0	0	0	1	0	1
2601:	0	1	0	1	0	0	0	0
2609:	0	0	6	14	30	29	19	4
2617:	0	0	2	1	0	0	1	0
2625:	0	0	1	0	3	0	0	0
2633:	0	0	0	0	0	0	1	0
2641:	0	0	0	0	0	1	0	0
2649:	1	0	0	0	0	0	0	0
2657:	1	0	0	0	0	1	2	0
2665:	0	0	0	0	2	1	0	0
2673:	1	0	0	0	0	0	0	1
2681:	0	0	0	1	0	0	1	0
2689:	0	0	0	0	1	0	0	1
2697:	0	0	1	0	0	0	0	0
2705:	1	0	0	0	0	0	0	1
2713:	0	1	1	0	1	0	0	0
2721:	0	0	0	0	0	2	0	0
2729:	0	1	0	0	0	0	0	0
2737:	0	0	1	0	2	0	0	0
2745:	0	0	0	0	2	0	0	0
2753:	1	0	0	0	0	0	1	1
2761:	0	1	0	2	0	0	0	0
2769:	0	0	0	0	0	1	1	0
2777:	0	0	0	0	0	2	0	0
2785:	1	0	1	1	0	0	0	0
2793:	0	0	0	0	0	0	0	0
2801:	1	0	0	0	0	0	1	1
2809:	0	1	0	0	1	1	0	0
2817:	0	0	0	1	0	0	0	0
2825:	0	0	0	0	0	1	0	0
2833:	1	0	0	0	1	0	0	0
2841:	1	0	0	1	0	0	1	0
2849:	0	0	0	0	0	1	1	1
2857:	0	1	0	0	1	1	1	0
2865:	0	0	0	0	0	1	0	0
2873:	0	1	0	0	0	1	0	1
2881:	0	0	0	0	1	0	0	1
2889:	0	0	0	1	0	0	0	0
2897:	0	0	0	1	0	0	1	0
2905:	0	1	0	1	1	0	0	0
2913:	1	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	1	0	1	0
2945:	0	0	0	1	1	0	0	0
2953:	0	0	0	0	0	0	0	0

2961:	1	0	0	0	0	0	0	0

Sample Title: HTC-A08-BKGD02-3642-01

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

3393:	0	0	0	1	0	0	0	0

Sample Title: HTC-A08-BKGD02-3642-01

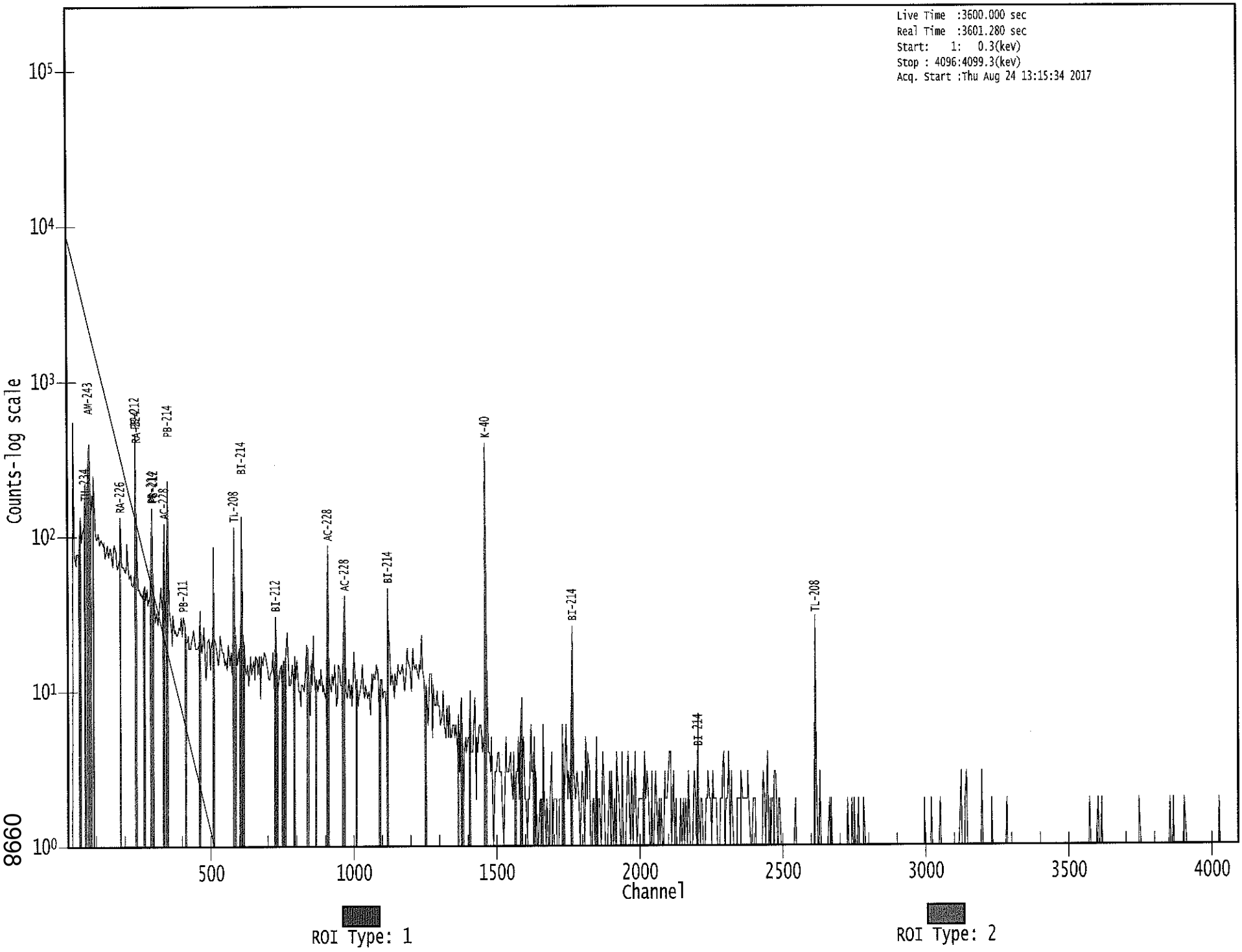
Channel								
3401:	0	0	0	0	0	0	0	0
3409:	0	0	0	0	1	0	0	0
3417:	0	0	0	0	1	0	0	0
3425:	0	0	0	0	0	0	0	0
3433:	0	1	0	0	1	0	0	0
3441:	0	0	0	0	1	0	1	0
3449:	0	0	0	0	0	0	0	0
3457:	0	0	1	0	1	0	0	0
3465:	1	0	0	0	0	0	0	0
3473:	0	0	0	0	0	0	0	1
3481:	0	0	0	0	1	0	1	0
3489:	0	0	1	0	0	0	0	0
3497:	0	0	1	1	0	0	0	0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

3825:	0	0	0	0	0	0	0	0

Sample Title: HTC-A08-BKGD02-3642-01

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

0000055908.CNF



8660

Apex-Gamma

Analysis Report for 1707091-20

HTC-A08-BKGD02-4248-01

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 1707091-20
Sample Description	: HTC-A08-BKGD02-4248-01
Sample Type	: SOIL
Sample Size	: 7.825E+02 grams
Facility	: Countroom
Sample Taken On	: 5/15/2017 1:01:21PM
Acquisition Started	: 8/24/2017 1:15:41PM
Procedure	: GAS-1602 pCi
Operator	: Administrator
Detector Name	: GE2
Geometry	: GAS-1602
Live Time	: 3600.0 seconds
Real Time	: 3601.0 seconds
Dead Time	: 0.03 %
Peak Locate Threshold	: 2.50
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 29 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 8/19/2017
Efficiency Calibration Used Done On	: 1/14/2017
Efficiency Calibration Description	:
Sample Number	: 55909

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

Analysis Report for 1707091-20

HTC-A08-BKGD02-4248-01

PEAK LOCATE REPORT

Peak Locate Performed on : 8/24/2017 2:16:16PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096
Peak Search Sensitivity : 2.50

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
1	76.10	76.41	0.0000	0.00
2	87.33	87.63	0.0000	0.00
3	92.41	92.70	0.0000	0.00
4	184.32	184.51	0.0000	0.00
5	194.29	194.48	0.0000	0.00
6	209.45	209.62	0.0000	0.00
7	238.76	238.90	0.0000	0.00
8	242.08	242.21	0.0000	0.00
9	270.10	270.21	0.0000	0.00
10	295.20	295.27	0.0000	0.00
11	337.20	337.23	0.0000	0.00
12	351.93	351.95	0.0000	0.00
13	510.94	510.80	0.0000	0.00
14	583.27	583.05	0.0000	0.00
15	609.37	609.12	0.0000	0.00
16	726.95	726.58	0.0000	0.00
17	768.19	767.79	0.0000	0.00
18	772.66	772.26	0.0000	0.00
19	795.74	795.31	0.0000	0.00
20	861.56	861.07	0.0000	0.00
21	902.72	902.20	0.0000	0.00
22	911.49	910.95	0.0000	0.00
23	961.58	961.00	0.0000	0.00
24	964.96	964.37	0.0000	0.00
25	969.17	968.58	0.0000	0.00
26	973.02	972.42	0.0000	0.00
27	1082.38	1081.69	0.0000	0.00
28	1104.57	1103.85	0.0000	0.00
29	1120.92	1120.19	0.0000	0.00
30	1133.74	1133.00	0.0000	0.00
31	1238.98	1238.14	0.0000	0.00
32	1378.01	1377.05	0.0000	0.00
33	1461.09	1460.07	0.0000	0.00
34	1527.41	1526.33	0.0000	0.00
35	1587.43	1586.30	0.0000	0.00
36	1593.26	1592.12	0.0000	0.00
37	1631.04	1629.87	0.0000	0.00
38	1639.28	1638.11	0.0000	0.00
39	1647.42	1646.25	0.0000	0.00
40	1728.80	1727.56	0.0000	0.00
41	1765.08	1763.81	0.0000	0.00
42	2103.43	2101.91	0.0000	0.00

Analysis Report for 1707091-20

HTC-A08-BKGD02-4248-01

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
43	2203.77	2202.17	0.0000	0.00
44	2614.63	2612.76	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1707091-20

HTC-A08-BKGD02-4248-01

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 8/24/2017 2:16:16PM

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

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
	1	76.10	72 -	81	76.41	8.08E+02	123.10	1.70E+03	3.89
	2	87.33	86 -	89	87.63	1.02E+02	58.82	7.59E+02	1.49
	3	92.41	90 -	96	92.70	2.15E+02	83.89	1.10E+03	1.56
M	4	184.32	181 -	197	184.51	5.78E+01	48.56	4.18E+02	1.61
m	5	194.29	181 -	197	194.48	5.72E+01	46.33	3.83E+02	1.64
	6	209.45	206 -	215	209.62	9.53E+01	79.84	8.59E+02	2.70
M	7	238.76	235 -	247	238.90	5.38E+02	58.45	2.33E+02	1.45
m	8	242.08	235 -	247	242.21	9.44E+01	40.35	2.45E+02	1.46
	9	270.10	266 -	273	270.21	7.60E+01	54.63	4.44E+02	1.69
	10	295.20	292 -	298	295.27	2.42E+02	51.87	3.11E+02	1.44
	11	337.20	331 -	341	337.23	1.29E+02	62.42	4.51E+02	1.98
	12	351.93	348 -	355	351.95	3.68E+02	55.50	2.68E+02	1.35
	13	510.94	505 -	516	510.80	1.27E+02	55.14	3.12E+02	2.11
	14	583.27	578 -	587	583.05	2.01E+02	49.84	2.40E+02	1.51
	15	609.37	605 -	612	609.12	2.57E+02	42.94	1.35E+02	2.01
	16	726.95	721 -	731	726.58	5.18E+01	38.99	1.72E+02	1.95
	17	768.19	764 -	770	767.79	2.14E+01	26.84	1.15E+02	2.11
	18	772.66	771 -	775	772.26	2.00E+01	19.67	6.60E+01	1.62
	19	795.74	792 -	798	795.31	2.57E+01	20.60	5.65E+01	2.88
	20	861.56	857 -	866	861.07	4.30E+01	27.06	8.00E+01	1.99
M	21	902.72	900 -	921	902.20	1.34E+01	12.81	3.58E+01	2.16
m	22	911.49	900 -	921	910.95	1.20E+02	27.22	5.09E+01	1.97
M	23	961.58	954 -	976	961.00	1.20E+01	17.75	3.96E+01	2.01
m	24	964.96	954 -	976	964.37	4.47E+01	22.80	4.97E+01	2.43
m	25	969.17	954 -	976	968.58	5.82E+01	25.37	5.58E+01	2.44
m	26	973.02	954 -	976	972.42	1.80E+01	22.27	6.07E+01	2.44
	27	1082.38	1073 -	1090	1081.69	6.53E+01	33.96	8.14E+01	13.33
	28	1104.57	1100 -	1109	1103.85	2.64E+01	25.20	7.72E+01	3.95
M	29	1120.92	1116 -	1136	1120.19	5.29E+01	24.01	6.06E+01	2.35
m	30	1133.74	1116 -	1136	1133.00	1.37E+01	19.40	6.80E+01	2.36
	31	1238.98	1233 -	1247	1238.14	4.60E+01	41.10	1.62E+02	3.68
	32	1378.01	1372 -	1383	1377.05	3.07E+01	21.45	4.26E+01	1.95
	33	1461.09	1453 -	1466	1460.07	6.83E+02	54.63	2.80E+01	2.30
	34	1527.41	1522 -	1529	1526.33	8.00E+00	8.94	8.00E+00	3.24
M	35	1587.43	1584 -	1596	1586.30	1.36E+01	8.49	4.00E+00	2.59
m	36	1593.26	1584 -	1596	1592.12	1.82E+01	11.51	9.00E+00	4.96
	37	1631.04	1626 -	1634	1629.87	1.05E+01	8.50	4.92E+00	2.35
	38	1639.28	1635 -	1641	1638.11	8.55E+00	7.23	2.90E+00	4.42
	39	1647.42	1644 -	1648	1646.25	4.92E+00	5.50	2.17E+00	2.57
	40	1728.80	1722 -	1733	1727.56	2.49E+01	12.17	6.29E+00	7.68

Analysis Report for 1707091-20

HTC-A08-BKGD02-4248-01

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
41	1765.08	1760 -	1767	1763.81	5.20E+01	14.42	0.00E+00	2.55
42	2103.43	2097 -	2107	2101.91	1.63E+01	12.19	1.14E+01	2.06
43	2203.77	2197 -	2205	2202.17	9.50E+00	9.82	9.00E+00	1.83
44	2614.63	2606 -	2617	2612.76	7.07E+01	18.22	6.66E+00	3.06

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 : 8/24/2017 2:16:16PM

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

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	1	76.10	72 -	81	8.08E+02	123.10	1.70E+03	8.97E+01
	2	87.33	86 -	89	1.02E+02	58.82	7.59E+02	4.54E+01
	3	92.41	90 -	96	2.15E+02	83.89	1.10E+03	6.46E+01
M	4	184.32	181 -	197	5.78E+01	48.56	4.18E+02	3.36E+01
m	5	194.29	181 -	197	5.72E+01	46.33	3.83E+02	3.22E+01
	6	209.45	206 -	215	9.53E+01	79.84	8.59E+02	6.36E+01
M	7	238.76	235 -	247	5.38E+02	58.45	2.33E+02	2.51E+01
m	8	242.08	235 -	247	9.44E+01	40.35	2.45E+02	2.57E+01
	9	270.10	266 -	273	7.60E+01	54.63	4.44E+02	4.26E+01
	10	295.20	292 -	298	2.42E+02	51.87	3.11E+02	3.41E+01
	11	337.20	331 -	341	1.29E+02	62.42	4.51E+02	4.78E+01
	12	351.93	348 -	355	3.68E+02	55.50	2.68E+02	3.30E+01
	13	510.94	505 -	516	1.27E+02	55.14	3.12E+02	4.14E+01
	14	583.27	578 -	587	2.01E+02	49.84	2.40E+02	3.37E+01
	15	609.37	605 -	612	2.57E+02	42.94	1.35E+02	2.35E+01
	16	726.95	721 -	731	5.18E+01	38.99	1.72E+02	2.98E+01
	17	768.19	764 -	770	2.14E+01	26.84	1.15E+02	2.07E+01
	18	772.66	771 -	775	2.00E+01	19.67	6.60E+01	1.44E+01
	19	795.74	792 -	798	2.57E+01	20.60	5.65E+01	1.47E+01
	20	861.56	857 -	866	4.30E+01	27.06	8.00E+01	1.95E+01
M	21	902.72	900 -	921	1.34E+01	12.81	3.58E+01	9.84E+00
m	22	911.49	900 -	921	1.20E+02	27.22	5.09E+01	1.17E+01
M	23	961.58	954 -	976	1.20E+01	17.75	3.96E+01	1.04E+01

Analysis Report for 1707091-20

HTC-A08-BKGD02-4248-01

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
m	24	964.96	954 -	976	4.47E+01	22.80	4.97E+01	1.16E+01
m	25	969.17	954 -	976	5.82E+01	25.37	5.58E+01	1.23E+01
m	26	973.02	954 -	976	1.80E+01	22.27	6.07E+01	1.28E+01
	27	1082.38	1073 -	1090	6.53E+01	33.96	8.14E+01	2.45E+01
	28	1104.57	1100 -	1109	2.64E+01	25.20	7.72E+01	1.89E+01
M	29	1120.92	1116 -	1136	5.29E+01	24.01	6.06E+01	1.28E+01
m	30	1133.74	1116 -	1136	1.37E+01	19.40	6.80E+01	1.36E+01
	31	1238.98	1233 -	1247	4.60E+01	41.10	1.62E+02	3.19E+01
	32	1378.01	1372 -	1383	3.07E+01	21.45	4.26E+01	1.51E+01
	33	1461.09	1453 -	1466	6.83E+02	54.63	2.80E+01	1.30E+01
	34	1527.41	1522 -	1529	8.00E+00	8.94	8.00E+00	5.70E+00
M	35	1587.43	1584 -	1596	1.36E+01	8.49	4.00E+00	3.29E+00
m	36	1593.26	1584 -	1596	1.82E+01	11.51	9.00E+00	4.93E+00
	37	1631.04	1626 -	1634	1.05E+01	8.50	4.92E+00	4.51E+00
	38	1639.28	1635 -	1641	8.55E+00	7.23	2.90E+00	3.49E+00
	39	1647.42	1644 -	1648	4.92E+00	5.50	2.17E+00	2.67E+00
	40	1728.80	1722 -	1733	2.49E+01	12.17	6.29E+00	5.73E+00
	41	1765.08	1760 -	1767	5.20E+01	14.42	0.00E+00	0.00E+00
	42	2103.43	2097 -	2107	1.63E+01	12.19	1.14E+01	7.50E+00
	43	2203.77	2197 -	2205	9.50E+00	9.82	9.00E+00	6.29E+00
	44	2614.63	2606 -	2617	7.07E+01	18.22	6.66E+00	5.77E+00

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

PEAK WITH NID REPORT

Peak Analysis Performed on : 8/24/2017 2:16:16PM

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

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

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
1	76.10	72 -	81	76.41	8.08E+02	123.10	1.70E+03	.....
2	87.33	86 -	89	87.63	1.02E+02	58.82	7.59E+02	SN-126
								CD-109
								NP-237

Analysis Report for 1707091-20

HTC-A08-BKGD02-4248-01

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
									EU-155
	3	92.41	90 -	96	92.70	2.15E+02	83.89	1.10E+03	GA-67
M	4	184.32	181 -	197	184.51	5.78E+01	48.56	4.18E+02	HO-166M
m	5	194.29	181 -	197	194.48	5.72E+01	46.33	3.83E+02	.....
	6	209.45	206 -	215	209.62	9.53E+01	79.84	8.59E+02	CM-243
									GA-67
M	7	238.76	235 -	247	238.90	5.38E+02	58.45	2.33E+02	PB-212
m	8	242.08	235 -	247	242.21	9.44E+01	40.35	2.45E+02	.....
	9	270.10	266 -	273	270.21	7.60E+01	54.63	4.44E+02	.....
	10	295.20	292 -	298	295.27	2.42E+02	51.87	3.11E+02	PB-214
	11	337.20	331 -	341	337.23	1.29E+02	62.42	4.51E+02	.....
	12	351.93	348 -	355	351.95	3.68E+02	55.50	2.68E+02	PB-214
	13	510.94	505 -	516	510.80	1.27E+02	55.14	3.12E+02	.....
	14	583.27	578 -	587	583.05	2.01E+02	49.84	2.40E+02	TL-208
	15	609.37	605 -	612	609.12	2.57E+02	42.94	1.35E+02	BI-214
	16	726.95	721 -	731	726.58	5.18E+01	38.99	1.72E+02	BI-212
	17	768.19	764 -	770	767.79	2.14E+01	26.84	1.15E+02	.....
	18	772.66	771 -	775	772.26	2.00E+01	19.67	6.60E+01	.....
	19	795.74	792 -	798	795.31	2.57E+01	20.60	5.65E+01	CS-134
	20	861.56	857 -	866	861.07	4.30E+01	27.06	8.00E+01	.....
M	21	902.72	900 -	921	902.20	1.34E+01	12.81	3.58E+01	.....
m	22	911.49	900 -	921	910.95	1.20E+02	27.22	5.09E+01	TL-204
									AC-228
M	23	961.58	954 -	976	961.00	1.20E+01	17.75	3.96E+01	.....
m	24	964.96	954 -	976	964.37	4.47E+01	22.80	4.97E+01	EU-152
m	25	969.17	954 -	976	968.58	5.82E+01	25.37	5.58E+01	AC-228
m	26	973.02	954 -	976	972.42	1.80E+01	22.27	6.07E+01	.....
	27	1082.38	1073 -	1090	1081.69	6.53E+01	33.96	8.14E+01	.....
	28	1104.57	1100 -	1109	1103.85	2.64E+01	25.20	7.72E+01	.....
M	29	1120.92	1116 -	1136	1120.19	5.29E+01	24.01	6.06E+01	TA-182
									SC-46
									BI-214
m	30	1133.74	1116 -	1136	1133.00	1.37E+01	19.40	6.80E+01	.....
	31	1238.98	1233 -	1247	1238.14	4.60E+01	41.10	1.62E+02	CO-56
	32	1378.01	1372 -	1383	1377.05	3.07E+01	21.45	4.26E+01	.....
	33	1461.09	1453 -	1466	1460.07	6.83E+02	54.63	2.80E+01	K-40
	34	1527.41	1522 -	1529	1526.33	8.00E+00	8.94	8.00E+00	.....
M	35	1587.43	1584 -	1596	1586.30	1.36E+01	8.49	4.00E+00	.....
m	36	1593.26	1584 -	1596	1592.12	1.82E+01	11.51	9.00E+00	.....
	37	1631.04	1626 -	1634	1629.87	1.05E+01	8.50	4.92E+00	.....
	38	1639.28	1635 -	1641	1638.11	8.55E+00	7.23	2.90E+00	.....
	39	1647.42	1644 -	1648	1646.25	4.92E+00	5.50	2.17E+00	.....
	40	1728.80	1722 -	1733	1727.56	2.49E+01	12.17	6.29E+00	.....
	41	1765.08	1760 -	1767	1763.81	5.20E+01	14.42	0.00E+00	BI-214
	42	2103.43	2097 -	2107	2101.91	1.63E+01	12.19	1.14E+01	.....
	43	2203.77	2197 -	2205	2202.17	9.50E+00	9.82	9.00E+00	BI-214
	44	2614.63	2606 -	2617	2612.76	7.07E+01	18.22	6.66E+00	TL-208

Analysis Report for 1707091-20

HTC-A08-BKGD02-4248-01

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 : 8/24/2017 2:16:16PM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	76.10	8.08E+02	123.10	2.63E-02	2.11E-03
	2	87.33	1.02E+02	58.82	2.70E-02	2.41E-03
	3	92.41	2.15E+02	83.89	2.70E-02	2.34E-03
M	4	184.32	5.78E+01	48.56	2.04E-02	1.54E-03
m	5	194.29	5.72E+01	46.33	1.98E-02	1.50E-03
	6	209.45	9.53E+01	79.84	1.88E-02	1.43E-03
M	7	238.76	5.38E+02	58.45	1.72E-02	1.30E-03
m	8	242.08	9.44E+01	40.35	1.71E-02	1.28E-03
	9	270.10	7.60E+01	54.63	1.58E-02	1.16E-03
	10	295.20	2.42E+02	51.87	1.48E-02	1.10E-03
	11	337.20	1.29E+02	62.42	1.35E-02	1.04E-03
	12	351.93	3.68E+02	55.50	1.31E-02	1.02E-03
	13	510.94	1.27E+02	55.14	9.87E-03	8.65E-04
	14	583.27	2.01E+02	49.84	8.90E-03	8.02E-04
	15	609.37	2.57E+02	42.94	8.60E-03	7.80E-04
	16	726.95	5.18E+01	38.99	7.47E-03	6.71E-04
	17	768.19	2.14E+01	26.84	7.14E-03	6.31E-04
	18	772.66	2.00E+01	19.67	7.11E-03	6.27E-04
	19	795.74	2.57E+01	20.60	6.94E-03	6.05E-04
	20	861.56	4.30E+01	27.06	6.50E-03	5.41E-04
M	21	902.72	1.34E+01	12.81	6.26E-03	5.05E-04
m	22	911.49	1.20E+02	27.22	6.21E-03	5.01E-04
M	23	961.58	1.20E+01	17.75	5.94E-03	4.84E-04
m	24	964.96	4.47E+01	22.80	5.92E-03	4.83E-04
m	25	969.17	5.82E+01	25.37	5.90E-03	4.81E-04
m	26	973.02	1.80E+01	22.27	5.88E-03	4.80E-04
	27	1082.38	6.53E+01	33.96	5.39E-03	4.42E-04
	28	1104.57	2.64E+01	25.20	5.30E-03	4.34E-04
M	29	1120.92	5.29E+01	24.01	5.24E-03	4.28E-04
m	30	1133.74	1.37E+01	19.40	5.19E-03	4.24E-04
	31	1238.98	4.60E+01	41.10	4.84E-03	4.16E-04
	32	1378.01	3.07E+01	21.45	4.45E-03	4.12E-04
	33	1461.09	6.83E+02	54.63	4.26E-03	3.88E-04
	34	1527.41	8.00E+00	8.94	4.13E-03	3.68E-04

Analysis Report for 1707091-20

HTC-A08-BKGD02-4248-01

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
M	35	1587.43	1.36E+01	8.49	4.02E-03	3.51E-04
m	36	1593.26	1.82E+01	11.51	4.01E-03	3.49E-04
	37	1631.04	1.05E+01	8.50	3.94E-03	3.38E-04
	38	1639.28	8.55E+00	7.23	3.93E-03	3.36E-04
	39	1647.42	4.92E+00	5.50	3.92E-03	3.34E-04
	40	1728.80	2.49E+01	12.17	3.79E-03	3.10E-04
	41	1765.08	5.20E+01	14.42	3.75E-03	3.00E-04
	42	2103.43	1.63E+01	12.19	3.41E-03	2.79E-04
	43	2203.77	9.50E+00	9.82	3.34E-03	2.79E-04
	44	2614.63	7.07E+01	18.22	3.20E-03	2.79E-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 : 8/24/2017 2:16:16PM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000055574.CNF

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	1	76.10	8.08E+02	123.10			8.08E+02	1.23E+02
	2	87.33	1.02E+02	58.82			1.02E+02	5.88E+01
	3	92.41	2.15E+02	83.89	4.88E+01	1.30E+00	1.66E+02	8.39E+01
M	4	184.32	5.78E+01	48.56			5.78E+01	4.86E+01
m	5	194.29	5.72E+01	46.33			5.72E+01	4.63E+01
	6	209.45	9.53E+01	79.84			9.53E+01	7.98E+01
M	7	238.76	5.38E+02	58.45	7.09E+00	6.85E+00	5.31E+02	5.88E+01
m	8	242.08	9.44E+01	40.35			9.44E+01	4.03E+01
	9	270.10	7.60E+01	54.63			7.60E+01	5.46E+01
	10	295.20	2.42E+02	51.87			2.42E+02	5.19E+01
	11	337.20	1.29E+02	62.42			1.29E+02	6.24E+01
	12	351.93	3.68E+02	55.50	1.04E+01	5.08E+00	3.58E+02	5.57E+01
	13	510.94	1.27E+02	55.14	7.08E+01	4.94E+00	5.61E+01	5.54E+01
	14	583.27	2.01E+02	49.84	5.65E+00	3.57E+00	1.95E+02	5.00E+01
	15	609.37	2.57E+02	42.94	1.07E+01	3.96E+00	2.47E+02	4.31E+01
	16	726.95	5.18E+01	38.99			5.18E+01	3.90E+01
	17	768.19	2.14E+01	26.84			2.14E+01	2.68E+01
	18	772.66	2.00E+01	19.67			2.00E+01	1.97E+01
	19	795.74	2.57E+01	20.60			2.57E+01	2.06E+01
	20	861.56	4.30E+01	27.06			4.30E+01	2.71E+01

Analysis Report for 1707091-20

HTC-A08-BKGD02-4248-01

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
M	21	902.72	1.34E+01	12.81			1.34E+01	1.28E+01
m	22	911.49	1.20E+02	27.22	2.63E+00	2.49E+00	1.18E+02	2.73E+01
M	23	961.58	1.20E+01	17.75			1.20E+01	1.77E+01
m	24	964.96	4.47E+01	22.80			4.47E+01	2.28E+01
m	25	969.17	5.82E+01	25.37			5.82E+01	2.54E+01
m	26	973.02	1.80E+01	22.27			1.80E+01	2.23E+01
	27	1082.38	6.53E+01	33.96			6.53E+01	3.40E+01
	28	1104.57	2.64E+01	25.20			2.64E+01	2.52E+01
M	29	1120.92	5.29E+01	24.01	2.45E+00	2.38E+00	5.05E+01	2.41E+01
m	30	1133.74	1.37E+01	19.40			1.37E+01	1.94E+01
	31	1238.98	4.60E+01	41.10			4.60E+01	4.11E+01
	32	1378.01	3.07E+01	21.45			3.07E+01	2.14E+01
	33	1461.09	6.83E+02	54.63	5.90E+00	2.63E+00	6.77E+02	5.47E+01
	34	1527.41	8.00E+00	8.94			8.00E+00	8.94E+00
M	35	1587.43	1.36E+01	8.49			1.36E+01	8.49E+00
m	36	1593.26	1.82E+01	11.51			1.82E+01	1.15E+01
	37	1631.04	1.05E+01	8.50			1.05E+01	8.50E+00
	38	1639.28	8.55E+00	7.23			8.55E+00	7.23E+00
	39	1647.42	4.92E+00	5.50			4.92E+00	5.50E+00
	40	1728.80	2.49E+01	12.17			2.49E+01	1.22E+01
	41	1765.08	5.20E+01	14.42	3.33E+00	1.73E+00	4.87E+01	1.45E+01
	42	2103.43	1.63E+01	12.19			1.63E+01	1.22E+01
	43	2203.77	9.50E+00	9.82			9.50E+00	9.82E+00
	44	2614.63	7.07E+01	18.22	4.77E+00	1.52E+00	6.59E+01	1.83E+01

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

AREA CORRECTION REPORT
REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 8/24/2017 2:16:16PM

Ref. Peak Energy : 0.00 Reference Date :
Peak Ratio : 0.00 Uncertainty : 0.00
Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000055574.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	76.10	8.08E+02	123.10			8.08E+02	1.23E+02
	2	87.33	1.02E+02	58.82			1.02E+02	5.88E+01
	3	92.41	2.15E+02	83.89	4.88E+01	1.30E+00	1.66E+02	8.39E+01
M	4	184.32	5.78E+01	48.56			5.78E+01	4.86E+01

Analysis Report for 1707091-20

HTC-A08-BKGD02-4248-01

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
m	5	194.29	5.72E+01	46.33			5.72E+01	4.63E+01
	6	209.45	9.53E+01	79.84			9.53E+01	7.98E+01
M	7	238.76	5.38E+02	58.45	7.09E+00	6.85E+00	5.31E+02	5.88E+01
m	8	242.08	9.44E+01	40.35			9.44E+01	4.03E+01
	9	270.10	7.60E+01	54.63			7.60E+01	5.46E+01
	10	295.20	2.42E+02	51.87			2.42E+02	5.19E+01
	11	337.20	1.29E+02	62.42			1.29E+02	6.24E+01
	12	351.93	3.68E+02	55.50	1.04E+01	5.08E+00	3.58E+02	5.57E+01
	13	510.94	1.27E+02	55.14	7.08E+01	4.94E+00	5.61E+01	5.54E+01
	14	583.27	2.01E+02	49.84	5.65E+00	3.57E+00	1.95E+02	5.00E+01
	15	609.37	2.57E+02	42.94	1.07E+01	3.96E+00	2.47E+02	4.31E+01
	16	726.95	5.18E+01	38.99			5.18E+01	3.90E+01
	17	768.19	2.14E+01	26.84			2.14E+01	2.68E+01
	18	772.66	2.00E+01	19.67			2.00E+01	1.97E+01
	19	795.74	2.57E+01	20.60			2.57E+01	2.06E+01
	20	861.56	4.30E+01	27.06			4.30E+01	2.71E+01
M	21	902.72	1.34E+01	12.81			1.34E+01	1.28E+01
m	22	911.49	1.20E+02	27.22	2.63E+00	2.49E+00	1.18E+02	2.73E+01
M	23	961.58	1.20E+01	17.75			1.20E+01	1.77E+01
m	24	964.96	4.47E+01	22.80			4.47E+01	2.28E+01
m	25	969.17	5.82E+01	25.37			5.82E+01	2.54E+01
m	26	973.02	1.80E+01	22.27			1.80E+01	2.23E+01
	27	1082.38	6.53E+01	33.96			6.53E+01	3.40E+01
	28	1104.57	2.64E+01	25.20			2.64E+01	2.52E+01
M	29	1120.92	5.29E+01	24.01	2.45E+00	2.38E+00	5.05E+01	2.41E+01
m	30	1133.74	1.37E+01	19.40			1.37E+01	1.94E+01
	31	1238.98	4.60E+01	41.10			4.60E+01	4.11E+01
	32	1378.01	3.07E+01	21.45			3.07E+01	2.14E+01
	33	1461.09	6.83E+02	54.63	5.90E+00	2.63E+00	6.77E+02	5.47E+01
	34	1527.41	8.00E+00	8.94			8.00E+00	8.94E+00
M	35	1587.43	1.36E+01	8.49			1.36E+01	8.49E+00
m	36	1593.26	1.82E+01	11.51			1.82E+01	1.15E+01
	37	1631.04	1.05E+01	8.50			1.05E+01	8.50E+00
	38	1639.28	8.55E+00	7.23			8.55E+00	7.23E+00
	39	1647.42	4.92E+00	5.50			4.92E+00	5.50E+00
	40	1728.80	2.49E+01	12.17			2.49E+01	1.22E+01
	41	1765.08	5.20E+01	14.42	3.33E+00	1.73E+00	4.87E+01	1.45E+01
	42	2103.43	1.63E+01	12.19			1.63E+01	1.22E+01
	43	2203.77	9.50E+00	9.82			9.50E+00	9.82E+00
	44	2614.63	7.07E+01	18.22	4.77E+00	1.52E+00	6.59E+01	1.83E+01

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

Analysis Report for 1707091-20

HTC-A08-BKGD02-4248-01

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	0.987	1460.81	*	10.67	1.43E+01	1.76E+00
CD-109	0.924	88.03	*	3.72	1.13E+00	6.65E-01
SN-126	0.991	87.57	*	37.00	9.78E-02	5.72E-02
TL-208	0.888	583.14	*	30.22	6.97E-01	1.89E-01
		860.37		4.48		
		2614.66	*	35.85	5.52E-01	1.61E-01
BI-212	0.761	727.17	*	11.80	5.64E-01	4.27E-01
		1620.62		2.75		
PB-212	0.892	238.63	*	44.60	6.63E-01	8.88E-02
		300.09		3.41		
BI-214	0.976	609.31	*	46.30	5.94E-01	1.17E-01
		1120.29	*	15.10	6.12E-01	2.97E-01
		1764.49	*	15.80	7.89E-01	2.44E-01
		2204.22	*	4.98	5.48E-01	5.68E-01
PB-214	1.000	295.21	*	19.19	8.14E-01	1.85E-01
		351.92	*	37.19	7.07E-01	1.23E-01
AC-228	0.543	338.32		11.40		
		911.07	*	27.70	6.57E-01	1.61E-01
		969.11	*	16.60	5.69E-01	2.53E-01
NP-237	0.897	86.50	*	12.60	2.87E-01	1.68E-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 : 8/24/2017 2:16:16PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

Analysis Report for 1707091-20

HTC-A08-BKGD02-4248-01

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	76.10	2.24528E-01	7.61		
	3	92.41	4.61109E-02	25.27	Tol.	GA-67
M	4	184.32	1.60605E-02	42.00	Tol.	HO-166M
m	5	194.29	1.58868E-02	40.50		
	6	209.45	2.64648E-02	41.90	Tol.	GA-67 CM-243
m	8	242.08	2.62321E-02	21.36		
	9	270.10	2.11102E-02	35.94		
	11	337.20	3.56944E-02	24.29		
	13	510.94	1.55846E-02	49.33		
	17	768.19	5.95112E-03	62.63		
	18	772.66	5.56080E-03	49.13		
	19	795.74	7.14763E-03	40.02	Tol.	CS-134
	20	861.56	1.19444E-02	31.46		
M	21	902.72	3.72897E-03	47.70		
M	23	961.58	3.32487E-03	74.14	Sum	
m	24	964.96	1.24243E-02	25.49	Sum	
m	26	973.02	4.99147E-03	61.95		
	27	1082.38	1.81433E-02	25.99		
	28	1104.57	7.33974E-03	47.68		
m	30	1133.74	3.81339E-03	70.67		
	31	1238.98	1.27822E-02	44.66		
	32	1378.01	8.52297E-03	34.95		
	34	1527.41	2.22222E-03	55.90		
M	35	1587.43	3.76635E-03	31.29		
m	36	1593.26	5.05774E-03	31.61	D-Esc	
	37	1631.04	2.92735E-03	40.33		
	38	1639.28	2.37500E-03	42.27	Sum	
	39	1647.42	1.36574E-03	55.93		
	40	1728.80	6.90476E-03	24.47		
	42	2103.43	4.53283E-03	37.34	S-Esc	

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

NUCLIDE IDENTIFICATION REPORT

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

IDENTIFIED NUCLIDES

Analysis Report for 1707091-20

HTC-A08-BKGD02-4248-01

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/grams)	Activity Uncertainty
K-40	0.98	1460.81	*	10.67	1.43E+01	1.76E+00
CD-109	0.92	88.03	*	3.72	1.13E+00	6.65E-01
SN-126	0.99	87.57	*	37.00	9.78E-02	5.72E-02
TL-208	0.88	583.14	*	30.22	6.97E-01	1.89E-01
		860.37		4.48		
		2614.66	*	35.85	5.52E-01	1.61E-01
BI-212	0.76	727.17	*	11.80	5.64E-01	4.27E-01
		1620.62		2.75		
PB-212	0.89	238.63	*	44.60	6.63E-01	8.88E-02
		300.09		3.41		
BI-214	0.97	609.31	*	46.30	5.94E-01	1.17E-01
		1120.29	*	15.10	6.12E-01	2.97E-01
		1764.49	*	15.80	7.89E-01	2.44E-01
		2204.22	*	4.98	5.48E-01	5.68E-01
PB-214	1.00	295.21	*	19.19	8.14E-01	1.85E-01
		351.92	*	37.19	7.07E-01	1.23E-01
AC-228	0.54	338.32		11.40		
		911.07	*	27.70	6.57E-01	1.61E-01
		969.11	*	16.60	5.69E-01	2.53E-01
NP-237	0.89	86.50	*	12.60	2.87E-01	1.68E-01

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

INTERFERENCE CORRECTED REPORT

	Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
	K-40	0.987	1.43E+01	1.76E+00	
?	CD-109	0.924	1.13E+00	6.65E-01	
?	SN-126	0.991	9.78E-02	5.72E-02	
	TL-208	0.888	6.13E-01	1.22E-01	
	BI-212	0.761	5.64E-01	4.27E-01	
	PB-212	0.892	6.63E-01	8.88E-02	
	BI-214	0.976	6.26E-01	9.79E-02	

Analysis Report for 1707091-20

HTC-A08-BKGD02-4248-01

	Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
	PB-214	1.000	7.40E-01	1.02E-01	
	AC-228	0.543	6.32E-01	1.36E-01	
?	NP-237	0.897	2.87E-01	1.68E-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 1707091-20

HTC-A08-BKGD02-4248-01

UNIDENTIFIED PEAKS

Peak Locate Performed on : 8/24/2017 2:16:16PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	76.10	2.24528E-01	7.61		
	3	92.41	4.61109E-02	25.27	Tol.	GA-67
M	4	184.32	1.60605E-02	42.00	Tol.	HO-166M
m	5	194.29	1.58868E-02	40.50		
	6	209.45	2.64648E-02	41.90	Tol.	GA-67 CM-243
m	8	242.08	2.62321E-02	21.36		
	9	270.10	2.11102E-02	35.94		
	11	337.20	3.56944E-02	24.29		
	13	510.94	1.55846E-02	49.33		
	17	768.19	5.95112E-03	62.63		
	18	772.66	5.56080E-03	49.13		
	19	795.74	7.14763E-03	40.02	Tol.	CS-134
	20	861.56	1.19444E-02	31.46		
M	21	902.72	3.72897E-03	47.70		
M	23	961.58	3.32487E-03	74.14	Sum	
m	24	964.96	1.24243E-02	25.49	Sum	
m	26	973.02	4.99147E-03	61.95		
	27	1082.38	1.81433E-02	25.99		
	28	1104.57	7.33974E-03	47.68		
m	30	1133.74	3.81339E-03	70.67		
	31	1238.98	1.27822E-02	44.66		
	32	1378.01	8.52297E-03	34.95		
	34	1527.41	2.22222E-03	55.90		
M	35	1587.43	3.76635E-03	31.29		
m	36	1593.26	5.05774E-03	31.61	D-Esc	
	37	1631.04	2.92735E-03	40.33		
	38	1639.28	2.37500E-03	42.27	Sum	
	39	1647.42	1.36574E-03	55.93		
	40	1728.80	6.90476E-03	24.47		
	42	2103.43	4.53283E-03	37.34	S-Esc	

Analysis Report for 1707091-20

HTC-A08-BKGD02-4248-01

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	-2.21E-01	1.25E+00	1.25E+00
+	NA-22	1274.54		99.94	7.00E-03	6.52E-02	6.52E-02
+	@ NA-24	1368.53		99.99	1.00E+26	1.00E+26	1.00E+26
	@	2754.09		99.86	1.00E+26		1.00E+26
+	AL-26	1808.65		99.76	0.00E+00	3.68E-02	3.68E-02
+	K-40	1460.81	*	10.67	1.43E+01	6.40E-01	6.40E-01
+	@ AR-41	1293.64		99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88		94.40	1.31E-02	3.49E-02	3.49E-02
		78.34		96.00	3.44E-02		3.93E-02
+	SC-46	889.25		99.98	4.89E-02	1.32E-01	1.32E-01
		1120.51		99.99	2.57E-01		1.97E-01
+	V-48	983.52		99.98	2.64E-02	4.48E+00	4.48E+00
		1312.10		97.50	3.71E+00		4.89E+00
+	CR-51	320.08		9.83	1.45E+00	4.44E+00	4.44E+00
+	MN-54	834.83		99.97	2.45E-03	6.23E-02	6.23E-02
+	CO-56	846.75		99.96	-2.87E-02	1.20E-01	1.20E-01
		1037.75		14.03	4.36E-01		1.01E+00
		1238.25		67.00	2.90E-01		3.12E-01
		1771.40		15.51	-7.32E-01		5.28E-01
		2598.48		16.90	1.44E-02		5.19E-01
+	CO-57	122.06		85.51	-3.06E-02	3.64E-02	3.64E-02
		136.48		10.60	1.19E-01		4.08E-01
+	CO-58	810.76		99.40	-1.22E-01	1.38E-01	1.38E-01
+	FE-59	1099.22		56.50	1.71E-02	4.38E-01	4.38E-01
		1291.56		43.20	1.12E-01		6.32E-01
+	CO-60	1173.22		100.00	3.92E-02	5.34E-02	7.20E-02
		1332.49		100.00	-2.15E-02		5.34E-02
+	ZN-65	1115.52		50.75	1.76E-03	1.39E-01	1.39E-01
+	GA-67	93.31		35.70	3.09E+08	1.97E+08	1.97E+08
		208.95		2.24	2.71E+09		4.01E+09
		300.22		16.00	4.41E+08		4.82E+08
+	SE-75	121.11		16.70	-5.52E-02	1.00E-01	2.63E-01

Analysis Report for 1707091-20

HTC-A08-BKGD02-4248-01

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	SE-75	136.00		59.20	-3.37E-02	1.00E-01	1.00E-01
		264.65		59.80	5.42E-03		1.07E-01
		279.53		25.20	1.85E-03		2.65E-01
		400.65		11.40	1.59E-02		5.90E-01
+	RB-82	776.52		13.00	5.89E-01	5.96E+00	5.96E+00
+	RB-83	520.41		46.00	9.95E-02	1.90E-01	1.90E-01
		529.64		30.30	-1.33E-01		2.72E-01
		552.65		16.40	3.06E-01		5.50E-01
+	KR-85	513.99		0.43	-1.00E+01	1.04E+01	1.04E+01
+	SR-85	513.99		99.27	-1.27E-01	1.31E-01	1.31E-01
+	Y-88	898.02		93.40	5.72E-02	7.65E-02	1.08E-01
		1836.01		99.38	1.53E-02		7.65E-02
+	MO-93	263.06		56.72	1.70E-03	4.45E-02	6.24E-02
		684.67		99.68	-2.00E-02		4.45E-02
		1477.11		99.08	-1.17E-02		4.54E-02
+	NB-93M	16.57		9.43	0.00E+00	5.61E+00	5.61E+00
+	NB-94	702.63		100.00	-1.14E-02	4.84E-02	4.84E-02
		871.10		100.00	-3.26E-03		5.20E-02
+	NB-95	765.79		99.81	-5.94E-03	4.26E-01	4.26E-01
+	NB-95M	235.69		25.00	-3.41E+08	5.17E+07	5.17E+07
+	ZR-95	724.18		43.70	2.28E-01	2.71E-01	4.31E-01
		756.72		55.30	6.56E-02		2.71E-01
+	MO-99	181.06		6.20	-5.29E+09	4.38E+10	5.87E+10
		739.58		12.80	-4.17E+09		4.38E+10
		778.00		4.50	2.24E+08		1.21E+11
+	RU-103	497.08		89.00	6.11E-02	2.51E-01	2.51E-01
+	RU-106	621.84		9.80	-2.45E-01	4.93E-01	4.93E-01
+	AG-108M	433.93		89.90	6.94E-03	4.31E-02	4.31E-02
		614.37		90.40	1.62E-02		4.89E-02
		722.95		90.50	-2.54E-02		6.42E-02
+	CD-109	88.03	*	3.72	1.13E+00	1.04E+00	1.04E+00
+	AG-110M	657.75		93.14	4.30E-02	7.11E-02	7.11E-02
		677.61		10.53	1.17E-01		5.68E-01
		706.67		16.46	1.01E-01		4.29E-01
		763.93		21.98	-6.17E-02		3.07E-01
		884.67		71.63	-5.89E-02		9.83E-02
		1384.27		23.94	-3.39E-02		2.48E-01
+	CD-113M	263.70		0.02	3.50E+01	1.57E+02	1.57E+02
+	SN-113	255.12		1.93	1.29E+00	1.04E-01	3.53E+00
		391.69		64.90	-7.20E-02		1.04E-01
+	TE123M	159.00		84.10	-2.69E-02	7.14E-02	7.14E-02
+	SB-124	602.71		97.87	4.06E-02	1.53E-01	1.53E-01
		645.85		7.26	7.14E-01		2.03E+00
		722.78		11.10	-1.22E-01		1.57E+00
		1691.02		49.00	-7.16E-02		2.13E-01
+	I-125	35.49		6.49	-3.67E+01	4.91E+00	4.91E+00
+	SB-125	176.33		6.89	-1.64E-01	1.51E-01	5.06E-01
		427.89		29.33	6.06E-02		1.51E-01

Analysis Report for 1707091-20

HTC-A08-BKGD02-4248-01

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	SB-125	463.38		10.35	8.80E-02	1.51E-01	4.53E-01
		600.56		17.80	-1.09E-01		2.76E-01
		635.90		11.32	-1.30E-01		4.13E-01
+	SB-126	414.70		83.30	-4.01E+00	1.24E+01	1.24E+01
		666.33		99.60	-4.40E+00		1.41E+01
		695.00		99.60	8.28E+00		1.50E+01
		720.50		53.80	-3.29E+00		2.66E+01
+	SN-126	87.57	*	37.00	9.78E-02	9.00E-02	9.00E-02
+	SB-127	473.00		25.00	-1.36E+06	1.05E+07	1.19E+07
		685.20		35.70	5.74E+06		1.05E+07
		783.80		14.70	2.00E+06		2.81E+07
+	I-129	29.78		57.00	2.81E-01	3.18E-01	3.18E-01
		33.60		13.20	7.93E+00		1.68E+00
		39.58		7.52	6.28E-01		9.51E-01
+	I-131	284.30		6.05	1.83E+01	2.74E+02	3.44E+03
		364.48		81.20	1.34E+02		2.74E+02
		636.97		7.26	-4.15E+02		3.71E+03
		722.89		1.80	-7.74E+03		1.95E+04
+	TE-132	49.72		13.10	-4.84E+07	8.80E+07	6.01E+08
		228.16		88.00	1.92E+07		8.80E+07
+	BA-133	81.00		33.00	-4.52E-02	6.01E-02	8.46E-02
		302.84		17.80	-1.90E-01		1.96E-01
		356.01		60.00	5.21E-03		6.01E-02
+	@ I-133	529.87		86.30	1.00E+26	1.00E+26	1.00E+26
+	XE-133	81.00		38.00	-2.44E+04	4.56E+04	4.56E+04
+	CS-134	563.23		8.38	-2.46E-02	5.56E-02	4.89E-01
		569.32		15.43	2.80E-02		2.77E-01
		604.70		97.60	1.52E-02		5.56E-02
		795.84		85.40	3.22E-02		6.56E-02
		801.93		8.73	-2.11E-01		5.81E-01
+	CS-135	268.24		16.00	9.82E-02	2.58E-01	2.58E-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	-3.77E+01	1.09E+01	9.25E+01
		163.89		4.61	-8.69E+00		1.56E+02
		176.55		13.56	-1.59E+01		4.92E+01
		273.65		12.66	-1.11E+01		5.85E+01
		340.57		48.50	4.66E+00		1.82E+01
		818.50		99.70	5.19E-02		1.09E+01
		1048.07		79.60	7.11E+00		1.48E+01
		1235.34		19.70	3.02E+01		8.33E+01
+	CS-137	661.65		85.12	-5.09E-03	5.90E-02	5.90E-02
+	LA-138	788.74		34.00	7.83E-02	8.09E-02	1.53E-01
		1435.80		66.00	-1.37E-02		8.09E-02
+	CE-139	165.85		80.35	-7.04E-02	7.26E-02	7.26E-02
+	BA-140	162.64		6.70	-4.67E+00	3.65E+01	1.24E+02
		304.84		4.50	-2.82E+01		1.79E+02
		423.70		3.20	1.14E+02		3.08E+02

Analysis Report for 1707091-20

HTC-A08-BKGD02-4248-01

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
	BA-140	437.55	2.00	2.99E+02	3.65E+01	4.68E+02
		537.32	25.00	-3.51E+00		3.65E+01
+	LA-140	328.77	20.50	8.96E+00	1.44E+01	4.59E+01
		487.03	45.50	-6.82E+00		1.70E+01
		815.85	23.50	8.35E+00		5.60E+01
		1596.49	95.49	-1.50E+00		1.44E+01
+	CE-141	145.44	48.40	3.07E-01	6.37E-01	6.37E-01
+	@ 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	-9.52E-02	3.00E-01	3.00E-01
+	PM-144	476.78	42.00	-1.79E-02	5.46E-02	1.02E-01
		618.01	98.60	1.33E-02		5.46E-02
		696.49	99.49	2.90E-02		6.42E-02
+	PM-145	36.85	21.70	2.11E-02	2.09E-01	4.02E-01
		37.36	39.70	-6.25E-02		2.09E-01
		42.30	15.10	-1.07E-01		3.21E-01
		72.40	2.31	-4.83E+00		1.43E+00
+	PM-146	453.90	39.94	1.71E-02	9.58E-02	9.58E-02
		735.90	14.01	3.45E-01		4.12E-01
		747.13	13.10	-4.50E-02		3.83E-01
+	ND-147	91.11	28.90	-9.40E+01	6.18E+01	6.18E+01
		531.02	13.10	5.64E+00		1.78E+02
+	PM-149	285.90	3.10	-3.33E+13	6.15E+13	6.15E+13
+	EU-152	121.78	20.50	-1.00E-01	1.19E-01	1.19E-01
		244.69	5.40	-9.21E-01		7.09E-01
		344.27	19.13	-4.50E-03		1.86E-01
		778.89	9.20	9.77E-04		5.28E-01
		964.01	10.40	-4.95E-01		6.79E-01
		1085.78	7.22	-2.22E-01		7.86E-01
		1112.02	9.60	5.76E-03		6.03E-01
		1407.95	14.94	3.10E-01		4.72E-01
+	GD-153	97.43	31.30	-4.16E-02	1.07E-01	1.07E-01
		103.18	22.20	-1.09E-01		1.38E-01
+	EU-154	123.07	40.50	3.41E-02	6.55E-02	6.55E-02
		723.30	19.70	-1.19E-01		3.01E-01
		873.19	11.50	2.39E-02		4.72E-01
		996.32	10.30	-1.57E-01		5.36E-01
		1004.76	17.90	-1.16E-01		2.85E-01
		1274.45	35.50	1.87E-02		1.74E-01
+	EU-155	86.50	30.90	1.70E-01	1.15E-01	1.15E-01
		105.30	20.70	8.10E-02		1.29E-01
+	EU-156	811.77	10.40	3.51E+00	5.26E+01	5.26E+01
		1153.47	7.20	2.57E+01		1.01E+02
		1230.71	8.90	1.18E+01		6.91E+01
+	HO-166M	184.41	72.60	9.77E-02	5.95E-02	5.95E-02
		280.45	29.60	-4.54E-02		1.22E-01
		410.94	11.10	3.15E-02		3.31E-01
		711.69	54.10	-1.42E-02		9.91E-02

Analysis Report for 1707091-20

HTC-A08-BKGD02-4248-01

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	TM-171	66.72		0.14	5.27E+00	2.60E+01	2.60E+01
+	HF-172	67.35		5.31	2.58E-01	2.44E-01	6.88E-01
		125.81		11.30	-1.84E-01		2.44E-01
+	LU-172	181.53		20.60	-8.23E+02	2.97E+03	5.79E+03
		900.72		29.81	8.00E+02		5.97E+03
		1093.66		62.50	4.23E+02		2.97E+03
+	LU-173	100.72		5.24	2.08E-01	2.16E-01	5.49E-01
		272.11		21.20	-4.51E-02		2.16E-01
+	HF-175	343.40		84.00	4.60E-02	1.16E-01	1.16E-01
+	LU-176	88.34		13.30	-6.16E-03	3.67E-02	2.41E-01
		201.83		86.00	7.41E-03		4.34E-02
		306.78		94.00	6.63E-03		3.67E-02
+	HF-181	133.02		41.70	1.24E-01	2.03E-01	3.26E-01
		345.85		17.20	-6.75E-02		1.01E+00
		482.03		82.80	-6.06E-02		2.03E-01
+	TA-182	67.75		41.20	5.52E-02	1.47E-01	1.47E-01
		1121.30		34.90	5.47E-01		4.48E-01
		1189.05		16.23	-1.32E-01		7.62E-01
		1221.41		26.98	-8.29E-02		4.99E-01
		1231.02		11.44	1.68E-01		9.86E-01
+	IR-192	308.46		29.68	-2.14E-01	2.26E-01	2.93E-01
		468.07		48.10	6.52E-02		2.26E-01
+	HG-203	279.19		77.30	1.23E-02	2.18E-01	2.18E-01
+	TL-204	374.74		94.11	1.42E-03	3.96E-02	3.96E-02
		899.15		99.16	1.84E-02		5.67E-02
		911.74		91.10	2.33E-01		1.09E-01
+	BI-207	569.67		97.72	4.05E-03	4.02E-02	4.02E-02
		1063.62		74.90	3.50E-02		7.65E-02
+	TL-208	583.14	*	30.22	6.97E-01	1.39E-01	2.53E-01
		860.37		4.48	8.04E-01		1.31E+00
		2614.66	*	35.85	5.52E-01		1.39E-01
+	BI-210M	262.00		45.00	-5.35E-02	7.57E-02	7.57E-02
		300.00		23.00	1.45E-01		1.58E-01
+	PB-210	46.50		4.25	1.13E+00	1.10E+00	1.10E+00
+	PB-211	404.84		2.90	-9.45E-02	1.34E+00	1.34E+00
		831.96		2.90	-9.68E-01		1.57E+00
+	BI-212	727.17	*	11.80	5.64E-01	6.78E-01	6.78E-01
		1620.62		2.75	6.12E-01		1.47E+00
+	PB-212	238.63	*	44.60	6.63E-01	1.56E-01	1.56E-01
		300.09		3.41	9.76E-01		1.07E+00
+	BI-214	609.31	*	46.30	5.94E-01	1.24E-01	1.24E-01
		1120.29	*	15.10	6.12E-01		9.51E-01
		1764.49	*	15.80	7.89E-01		1.52E-01
		2204.22	*	4.98	5.48E-01		8.82E-01
+	PB-214	295.21	*	19.19	8.14E-01	1.38E-01	2.39E-01
		351.92	*	37.19	7.07E-01		1.38E-01
+	RN-219	401.80		6.50	3.04E-02	5.87E-01	5.87E-01
+	RA-223	323.87		3.88	-5.07E-01	8.43E-01	8.43E-01

Analysis Report for 1707091-20

HTC-A08-BKGD02-4248-01

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/grams)	Nuclide MDA (pCi/grams)	Line MDA (pCi/grams)
+	RA-224	240.98		3.95	4.86E+00	1.79E+00	1.79E+00
+	RA-225	40.00		31.00	1.68E+01	2.54E+01	2.54E+01
+	RA-226	186.21		3.28	2.09E+00	1.33E+00	1.33E+00
+	TH-227	50.10		8.40	-3.45E-02	4.23E-01	4.29E-01
		236.00		11.50	-2.79E+00		4.23E-01
		256.20		6.30	-3.86E-01		5.71E-01
+	AC-228	338.32		11.40	6.93E-01	4.37E-01	4.37E-01
		911.07	*	27.70	6.57E-01		4.43E-01
		969.11	*	16.60	5.69E-01		7.64E-01
+	TH-230	48.44		16.90	-9.54E-02	2.32E-01	2.32E-01
		62.85		4.60	6.63E-01		8.13E-01
		67.67		0.37	3.33E+00		8.88E+00
+	PA-231	283.67		1.60	1.14E-02	1.49E+00	2.14E+00
		302.67		2.30	-1.44E+00		1.49E+00
+	TH-231	25.64		14.70	0.00E+00	9.98E-02	9.98E-02
		84.21		6.40	1.39E-01		4.67E-01
+	PA-233	311.98		38.60	-3.53E-01	1.20E+00	1.20E+00
+	PA-234	131.20		20.40	-1.12E-02	1.29E-01	1.29E-01
		733.99		8.80	2.26E-01		6.04E-01
		946.00		12.00	-7.69E-02		3.91E-01
+	PA-234M	1001.03		0.92	8.30E-01	5.83E+00	5.83E+00
+	TH-234	63.29		3.80	7.18E-01	9.68E-01	9.68E-01
+	U-235	143.76		10.50	2.24E-01	3.42E-01	3.42E-01
		163.35		4.70	-4.16E-02		7.48E-01
		205.31		4.70	1.06E-01		7.81E-01
+	NP-237	86.50	*	12.60	2.87E-01	2.64E-01	2.64E-01
+	NP-239	106.10		22.70	5.84E+11	9.30E+11	9.30E+11
		228.18		10.70	6.00E+11		2.76E+12
		277.60		14.10	9.94E+10		2.20E+12
+	AM-241	59.54		35.90	1.85E-02	9.88E-02	9.88E-02
+	AM-243	74.67		66.00	-9.66E-02	6.31E-02	6.31E-02
+	CM-243	209.75		3.29	1.05E+00	2.72E-01	1.31E+00
		228.14		10.60	7.43E-02		3.41E-01
		277.60		14.00	1.23E-02		2.72E-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 1707091-20

HTC-A08-BKGD02-4248-01

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	1.25E+00	1.25E+00	-2.21E-01	5.82E-01
	NA-22	1274.54		99.94	6.52E-02	6.52E-02	7.00E-03	2.96E-02
@	NA-24	1368.53		99.99	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		2754.09		99.86	1.00E+26		1.00E+26	1.00E+20
	AL-26	1808.65		99.76	3.68E-02	3.68E-02	0.00E+00	1.49E-02
+	K-40	1460.81	*	10.67	6.40E-01	6.40E-01	1.43E+01	2.92E-01
@	AR-41	1293.64		99.16	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	TI-44	67.88		94.40	3.49E-02	3.49E-02	1.31E-02	1.69E-02
		78.34		96.00	3.93E-02		3.44E-02	1.91E-02
	SC-46	889.25		99.98	1.32E-01	1.32E-01	4.89E-02	6.13E-02
		1120.51		99.99	1.97E-01		2.57E-01	9.26E-02
	V-48	983.52		99.98	4.48E+00	4.48E+00	2.64E-02	2.06E+00
		1312.10		97.50	4.89E+00		3.71E+00	2.21E+00
	CR-51	320.08		9.83	4.44E+00	4.44E+00	1.45E+00	2.10E+00
	MN-54	834.83		99.97	6.23E-02	6.23E-02	2.45E-03	2.87E-02
	CO-56	846.75		99.96	1.20E-01	1.20E-01	-2.87E-02	5.53E-02
		1037.75		14.03	1.01E+00		4.36E-01	4.65E-01
		1238.25		67.00	3.12E-01		2.90E-01	1.46E-01
		1771.40		15.51	5.28E-01		-7.32E-01	2.10E-01
		2598.48		16.90	5.19E-01		1.44E-02	2.01E-01
	CO-57	122.06		85.51	3.64E-02	3.64E-02	-3.06E-02	1.74E-02
		136.48		10.60	4.08E-01		1.19E-01	1.97E-01
	CO-58	810.76		99.40	1.38E-01	1.38E-01	-1.22E-01	6.37E-02
	FE-59	1099.22		56.50	4.38E-01	4.38E-01	1.71E-02	1.98E-01
		1291.56		43.20	6.32E-01		1.12E-01	2.85E-01
	CO-60	1173.22		100.00	7.20E-02	5.34E-02	3.92E-02	3.34E-02
		1332.49		100.00	5.34E-02		-2.15E-02	2.38E-02
	ZN-65	1115.52		50.75	1.39E-01	1.39E-01	1.76E-03	6.30E-02
	GA-67	93.31		35.70	1.97E+08	1.97E+08	3.09E+08	9.58E+07
		208.95		2.24	4.01E+09		2.71E+09	1.94E+09
		300.22		16.00	4.82E+08		4.41E+08	2.29E+08
	SE-75	121.11		16.70	2.63E-01	1.00E-01	-5.52E-02	1.26E-01
		136.00		59.20	1.00E-01		-3.37E-02	4.84E-02
		264.65		59.80	1.07E-01		5.42E-03	5.11E-02
		279.53		25.20	2.65E-01		1.85E-03	1.27E-01
		400.65		11.40	5.90E-01		1.59E-02	2.78E-01
	RB-82	776.52		13.00	5.96E+00	5.96E+00	5.89E-01	2.76E+00
	RB-83	520.41		46.00	1.90E-01	1.90E-01	9.95E-02	8.85E-02
		529.64		30.30	2.72E-01		-1.33E-01	1.26E-01
		552.65		16.40	5.50E-01		3.06E-01	2.56E-01
	KR-85	513.99		0.43	1.04E+01	1.04E+01	-1.00E+01	4.88E+00
	SR-85	513.99		99.27	1.31E-01	1.31E-01	-1.27E-01	6.18E-02

Analysis Report for 1707091-20

HTC-A08-BKGD02-4248-01

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	Y-88	898.02		93.40	1.08E-01	7.65E-02	5.72E-02	4.97E-02
		1836.01		99.38	7.65E-02		1.53E-02	3.13E-02
	MO-93	263.06		56.72	6.24E-02	4.45E-02	1.70E-03	2.97E-02
		684.67		99.68	4.45E-02		-2.00E-02	2.06E-02
		1477.11		99.08	4.54E-02		-1.17E-02	1.95E-02
	NB-93M	16.57		9.43	5.61E+00	5.61E+00	0.00E+00	0.00E+00
	NB-94	702.63		100.00	4.84E-02	4.84E-02	-1.14E-02	2.25E-02
		871.10		100.00	5.20E-02		-3.26E-03	2.40E-02
	NB-95	765.79		99.81	4.26E-01	4.26E-01	-5.94E-03	1.99E-01
	NB-95M	235.69		25.00	5.17E+07	5.17E+07	-3.41E+08	2.50E+07
	ZR-95	724.18		43.70	4.31E-01	2.71E-01	2.28E-01	2.04E-01
		756.72		55.30	2.71E-01		6.56E-02	1.26E-01
	MO-99	181.06		6.20	5.87E+10	4.38E+10	-5.29E+09	2.82E+10
		739.58		12.80	4.38E+10		-4.17E+09	2.03E+10
		778.00		4.50	1.21E+11		2.24E+08	5.59E+10
	RU-103	497.08		89.00	2.51E-01	2.51E-01	6.11E-02	1.17E-01
	RU-106	621.84		9.80	4.93E-01	4.93E-01	-2.45E-01	2.28E-01
	AG-108M	433.93		89.90	4.31E-02	4.31E-02	6.94E-03	2.03E-02
		614.37		90.40	4.89E-02		1.62E-02	2.28E-02
		722.95		90.50	6.42E-02		-2.54E-02	3.02E-02
+	CD-109	88.03	*	3.72	1.04E+00	1.04E+00	1.13E+00	5.05E-01
	AG-110M	657.75		93.14	7.11E-02	7.11E-02	4.30E-02	3.32E-02
		677.61		10.53	5.68E-01		1.17E-01	2.63E-01
		706.67		16.46	4.29E-01		1.01E-01	2.01E-01
		763.93		21.98	3.07E-01		-6.17E-02	1.43E-01
		884.67		71.63	9.83E-02		-5.89E-02	4.54E-02
		1384.27		23.94	2.48E-01		-3.39E-02	1.08E-01
	CD-113M	263.70		0.02	1.57E+02	1.57E+02	3.50E+01	7.52E+01
	SN-113	255.12		1.93	3.53E+00	1.04E-01	1.29E+00	1.69E+00
		391.69		64.90	1.04E-01		-7.20E-02	4.91E-02
	TE123M	159.00		84.10	7.14E-02	7.14E-02	-2.69E-02	3.44E-02
	SB-124	602.71		97.87	1.53E-01	1.53E-01	4.06E-02	7.14E-02
		645.85		7.26	2.03E+00		7.14E-01	9.43E-01
		722.78		11.10	1.57E+00		-1.22E-01	7.33E-01
		1691.02		49.00	2.13E-01		-7.16E-02	8.47E-02
	I-125	35.49		6.49	4.91E+00	4.91E+00	-3.67E+01	2.37E+00
	SB-125	176.33		6.89	5.06E-01	1.51E-01	-1.64E-01	2.44E-01
		427.89		29.33	1.51E-01		6.06E-02	7.11E-02
		463.38		10.35	4.53E-01		8.80E-02	2.14E-01
		600.56		17.80	2.76E-01		-1.09E-01	1.29E-01
		635.90		11.32	4.13E-01		-1.30E-01	1.92E-01
	SB-126	414.70		83.30	1.24E+01	1.24E+01	-4.01E+00	5.80E+00
		666.33		99.60	1.41E+01		-4.40E+00	6.59E+00
		695.00		99.60	1.50E+01		8.28E+00	7.01E+00
		720.50		53.80	2.66E+01		-3.29E+00	1.24E+01
+	SN-126	87.57	*	37.00	9.00E-02	9.00E-02	9.78E-02	4.37E-02
	SB-127	473.00		25.00	1.19E+07	1.05E+07	-1.36E+06	5.54E+06
		685.20		35.70	1.05E+07		5.74E+06	4.86E+06
		783.80		14.70	2.81E+07		2.00E+06	1.31E+07
	I-129	29.78		57.00	3.18E-01	3.18E-01	2.81E-01	1.53E-01
		33.60		13.20	1.68E+00		7.93E+00	8.26E-01
		39.58		7.52	9.51E-01		6.28E-01	4.59E-01
	I-131	284.30		6.05	3.44E+03	2.74E+02	1.83E+01	1.63E+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-131	364.48	81.20	2.74E+02	2.74E+02	1.34E+02	1.30E+02
	636.97	7.26	3.71E+03		-4.15E+02	1.72E+03
	722.89	1.80	1.95E+04		-7.74E+03	9.19E+03
TE-132	49.72	13.10	6.01E+08	8.80E+07	-4.84E+07	2.89E+08
	228.16	88.00	8.80E+07		1.92E+07	4.22E+07
BA-133	81.00	33.00	8.46E-02	6.01E-02	-4.52E-02	4.08E-02
	302.84	17.80	1.96E-01		-1.90E-01	9.27E-02
	356.01	60.00	6.01E-02		5.21E-03	2.83E-02
@ I-133	529.87	86.30	1.00E+26	1.00E+26	1.00E+26	1.00E+20
XE-133	81.00	38.00	4.56E+04	4.56E+04	-2.44E+04	2.20E+04
CS-134	563.23	8.38	4.89E-01	5.56E-02	-2.46E-02	2.26E-01
	569.32	15.43	2.77E-01		2.80E-02	1.29E-01
	604.70	97.60	5.56E-02		1.52E-02	2.61E-02
	795.84	85.40	6.56E-02		3.22E-02	3.04E-02
	801.93	8.73	5.81E-01		-2.11E-01	2.67E-01
CS-135	268.24	16.00	2.58E-01	2.58E-01	9.82E-02	1.24E-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	9.25E+01	1.09E+01	-3.77E+01	4.47E+01
	163.89	4.61	1.56E+02		-8.69E+00	7.55E+01
	176.55	13.56	4.92E+01		-1.59E+01	2.37E+01
	273.65	12.66	5.85E+01		-1.11E+01	2.79E+01
	340.57	48.50	1.82E+01		4.66E+00	8.70E+00
	818.50	99.70	1.09E+01		5.19E-02	5.06E+00
	1048.07	79.60	1.48E+01		7.11E+00	6.80E+00
	1235.34	19.70	8.33E+01		3.02E+01	3.89E+01
CS-137	661.65	85.12	5.90E-02	5.90E-02	-5.09E-03	2.76E-02
LA-138	788.74	34.00	1.53E-01	8.09E-02	7.83E-02	7.09E-02
	1435.80	66.00	8.09E-02		-1.37E-02	3.59E-02
CE-139	165.85	80.35	7.26E-02	7.26E-02	-7.04E-02	3.51E-02
BA-140	162.64	6.70	1.24E+02	3.65E+01	-4.67E+00	5.98E+01
	304.84	4.50	1.79E+02		-2.82E+01	8.49E+01
	423.70	3.20	3.08E+02		1.14E+02	1.46E+02
	437.55	2.00	4.68E+02		2.99E+02	2.20E+02
	537.32	25.00	3.65E+01		-3.51E+00	1.70E+01
LA-140	328.77	20.50	4.59E+01	1.44E+01	8.96E+00	2.18E+01
	487.03	45.50	1.70E+01		-6.82E+00	7.84E+00
	815.85	23.50	5.60E+01		8.35E+00	2.60E+01
	1596.49	95.49	1.44E+01		-1.50E+00	6.39E+00
CE-141	145.44	48.40	6.37E-01	6.37E-01	3.07E-01	3.09E-01
@ CE-143	57.36	11.80	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	293.26	42.00	1.00E+26		1.00E+26	1.00E+20
@	664.55	5.20	1.00E+26		1.00E+26	1.00E+20
CE-144	133.54	10.80	3.00E-01	3.00E-01	-9.52E-02	1.44E-01
PM-144	476.78	42.00	1.02E-01	5.46E-02	-1.79E-02	4.72E-02
	618.01	98.60	5.46E-02		1.33E-02	2.54E-02
	696.49	99.49	6.42E-02		2.90E-02	3.01E-02
PM-145	36.85	21.70	4.02E-01	2.09E-01	2.11E-02	1.94E-01
	37.36	39.70	2.09E-01		-6.25E-02	1.01E-01
	42.30	15.10	3.21E-01		-1.07E-01	1.54E-01
	72.40	2.31	1.43E+00		-4.83E+00	6.91E-01
PM-146	453.90	39.94	9.58E-02	9.58E-02	1.71E-02	4.48E-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)
PM-146	735.90	14.01	4.12E-01	9.58E-02	3.45E-01	1.93E-01
	747.13	13.10	3.83E-01		-4.50E-02	1.77E-01
ND-147	91.11	28.90	6.18E+01	6.18E+01	-9.40E+01	2.99E+01
	531.02	13.10	1.78E+02		5.64E+00	8.31E+01
PM-149	285.90	3.10	6.15E+13	6.15E+13	-3.33E+13	2.92E+13
EU-152	121.78	20.50	1.19E-01	1.19E-01	-1.00E-01	5.68E-02
	244.69	5.40	7.09E-01		-9.21E-01	3.40E-01
	344.27	19.13	1.86E-01		-4.50E-03	8.78E-02
	778.89	9.20	5.28E-01		9.77E-04	2.44E-01
	964.01	10.40	6.79E-01		-4.95E-01	3.18E-01
	1085.78	7.22	7.86E-01		-2.22E-01	3.59E-01
	1112.02	9.60	6.03E-01		5.76E-03	2.76E-01
	1407.95	14.94	4.72E-01		3.10E-01	2.16E-01
GD-153	97.43	31.30	1.07E-01	1.07E-01	-4.16E-02	5.13E-02
	103.18	22.20	1.38E-01		-1.09E-01	6.58E-02
EU-154	123.07	40.50	6.55E-02	6.55E-02	3.41E-02	3.15E-02
	723.30	19.70	3.01E-01		-1.19E-01	1.42E-01
	873.19	11.50	4.72E-01		2.39E-02	2.18E-01
	996.32	10.30	5.36E-01		-1.57E-01	2.46E-01
	1004.76	17.90	2.85E-01		-1.16E-01	1.30E-01
	1274.45	35.50	1.74E-01		1.87E-02	7.92E-02
EU-155	86.50	30.90	1.15E-01	1.15E-01	1.70E-01	5.61E-02
	105.30	20.70	1.29E-01		8.10E-02	6.20E-02
EU-156	811.77	10.40	5.26E+01	5.26E+01	3.51E+00	2.45E+01
	1153.47	7.20	1.01E+02		2.57E+01	4.71E+01
	1230.71	8.90	6.91E+01		1.18E+01	3.15E+01
HO-166M	184.41	72.60	5.95E-02	5.95E-02	9.77E-02	2.89E-02
	280.45	29.60	1.22E-01		-4.54E-02	5.80E-02
	410.94	11.10	3.31E-01		3.15E-02	1.55E-01
	711.69	54.10	9.91E-02		-1.42E-02	4.64E-02
TM-171	66.72	0.14	2.60E+01	2.60E+01	5.27E+00	1.26E+01
HF-172	67.35	5.31	6.88E-01	2.44E-01	2.58E-01	3.33E-01
	125.81	11.30	2.44E-01		-1.84E-01	1.17E-01
LU-172	181.53	20.60	5.79E+03	2.97E+03	-8.23E+02	2.79E+03
	900.72	29.81	5.97E+03		8.00E+02	2.74E+03
	1093.66	62.50	2.97E+03		4.23E+02	1.35E+03
LU-173	100.72	5.24	5.49E-01	2.16E-01	2.08E-01	2.64E-01
	272.11	21.20	2.16E-01		-4.51E-02	1.04E-01
HF-175	343.40	84.00	1.16E-01	1.16E-01	4.60E-02	5.49E-02
LU-176	88.34	13.30	2.41E-01	3.67E-02	-6.16E-03	1.17E-01
	201.83	86.00	4.34E-02		7.41E-03	2.09E-02
	306.78	94.00	3.67E-02		6.63E-03	1.74E-02
HF-181	133.02	41.70	3.26E-01	2.03E-01	1.24E-01	1.56E-01
	345.85	17.20	1.01E+00		-6.75E-02	4.74E-01
	482.03	82.80	2.03E-01		-6.06E-02	9.34E-02
TA-182	67.75	41.20	1.47E-01	1.47E-01	5.52E-02	7.12E-02
	1121.30	34.90	4.48E-01		5.47E-01	2.11E-01
	1189.05	16.23	7.62E-01		-1.32E-01	3.52E-01
	1221.41	26.98	4.99E-01		-8.29E-02	2.31E-01
	1231.02	11.44	9.86E-01		1.68E-01	4.50E-01
IR-192	308.46	29.68	2.93E-01	2.26E-01	-2.14E-01	1.39E-01
	468.07	48.10	2.26E-01		6.52E-02	1.06E-01
HG-203	279.19	77.30	2.18E-01	2.18E-01	1.23E-02	1.04E-01

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	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
	TL-204	374.74		94.11	3.96E-02	3.96E-02	1.42E-03	1.87E-02
		899.15		99.16	5.67E-02		1.84E-02	2.61E-02
		911.74		91.10	1.09E-01		2.33E-01	5.20E-02
	BI-207	569.67		97.72	4.02E-02	4.02E-02	4.05E-03	1.86E-02
		1063.62		74.90	7.65E-02		3.50E-02	3.51E-02
+	TL-208	583.14	*	30.22	2.53E-01	1.39E-01	6.97E-01	1.21E-01
		860.37		4.48	1.31E+00		8.04E-01	6.12E-01
		2614.66	*	35.85	1.39E-01		5.52E-01	5.79E-02
	BI-210M	262.00		45.00	7.57E-02	7.57E-02	-5.35E-02	3.61E-02
		300.00		23.00	1.58E-01		1.45E-01	7.51E-02
	PB-210	46.50		4.25	1.10E+00	1.10E+00	1.13E+00	5.30E-01
	PB-211	404.84		2.90	1.34E+00	1.34E+00	-9.45E-02	6.30E-01
		831.96		2.90	1.57E+00		-9.68E-01	7.18E-01
+	BI-212	727.17	*	11.80	6.78E-01	6.78E-01	5.64E-01	3.24E-01
		1620.62		2.75	1.47E+00		6.12E-01	6.15E-01
+	PB-212	238.63	*	44.60	1.56E-01	1.56E-01	6.63E-01	7.64E-02
		300.09		3.41	1.07E+00		9.76E-01	5.07E-01
+	BI-214	609.31	*	46.30	1.24E-01	1.24E-01	5.94E-01	5.86E-02
		1120.29	*	15.10	9.51E-01		6.12E-01	4.59E-01
		1764.49	*	15.80	1.52E-01		7.89E-01	5.39E-02
		2204.22	*	4.98	8.82E-01		5.48E-01	3.63E-01
+	PB-214	295.21	*	19.19	2.39E-01	1.38E-01	8.14E-01	1.15E-01
		351.92	*	37.19	1.38E-01		7.07E-01	6.65E-02
	RN-219	401.80		6.50	5.87E-01	5.87E-01	3.04E-02	2.77E-01
	RA-223	323.87		3.88	8.43E-01	8.43E-01	-5.07E-01	3.97E-01
	RA-224	240.98		3.95	1.79E+00	1.79E+00	4.86E+00	8.74E-01
	RA-225	40.00		31.00	2.54E+01	2.54E+01	1.68E+01	1.23E+01
	RA-226	186.21		3.28	1.33E+00	1.33E+00	2.09E+00	6.46E-01
	TH-227	50.10		8.40	4.29E-01	4.23E-01	-3.45E-02	2.06E-01
		236.00		11.50	4.23E-01		-2.79E+00	2.05E-01
		256.20		6.30	5.71E-01		-3.86E-01	2.73E-01
+	AC-228	338.32		11.40	4.37E-01	4.37E-01	6.93E-01	2.10E-01
		911.07	*	27.70	4.43E-01		6.57E-01	2.14E-01
		969.11	*	16.60	7.64E-01		5.69E-01	3.69E-01
	TH-230	48.44		16.90	2.32E-01	2.32E-01	-9.54E-02	1.11E-01
		62.85		4.60	8.13E-01		6.63E-01	3.94E-01
		67.67		0.37	8.88E+00		3.33E+00	4.30E+00
	PA-231	283.67		1.60	2.14E+00	1.49E+00	1.14E-02	1.02E+00
		302.67		2.30	1.49E+00		-1.44E+00	7.04E-01
	TH-231	25.64		14.70	9.98E-02	9.98E-02	0.00E+00	0.00E+00
		84.21		6.40	4.67E-01		1.39E-01	2.26E-01
	PA-233	311.98		38.60	1.20E+00	1.20E+00	-3.53E-01	5.66E-01
	PA-234	131.20		20.40	1.29E-01	1.29E-01	-1.12E-02	6.22E-02
		733.99		8.80	6.04E-01		2.26E-01	2.82E-01
		946.00		12.00	3.91E-01		-7.69E-02	1.77E-01
	PA-234M	1001.03		0.92	5.83E+00	5.83E+00	8.30E-01	2.67E+00
	TH-234	63.29		3.80	9.68E-01	9.68E-01	7.18E-01	4.70E-01
	U-235	143.76		10.50	3.42E-01	3.42E-01	2.24E-01	1.66E-01
		163.35		4.70	7.48E-01		-4.16E-02	3.61E-01
		205.31		4.70	7.81E-01		1.06E-01	3.76E-01
+	NP-237	86.50	*	12.60	2.64E-01	2.64E-01	2.87E-01	1.28E-01
	NP-239	106.10		22.70	9.30E+11	9.30E+11	5.84E+11	4.47E+11
		228.18		10.70	2.76E+12		6.00E+11	1.32E+12

Analysis Report for 1707091-20

HTC-A08-BKGD02-4248-01

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/grams)	Nuclide MDA (pCi/grams)	Activity (pCi/grams)	Dec. Level (pCi/grams)
NP-239	277.60	14.10	2.20E+12	9.30E+11	9.94E+10	1.05E+12
AM-241	59.54	35.90	9.88E-02	9.88E-02	1.85E-02	4.78E-02
AM-243	74.67	66.00	6.31E-02	6.31E-02	-9.66E-02	3.08E-02
CM-243	209.75	3.29	1.31E+00	2.72E-01	1.05E+00	6.35E-01
	228.14	10.60	3.41E-01		7.43E-02	1.64E-01
	277.60	14.00	2.72E-01		1.23E-02	1.30E-01

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

No Action Level results available for reporting purposes.

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: HTC-A08-BKGD02-4248-01

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	0	0	0	0	0	0
25:	0	0	0	0	26	74	129	106
33:	175	712	95	89	98	84	86	101
41:	97	73	49	55	53	69	105	77
49:	60	70	66	62	78	87	70	78
57:	84	79	97	99	104	103	131	136
65:	95	96	108	108	100	94	81	96
73:	122	116	281	169	318	281	106	87
81:	81	83	93	103	108	93	142	171
89:	75	108	110	97	183	127	70	72
97:	69	77	63	82	66	59	59	52
105:	77	75	63	59	71	70	47	68
113:	74	60	77	59	76	67	76	66
121:	50	62	58	79	57	62	59	74
129:	69	73	60	62	66	59	51	67
137:	58	64	65	54	63	71	48	86
145:	66	66	51	61	63	57	47	59
153:	60	52	58	65	50	49	55	56
161:	50	53	74	39	58	55	61	60
169:	67	42	45	41	56	48	52	38
177:	40	55	32	48	38	45	39	65
185:	62	127	75	42	49	33	39	57
193:	63	55	67	43	26	49	51	50
201:	47	48	40	56	42	40	50	58
209:	63	75	54	55	46	42	42	47
217:	35	56	38	56	49	37	49	32
225:	27	35	41	35	36	41	40	41
233:	41	28	27	35	45	201	412	78
241:	68	95	48	40	36	35	30	33
249:	28	38	30	33	38	23	28	44
257:	38	27	42	26	22	29	29	32
265:	31	30	28	31	46	64	38	28
273:	33	18	36	32	32	40	27	27
281:	28	29	29	27	23	16	23	30
289:	30	31	27	23	31	40	168	85
297:	37	13	27	40	27	22	18	28
305:	17	28	17	24	26	15	24	29
313:	21	20	24	24	15	19	27	22
321:	21	18	20	24	13	17	26	36
329:	30	14	27	28	28	24	20	19
337:	30	71	69	19	19	22	24	14
345:	23	14	20	15	16	24	87	254
353:	68	22	16	16	20	20	18	17
361:	9	23	22	25	12	16	18	17

369:	16	19	12	20	16	15	21	17

Sample Title: HTC-A08-BKGD02-4248-01

Channel								
377:	18	15	21	17	19	18	20	21
385:	13	17	17	22	24	21	11	19
393:	16	21	24	23	16	19	13	18
401:	15	18	24	16	21	17	15	20
409:	19	23	12	19	8	13	28	14
417:	15	18	14	20	15	19	18	20
425:	18	24	17	17	26	13	14	15
433:	18	11	19	20	16	13	16	11
441:	23	6	11	5	19	11	20	13
449:	8	12	10	14	16	12	14	14
457:	15	12	19	13	16	23	22	20
465:	16	20	17	18	16	17	16	10
473:	16	14	11	8	18	8	13	10
481:	13	9	8	7	16	8	6	10
489:	7	12	17	13	10	12	15	16
497:	12	11	9	8	13	17	10	20
505:	12	13	20	18	17	54	65	30
513:	17	14	11	12	9	13	6	11
521:	18	14	5	8	15	8	10	12
529:	10	9	12	16	16	14	13	9
537:	19	8	8	8	13	10	11	12
545:	14	10	13	7	9	13	12	13
553:	14	8	12	3	14	12	9	10
561:	9	7	15	6	13	13	9	10
569:	14	11	10	9	7	14	10	10
577:	10	14	8	11	11	44	135	61
585:	14	11	12	12	10	13	13	10
593:	18	8	10	19	5	14	10	8
601:	9	12	12	14	7	10	17	52
609:	134	94	7	4	9	11	11	11
617:	9	10	8	8	5	7	5	5
625:	11	12	7	7	9	11	7	10
633:	7	3	8	15	8	7	9	9
641:	13	6	13	6	8	9	8	8
649:	10	5	5	4	6	11	8	9
657:	10	11	10	13	6	10	11	10
665:	13	10	11	9	5	16	12	6
673:	6	5	6	7	7	10	12	8
681:	6	9	6	6	8	12	3	15
689:	3	5	8	8	12	8	17	11
697:	9	8	8	7	8	10	9	8
705:	10	12	10	13	11	9	9	9
713:	16	6	15	8	10	10	6	10
721:	9	10	8	14	16	17	26	16
729:	11	8	3	10	16	10	11	9
737:	9	13	7	6	4	9	6	9
745:	2	8	10	10	10	5	7	11
753:	7	6	10	9	4	12	9	7
761:	3	6	9	8	10	7	15	20
769:	14	5	11	19	12	8	3	9
777:	9	7	6	10	5	11	7	5
785:	9	11	12	6	7	5	7	4
793:	6	10	17	6	10	1	5	4

801:	7	11	10	5	12	12	7	5

Sample Title: HTC-A08-BKGD02-4248-01

Channel								
809:	11	7	7	9	6	15	9	5
817:	9	8	8	9	8	4	8	8
825:	5	6	7	7	6	6	6	6
833:	5	3	10	9	8	6	8	10
841:	5	5	12	6	3	3	3	7
849:	11	11	8	3	13	7	4	3
857:	5	7	7	17	14	5	9	8
865:	7	4	4	12	4	7	9	6
873:	6	4	8	10	6	6	8	7
881:	8	8	1	11	6	6	9	11
889:	13	5	4	9	2	7	7	10
897:	7	6	7	2	5	11	6	10
905:	9	5	2	5	8	34	63	29
913:	8	10	4	4	4	8	8	8
921:	2	6	7	5	7	6	8	5
929:	6	3	12	7	11	15	8	7
937:	2	1	10	5	5	6	3	5
945:	3	3	6	7	9	3	6	5
953:	2	4	6	3	8	11	9	3
961:	9	4	9	25	17	8	12	30
969:	32	10	6	13	6	5	6	5
977:	4	8	6	6	8	8	5	8
985:	5	5	7	5	5	3	9	3
993:	9	7	6	3	2	7	7	8
1001:	8	2	6	6	5	1	6	4
1009:	8	6	4	5	10	6	5	7
1017:	4	3	6	6	10	6	6	6
1025:	5	8	7	8	7	6	6	2
1033:	4	4	7	6	8	5	7	8
1041:	7	4	1	9	4	2	8	5
1049:	5	10	4	6	4	5	9	6
1057:	2	5	4	4	5	5	4	8
1065:	9	6	3	3	4	5	6	2
1073:	2	6	4	7	7	7	9	6
1081:	11	2	3	4	7	4	10	8
1089:	8	1	4	8	4	7	4	6
1097:	7	3	1	3	4	7	10	8
1105:	9	7	4	7	6	5	5	7
1113:	4	4	4	4	5	4	20	28
1121:	17	10	5	4	4	5	8	6
1129:	6	3	5	3	11	5	6	5
1137:	5	9	5	3	8	4	2	3
1145:	5	7	3	11	6	6	9	7
1153:	8	12	7	11	7	5	2	5
1161:	8	9	6	8	5	7	8	2
1169:	8	8	3	7	8	10	9	7
1177:	2	4	4	10	6	11	7	10
1185:	3	7	4	12	7	7	8	4
1193:	10	4	3	7	7	11	9	9
1201:	7	5	9	5	6	11	7	11
1209:	6	9	9	5	6	6	8	8
1217:	12	6	5	6	8	9	12	9
1225:	4	11	9	5	3	3	9	5

1233:	3	3	12	17	12	14	9	9

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Channel								
1241:	7	5	7	8	10	7	4	9
1249:	6	6	3	7	5	7	4	4
1257:	3	5	9	1	4	2	8	5
1265:	4	6	4	5	3	7	8	3
1273:	5	4	6	2	6	4	4	7
1281:	8	3	5	5	3	4	4	4
1289:	6	1	5	4	4	5	4	2
1297:	10	4	2	4	2	0	4	4
1305:	4	3	1	9	6	2	3	6
1313:	2	3	1	1	1	2	3	4
1321:	2	6	1	6	5	3	7	4
1329:	5	2	3	3	6	2	1	6
1337:	2	2	2	2	7	5	6	3
1345:	3	5	2	6	3	6	5	3
1353:	2	3	5	2	1	1	2	5
1361:	1	4	1	5	3	3	3	3
1369:	1	3	1	2	4	5	5	2
1377:	10	7	5	2	3	5	2	2
1385:	0	1	3	0	1	3	0	0
1393:	4	4	0	0	1	3	2	3
1401:	2	3	2	4	3	6	2	4
1409:	5	10	3	0	3	0	4	1
1417:	0	1	2	0	1	2	1	2
1425:	1	1	3	3	3	2	3	4
1433:	1	2	2	1	3	2	3	3
1441:	3	3	3	1	0	5	1	2
1449:	2	2	1	1	1	4	3	7
1457:	14	34	112	262	205	46	6	2
1465:	1	0	2	1	2	4	0	1
1473:	1	1	1	4	0	1	2	2
1481:	4	0	3	0	1	0	3	3
1489:	2	2	1	1	0	2	1	1
1497:	1	3	0	3	1	2	3	4
1505:	1	2	4	1	4	0	1	2
1513:	2	1	1	1	2	1	0	0
1521:	2	0	1	0	3	4	2	2
1529:	0	0	1	1	1	1	2	0
1537:	1	1	2	1	1	0	1	0
1545:	1	2	0	1	0	0	2	0
1553:	0	0	2	0	0	4	2	1
1561:	2	1	1	1	0	2	1	3
1569:	1	0	0	1	2	1	1	2
1577:	2	1	2	2	3	3	0	1
1585:	2	4	9	1	2	2	4	8
1593:	1	4	1	0	1	1	1	4
1601:	1	2	0	3	1	1	2	1
1609:	0	1	0	1	1	0	2	1
1617:	0	0	1	1	2	1	1	0
1625:	0	0	1	1	2	4	3	1
1633:	1	0	1	2	0	3	2	2
1641:	0	0	1	0	2	1	3	0
1649:	0	0	1	1	2	0	2	0
1657:	2	0	2	2	3	2	0	3

1665:	1	1	0	0	0	2	0	0

Sample Title: HTC-A08-BKGD02-4248-01

Channel								
1673:	1	2	0	1	1	0	0	0
1681:	1	0	3	1	1	0	1	0
1689:	2	0	2	0	0	0	0	0
1697:	2	1	1	3	1	0	2	1
1705:	2	1	1	0	1	2	1	1
1713:	0	1	2	0	0	3	0	3
1721:	0	0	3	1	3	3	1	3
1729:	5	6	2	1	0	1	0	1
1737:	1	0	2	1	0	1	2	1
1745:	0	0	1	2	3	0	2	3
1753:	0	1	2	0	2	2	0	0
1761:	2	3	13	20	13	1	0	0
1769:	1	1	0	0	1	1	0	2
1777:	3	1	0	0	2	1	1	2
1785:	2	0	3	1	1	0	2	0
1793:	1	0	0	1	2	0	1	1
1801:	1	0	1	0	1	1	1	0
1809:	2	0	0	0	2	0	0	0
1817:	1	2	1	0	2	1	1	0
1825:	0	0	1	1	1	0	1	2
1833:	1	0	1	1	0	0	1	0
1841:	0	1	0	1	2	2	2	2
1849:	1	0	0	1	1	3	1	1
1857:	0	0	0	1	2	2	0	1
1865:	2	1	0	1	0	0	2	0
1873:	2	0	1	0	1	2	0	0
1881:	3	0	0	0	0	0	1	1
1889:	0	0	2	3	0	2	5	0
1897:	2	0	0	1	1	2	0	1
1905:	0	1	1	1	0	1	2	0
1913:	1	1	1	1	2	2	1	1
1921:	0	2	1	2	0	1	0	0
1929:	2	2	1	0	2	0	1	0
1937:	2	1	1	1	0	0	1	2
1945:	0	3	1	0	2	1	0	4
1953:	1	0	1	1	1	0	1	0
1961:	0	1	0	0	0	0	0	3
1969:	0	2	1	0	2	2	2	1
1977:	1	0	2	1	1	1	2	1
1985:	1	0	0	0	0	2	1	1
1993:	1	0	1	0	0	1	1	2
2001:	0	0	0	0	0	0	1	0
2009:	1	0	3	0	0	0	2	1
2017:	2	0	0	1	0	2	0	0
2025:	0	0	1	2	1	0	0	0
2033:	0	1	2	1	0	0	0	1
2041:	2	1	1	0	1	1	0	1
2049:	1	1	0	1	1	0	0	0
2057:	0	1	1	0	0	1	1	0
2065:	0	1	1	0	0	1	0	0
2073:	0	0	1	2	0	1	0	0
2081:	0	0	1	1	1	0	1	2
2089:	2	0	1	0	0	2	0	0

2097:	0	0	2	0	5	7	3	2

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

2529:	0	0	0	1	1	1	1	0

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Channel								
2537:	0	0	0	1	0	0	0	0
2545:	0	0	0	0	0	0	0	0
2553:	0	1	0	0	0	2	0	0
2561:	0	0	0	0	0	1	0	0
2569:	1	0	0	1	1	0	0	1
2577:	1	1	1	0	0	0	2	0
2585:	0	0	0	2	0	0	0	0
2593:	0	0	1	0	1	1	0	1
2601:	0	0	0	1	1	0	1	3
2609:	0	3	6	15	21	19	5	1
2617:	0	0	0	1	0	0	0	0
2625:	1	0	0	0	0	0	1	0
2633:	0	0	0	0	1	0	0	0
2641:	1	0	1	0	1	0	0	1
2649:	0	0	0	0	0	0	0	0
2657:	0	0	0	0	0	0	0	0
2665:	0	0	0	0	1	0	0	0
2673:	1	0	0	0	0	0	0	0
2681:	0	0	0	0	0	0	0	1
2689:	0	1	0	0	0	0	1	0
2697:	0	0	0	0	0	0	0	1
2705:	0	0	1	0	0	0	0	0
2713:	0	0	0	0	0	0	0	0
2721:	0	1	2	0	0	0	0	0
2729:	0	0	0	1	1	0	0	0
2737:	0	0	0	1	0	0	0	0
2745:	0	0	0	0	1	0	0	1
2753:	0	0	1	0	0	1	0	2
2761:	0	0	0	1	0	0	0	0
2769:	0	0	0	0	1	0	0	1
2777:	0	1	0	0	0	0	0	2
2785:	0	0	1	0	0	0	0	1
2793:	0	0	0	0	1	1	0	1
2801:	0	1	1	0	0	0	0	0
2809:	0	0	0	1	0	1	0	0
2817:	0	0	0	0	0	0	0	0
2825:	2	0	0	0	0	1	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	1	0	0
2865:	0	3	0	0	0	0	0	0
2873:	0	0	0	0	0	0	0	0
2881:	0	1	1	1	1	0	0	0
2889:	1	0	0	0	0	0	0	0
2897:	0	0	1	0	0	0	0	0
2905:	4	0	0	0	0	0	0	0
2913:	0	0	0	0	1	0	0	0
2921:	0	0	0	0	0	0	0	0
2929:	0	0	0	0	0	0	0	0
2937:	0	0	0	1	0	0	0	0
2945:	0	0	0	0	0	0	0	0
2953:	0	0	0	0	0	0	0	0

2961:	1	0	0	0	1	0	0	0

Sample Title: HTC-A08-BKGD02-4248-01

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

3393:	0	0	0	0	0	0	1	1

Sample Title: HTC-A08-BKGD02-4248-01

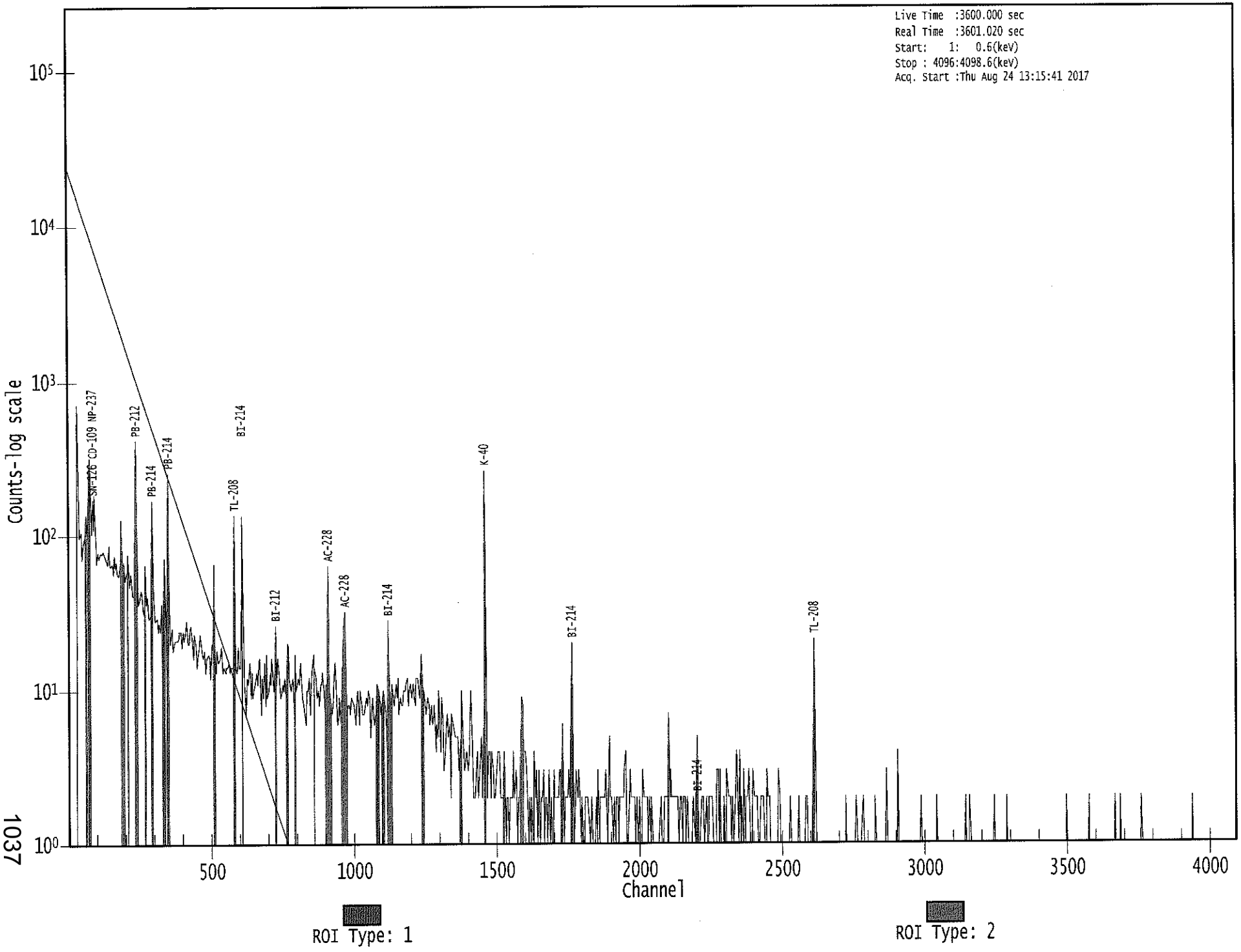
Channel								
3401:	0	0	0	0	0	1	1	0
3409:	0	0	0	0	0	0	0	1
3417:	1	1	0	0	0	0	1	0
3425:	0	0	0	0	0	0	0	0
3433:	0	0	0	1	0	0	0	0
3441:	0	0	0	1	0	0	0	0
3449:	0	0	0	0	0	0	0	0
3457:	0	0	0	0	0	1	0	0
3465:	0	0	0	0	0	0	0	0
3473:	0	0	1	0	0	1	0	0
3481:	1	0	1	0	0	0	1	0
3489:	0	0	0	0	0	0	0	0
3497:	2	0	0	0	0	0	0	0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

3825:	0	0	0	0	0	1	0	0

Sample Title: HTC-A08-BKGD02-4248-01

Channel								
3833:	1	0	1	1	0	0	0	1
3841:	0	0	1	0	1	0	0	0
3849:	0	0	0	0	0	0	0	0
3857:	0	0	0	0	0	0	0	0
3865:	0	0	0	1	0	0	0	0
3873:	0	0	0	0	0	0	0	0
3881:	0	1	1	0	0	0	0	0
3889:	0	0	0	0	0	0	1	1
3897:	0	0	0	0	0	0	0	0
3905:	0	0	0	0	0	1	0	0
3913:	0	0	0	0	0	0	0	0
3921:	0	0	0	0	0	0	0	0
3929:	0	1	0	0	0	0	0	0
3937:	0	0	2	0	0	0	0	0
3945:	0	0	0	1	0	0	0	0
3953:	0	0	0	1	0	0	0	0
3961:	0	0	0	0	0	0	0	0
3969:	0	0	0	0	0	0	0	0
3977:	0	0	0	0	0	0	0	0
3985:	0	0	0	0	0	0	0	0
3993:	0	0	0	0	0	1	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	0
4057:	1	0	0	0	0	0	0	1
4065:	0	0	0	0	1	0	0	0
4073:	0	1	0	0	0	0	0	0
4081:	1	0	0	0	0	0	0	1
4089:	0	0	0	0	0	0	0	0

0000055909.CNF



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*************************************************************************
*****          G E N I E   Q U A L I T Y   A S S U R A N C E        *****
*************************************************************************
```

8/24

Last Results Report
8/24/17 6:16:16 AM

QA File: \\OR-GAMMA1\ApexRoot\Countroom\QA\D0000000004GAW-16C.QCK

Detector: GE4
Geometry: <None>
Certificate: GAW-16
Sample ID: QA Calibration C
Sample Desc: QA Count
Sample Quantity: 1.0000E+000
Sample Date: 10/1/16 12:00:00 PM
Measurement Date: 8/24/17 5:59:54 AM
Elapsed Live Time: 900.0 seconds
Elapsed Real Time: 967.5 seconds

Parameter Description [Mean +/- Std. Dev.]	Value	Deviation/Flags < LU : SD : UD : BS >
Peak centroid 59.54 kev	5.8368E+001	
Boundary Limits: [5.800E+001, 6.100E+001]		< : : : >
Peak centroid 661.65 kev	6.6068E+002	
Boundary Limits: [6.600E+002, 6.630E+002]		< : : : >
Trend Test: The last 9 samples exhibit a bias trend.		
Peak centroid 1332.49 ke	1.3318E+003	
Boundary Limits: [1.331E+003, 1.335E+003]		< : : : >
Trend Test: The last 9 samples exhibit a bias trend.		
Peak centroid 1836.01 ke	1.8356E+003	
Boundary Limits: [1.834E+003, 1.838E+003]		< : : : >
Trend Test: The last 9 samples exhibit a bias trend.		
Peak FWHM Am-241	2.0701E+000	
Boundary Limits: [5.000E-001, 3.000E+000]		< : : : >
Peak FWHM Cs-137	2.5110E+000	
Boundary Limits: [5.000E-001, 3.000E+000]		< : : : >
Trend Test: The last 9 samples exhibit a bias trend.		
Peak FWHM Co-60	2.7392E+000	
Boundary Limits: [5.000E-001, 3.000E+000]		< : : : >
Peak FWHM Y-88	2.9281E+000	
Boundary Limits: [5.000E-001, 3.000E+000]		< : : : >
Decay corrected activity	1.2734E+005	
Boundary Limits: [1.196E-001, 1.793E-001]		< : : : >
Decay corrected activity	6.3073E+004	

Boundary Limits: [4.890E-002, 7.335E-002] < : : : >

Decay corrected activity 9.1337E+004
Boundary Limits: [7.743E-002, 1.161E-001] < : : : >
Trend Test: The last 9 samples exhibit a bias trend.

Decay corrected activity 1.9431E+005
Boundary Limits: [1.609E-001, 2.414E-001] < : : : >
Trend Test: The last 9 samples exhibit a bias trend.

Flags Key:
LU = Lower/Upper Bounds Test (Ab = Above, Be = Below)
SD = Sample Driven N-Sigma Test (In = Investigate, Ac = Action)
UD = User Driven N-Sigma Test (In = Investigate, Ac = Action)
BS = Measurement Bias Test (In = Investigate, Ac = Action)

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*************************************************************************
*****        G E N I E   Q U A L I T Y   A S S U R A N C E         *****
*************************************************************************
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Last Results Report
8/24/17 5:32:50 AM

QA File: \\OR-GAMMA1\ApexRoot\Countroom\QA\D0000000003GAS-1602C.QC

Detector: GE3
Geometry: <None>
Certificate: GAS-1602
Sample ID: QA Calibration C
Sample Desc: QA Count
Sample Quantity: 1.0000E+000
Sample Date: 10/1/16 12:00:00 PM
Measurement Date: 8/24/17 5:16:59 AM
Elapsed Live Time: 900.0 seconds
Elapsed Real Time: 933.6 seconds

Parameter Description [Mean +/- Std. Dev.]	Value	Deviation/Flags < LU : SD : UD : BS >
Peak centroid 59.54 kev	5.9837E+001	
Boundary Limits: [5.800E+001, 6.100E+001]		< : : : >
Trend Test: The last 9 samples exhibit a bias trend.		
Peak centroid 661.65 kev	6.6176E+002	
Boundary Limits: [6.600E+002, 6.630E+002]		< : : : >
Peak centroid 1332.49 ke	1.3325E+003	
Boundary Limits: [1.330E+003, 1.334E+003]		< : : : >
Peak centroid 1836.01 ke	1.8359E+003	
Boundary Limits: [1.834E+003, 1.838E+003]		< : : : >
Peak FWHM Am-241	2.0244E+000	
Boundary Limits: [5.000E-001, 3.000E+000]		< : : : >
Trend Test: The last 9 samples exhibit a bias trend.		
Peak FWHM Cs-137	2.2299E+000	
Boundary Limits: [5.000E-001, 3.000E+000]		< : : : >
Peak FWHM Co-60	2.6676E+000	
Boundary Limits: [5.000E-001, 3.000E+000]		< : : : >
Peak FWHM Y-88	2.8579E+000	
Boundary Limits: [5.000E-001, 3.000E+000]		< : : : >
Decay corrected activity	1.5613E+005	
Boundary Limits: [1.189E-001, 1.784E-001]		< : : : >
Trend Test: The last 9 samples exhibit a bias trend.		
Decay corrected activity	6.1201E+004	
Boundary Limits: [4.862E-002, 7.293E-002]		< : : : >

Trend Test: The last 9 samples exhibit a bias trend.

Decay corrected activity 9.1453E+004
Boundary Limits: [7.700E-002, 1.155E-001] < : : : >
Trend Test: The last 9 samples exhibit a bias trend.

Decay corrected activity 1.8851E+005
Boundary Limits: [1.600E-001, 2.400E-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 *****
****

8/24

Last Results Report
8/24/17 5:32:38 AM

QA File: \\OR-GAMMA1\ApexRoot\Countroom\QA\D0000000002GAS-1601C.QC

Detector: GE2
Geometry: <None>
Certificate: GAS-1601
Sample ID: QA Calibration C
Sample Desc: QA Count
Sample Quantity: 1.0000E+000
Sample Date: 10/1/16 12:00:00 PM
Measurement Date: 8/24/17 5:16:51 AM
Elapsed Live Time: 900.0 seconds
Elapsed Real Time: 923.9 seconds

Parameter Description [Mean +/- Std. Dev.]	Value	Deviation/Flags < LU : SD : UD : BS >
Peak centroid 59.54 kev	6.0000E+001	
Boundary Limits: [5.800E+001, 6.100E+001]		< : : : >
Peak centroid 661.65 kev	6.6144E+002	
Boundary Limits: [6.600E+002, 6.630E+002]		< : : : >
Trend Test: The last 9 samples exhibit a bias trend.		
Peak centroid 1332.49 ke	1.3319E+003	
Boundary Limits: [1.331E+003, 1.334E+003]		< : : : >
Peak centroid 1836.01 ke	1.8351E+003	
Boundary Limits: [1.833E+003, 1.838E+003]		< : : : >
Peak FWHM Am-241	1.2387E+000	
Boundary Limits: [5.000E-001, 3.000E+000]		< : : : >
Trend Test: The last 9 samples exhibit a bias trend.		
Peak FWHM Cs-137	2.1185E+000	
Boundary Limits: [5.000E-001, 3.000E+000]		< : : : >
Trend Test: The last 9 samples exhibit a bias trend.		
Peak FWHM Co-60	2.2850E+000	
Boundary Limits: [5.000E-001, 3.000E+000]		< : : : >
Trend Test: The last 9 samples exhibit a bias trend.		
Peak FWHM Y-88	2.9322E+000	
Boundary Limits: [5.000E-001, 3.000E+000]		< : : : >
Trend Test: The last 9 samples exhibit a bias trend.		
Decay corrected activity	1.4297E+005	
Boundary Limits: [1.190E-001, 1.785E-001]		< : : : >

Decay corrected activity 7.1566E+004
Boundary Limits: [5.718E-002, 8.577E-002] < : : : >

Parameter Description [Mean +/- Std. Dev.]	Value	Deviation/Flags < LU : SD : UD : BS >
Decay corrected activity Boundary Limits: [7.706E-002, 1.156E-001]	1.0129E+005	< : : : >
Decay corrected activity Boundary Limits: [1.602E-001, 2.403E-001]	2.0513E+005	< : : : >

Flags Key:
LU = Lower/Upper Bounds Test (Ab = Above, Be = Below)
SD = Sample Driven N-Sigma Test (In = Investigate, Ac = Action)
UD = User Driven N-Sigma Test (In = Investigate, Ac = Action)
BS = Measurement Bias Test (In = Investigate, Ac = Action)

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*************************************************************************
*****          G E N I E   Q U A L I T Y   A S S U R A N C E        *****
*************************************************************************
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8/24

Last Results Report
8/24/17 5:32:27 AM

QA File: \\OR-GAMMA1\ApexRoot\Countroom\QA\D0000000001GAF-16C.QCK

Detector: GE1
Geometry: <None>
Certificate: GAF-16
Sample ID: QA Calibration C
Sample Desc: QA Count
Sample Quantity: 1.0000E+000
Sample Date: 10/1/16 12:00:00 PM
Measurement Date: 8/24/17 5:16:44 AM
Elapsed Live Time: 900.0 seconds
Elapsed Real Time: 928.7 seconds

Parameter Description [Mean +/- Std. Dev.]	Value	Deviation/Flags < LU : SD : UD : BS >
Peak centroid 59.54 kev	6.0005E+001	
Boundary Limits: [5.800E+001, 6.100E+001]		< : : : >
Trend Test: The last 9 samples exhibit a bias trend.		
Peak centroid 661.65 kev	6.6182E+002	
Boundary Limits: [6.600E+002, 6.630E+002]		< : : : >
Trend Test: The last 9 samples exhibit a bias trend.		
Peak centroid 1332.49 ke	1.3324E+003	
Boundary Limits: [1.331E+003, 1.334E+003]		< : : : >
Peak centroid 1836.01 ke	1.8357E+003	
Boundary Limits: [1.834E+003, 1.838E+003]		< : : : >
Trend Test: The last 9 samples exhibit a bias trend.		
Peak FWHM Am-241	1.4475E+000	
Boundary Limits: [5.000E-001, 3.000E+000]		< : : : >
Peak FWHM Cs-137	1.8509E+000	
Boundary Limits: [5.000E-001, 3.000E+000]		< : : : >
Trend Test: The last 9 samples exhibit a bias trend.		
Peak FWHM Co-60	2.2410E+000	
Boundary Limits: [5.000E-001, 3.000E+000]		< : : : >
Peak FWHM Y-88	2.3320E+000	
Boundary Limits: [5.000E-001, 3.000E+000]		< : : : >
Decay corrected activity	1.5194E+004	
Boundary Limits: [1.254E-002, 1.881E-002]		< : : : >
Decay corrected activity	6.7569E+003	

```
 Boundary Limits: [ 5.134E-003,  7.700E-003]      <    :    :    :    >

Decay corrected activity      1.0915E+004
 Boundary Limits: [ 8.130E-003,  1.220E-002]      <    :    :    :    >

Parameter Description           Value                Deviation/Flags
 [Mean +/- Std. Dev.]                             < LU : SD : UD : BS >

Decay corrected activity      1.8438E+004
 Boundary Limits: [ 1.690E-002,  2.534E-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)
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*************************************************************************
*****          G E N I E   Q U A L I T Y   A S S U R A N C E          *****
*************************************************************************
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Last Results Report
8/24/17 5:54:06 AM

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: 8/24/17 5:38:45 AM
Measurement Date: 8/24/17 5:38:47 AM
Elapsed Live Time: 900.0 seconds
Elapsed Real Time: 900.2 seconds

Parameter Description [Mean +/- Std. Dev.]	Value	Deviation/Flags < LU : SD : UD : BS >
DAILY BKG CT RATE GE4 [SD: 7.1253E+000+/-131.05]	1.5011E+000	-4.2914E-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)

8/24

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*************************************************************************
*****          G E N I E   Q U A L I T Y   A S S U R A N C E          *****
*************************************************************************
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Last Results Report
8/24/17 5:53:49 AM

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: 8/24/17 5:38:32 AM
Measurement Date: 8/24/17 5:38:33 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:-1.7065E+035+/-******]	2.2244E+000	3.1670E-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)

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*************************************************************************
*****          G E N I E   Q U A L I T Y   A S S U R A N C E          *****
*************************************************************************
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Last Results Report
8/24/17 5:53:58 AM

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: 8/24/17 5:38:39 AM
Measurement Date: 8/24/17 5:38:40 AM
Elapsed Live Time: 900.0 seconds
Elapsed Real Time: 901.8 seconds

Parameter Description [Mean +/- Std. Dev.]	Value	Deviation/Flags < LU : SD : UD : BS >
DAILY BKG CT RATE GE3 [SD: 2.1789E+003+/-1173.9]	1.6360E+003	-4.6247E-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)

8/24

```
*************************************************************************
*****          G E N I E   Q U A L I T Y   A S S U R A N C E          *****
*************************************************************************
```

Last Results Report
8/24/17 5:53:39 AM

QA File: \\OR-GAMMA1\ApexRoot\Countroom\QA\D0000000001B.QCK

Detector: GE1
Geometry: <None>
Certificate: <None>
Sample ID: QA Background Ch
Sample Desc: QA Count
Sample Quantity: 1.0000E+000
Sample Date: 8/24/17 5:38:25 AM
Measurement Date: 8/24/17 5:38:27 AM
Elapsed Live Time: 900.0 seconds
Elapsed Real Time: 900.1 seconds

Parameter Description [Mean +/- Std. Dev.]	Value	Deviation/Flags < LU : SD : UD : BS >
DAILY BKG CT RATE GE1 [SD: 2.2764E+000+/- 1.244]	2.2622E+000	-1.1432E-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)