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Apex-Alpha™

Sample Description: ENGWESA005
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001279
Batch Identification: 1508105A-TH
Sample Identification: 08
Sample Geometry: Shelf 2
Procedure Description: Th iso

Detector Name: Alpha_043
Chamber Serial Number: 04026481A
Detector Serial Number: 91088
Env. Background: System Bkgd 127750
Reagent Blank: <not performed>

Sample Size: 3.975E-001 +/- 0.000E+000 sample
Sample Date/Time: 6/23/2015 6:05:04 AM
Acquisition Date/Time: 9/4/2015 11:29:51 AM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
Tracer Quantity: 0.233 mL
Effective Efficiency: 0.1772 +/- 0.0152
Counting Efficiency: 0.1998 +/- 0.0035 on 10/25/2014 3:08:45 PM
Chem. Recovery Factor: 0.8871 +/- 0.0775

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		5.780	5.49	88.08	0.51	0.00E+000	3.0
TH-228		5.371	9.47	69.45	1.53	0.00E+000	3.0
TH-229	T	4.875	157.49	15.65	0.51	0.00E+000	5.4
TH-230		4.634	38.32	31.99	0.68	0.00E+000	3.0
TH-232		3.979	11.98	59.38	1.02	0.00E+000	3.0

T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/sample)	MDA (pCi/sample)
TH-227	0.975	5850.00*	2.13E-001 +/- 1.91E-001	2.04E-001 +/- 3.42E-002
TH-228	0.995	5400.00*	3.83E-001 +/- 2.74E-001	2.88E-001 +/- 4.83E-002
TH-229	1.000	4872.00*	5.95E+000 +/- 9.99E-001	1.98E-001 +/- 3.33E-002
TH-230	0.993	4672.00*	1.44E+000 +/- 5.22E-001	2.13E-001 +/- 3.57E-002
TH-232	0.998	3997.00*	4.51E-001 +/- 2.78E-001	2.37E-001 +/- 3.98E-002

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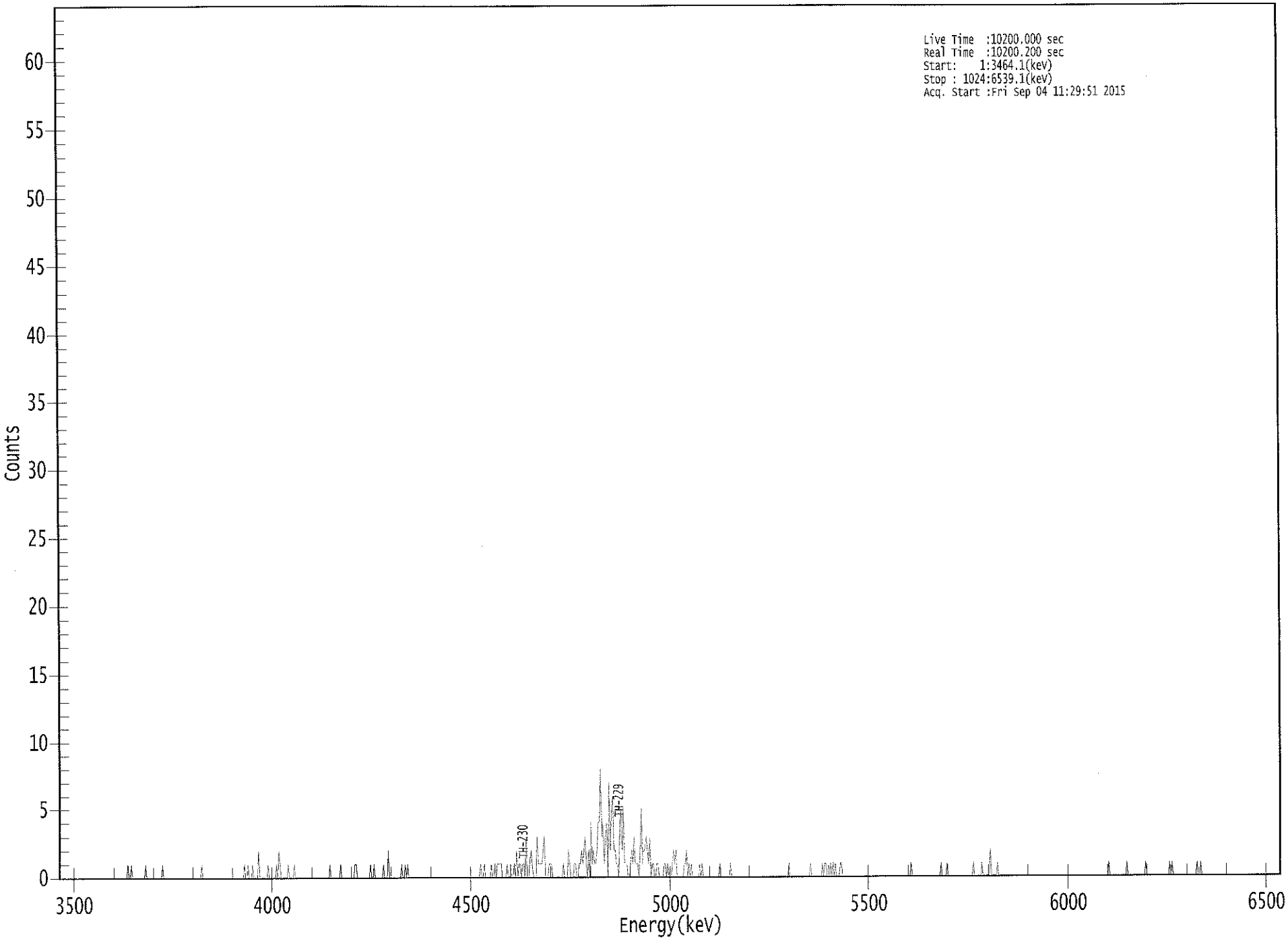
0000127998.CNF



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***** 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	0
41:	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0
57:	0	1	0	0	1	0	0	0
65:	0	0	0	0	0	0	0	0
73:	1	0	0	0	0	0	0	0
81:	0	0	0	0	0	0	1	0
89:	0	0	0	0	0	0	0	0
97:	0	0	0	0	0	0	0	0
105:	0	0	0	0	0	0	0	0
113:	0	0	0	0	0	0	0	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	0	0	0	0	0	0
153:	0	0	0	1	0	0	1	0
161:	0	0	1	0	0	0	0	2
169:	0	0	0	0	0	0	0	1
177:	0	0	0	0	0	0	1	0
185:	2	1	0	0	0	0	0	0
193:	1	0	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	1	0	0	0	0
233:	0	0	0	0	1	0	0	0
241:	0	0	0	0	0	0	0	0
249:	1	1	0	0	0	0	0	0
257:	0	0	0	0	0	1	0	0
265:	1	0	0	0	0	0	0	0
273:	1	0	0	0	2	0	0	0
281:	0	0	0	0	0	0	0	1
289:	0	0	1	0	1	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	1	0	0	0
361:	0	0	1	0	0	1	0	1

369:	1	1	1	0	0	0	0	1

Sample Title: 08

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

801:	0	0	0	0	0	0	0	0

Sample Title: 08

Channel								
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	1	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	1	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	1	0	0
913:	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	0
929:	0	1	0	1	0	0	0	0
937:	0	0	0	0	0	0	0	0
945:	0	0	0	0	0	0	0	0
953:	1	0	0	1	0	0	0	0
961:	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	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: ENGWESA006
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001279
Batch Identification: 1508105A-TH
Sample Identification: 09
Sample Geometry: Shelf 2
Procedure Description: Th iso

Detector Name: Alpha_044
Chamber Serial Number: 04026481B
Detector Serial Number: 84168
Env. Background: System Bkgd 127751
Reagent Blank: <not performed>

Sample Size: 3.975E-001 +/- 0.000E+000 sample
Sample Date/Time: 6/24/2015 6:05:04 AM
Acquisition Date/Time: 9/4/2015 11:29:53 AM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
Tracer Quantity: 0.232 mL
Effective Efficiency: 0.2268 +/- 0.0175
Counting Efficiency: 0.1837 +/- 0.0032 on 10/25/2014 3:13:11 PM
Chem. Recovery Factor: 1.2348 +/- 0.0976

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	5.32	91.11	0.68	0.00E+000	3.0
TH-228		5.388	1.66	169.38	0.34	0.00E+000	6.0
TH-229	T	4.898	200.83	13.84	0.17	0.00E+000	3.8
TH-230		4.618	15.66	50.15	0.34	0.00E+000	3.0
TH-232		3.978	8.66	68.12	0.34	0.00E+000	3.0

T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/sample)	MDA (pCi/sample)
TH-227	0.985	5850.00*	1.61E-001 +/- 1.49E-001	1.71E-001 +/- 2.59E-002
TH-228	0.999	5400.00*	5.24E-002 +/- 8.92E-002	1.51E-001 +/- 2.28E-002
TH-229	0.996	4872.00*	5.93E+000 +/- 8.96E-001	1.23E-001 +/- 1.86E-002
TH-230	0.985	4672.00*	4.61E-001 +/- 2.42E-001	1.41E-001 +/- 2.13E-002
TH-232	0.998	3997.00*	2.55E-001 +/- 1.78E-001	1.41E-001 +/- 2.12E-002

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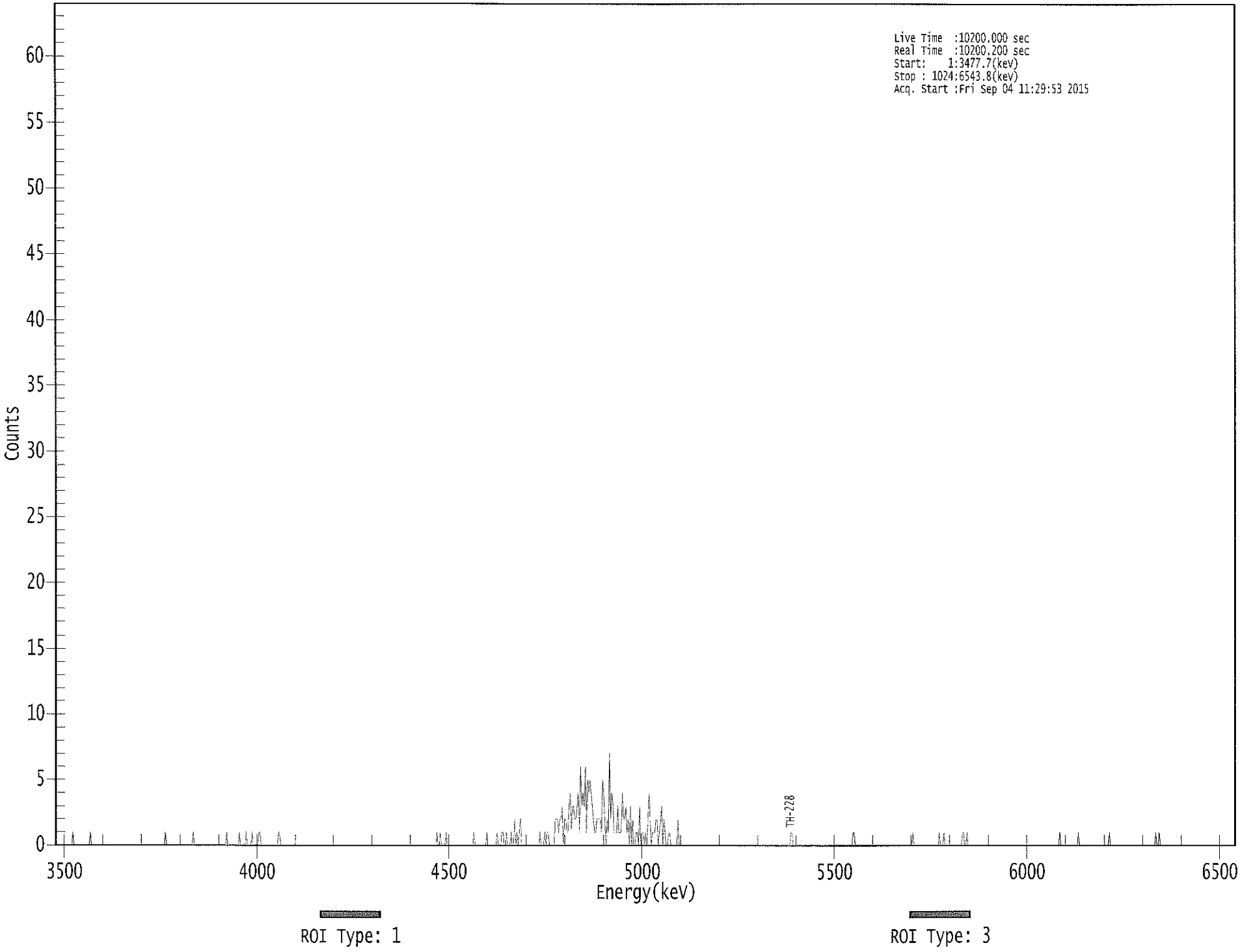

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***** S P E C T R A L D A T A R E P O R T *****
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Sample Title: 09

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	1
17:	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	1	0
33:	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0
65:	0	0	0	0	0	0	0	0
73:	0	0	0	0	0	0	0	0
81:	0	0	0	0	0	0	0	0
89:	0	0	0	0	0	0	0	1
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	0	0	1	0	0	0
153:	0	0	0	0	0	0	0	1
161:	0	0	0	0	0	1	0	0
169:	0	0	1	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	1	1	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	1	0	0	1	0
337:	0	0	0	1	0	0	0	0
345:	0	0	0	0	0	0	0	0
353:	0	0	0	0	0	0	0	0
361:	0	0	0	1	0	0	0	0

369:	0	0	0	0	0	0	1	0

Sample Title: 09

Channel								
377:	0	0	0	0	0	0	0	1
385:	0	0	0	1	1	0	0	1
393:	0	0	0	1	0	0	2	0
401:	1	0	1	2	0	0	0	0
409:	0	0	0	0	0	0	0	0
417:	0	0	0	0	1	0	0	0
425:	1	0	1	1	0	0	0	0
433:	0	2	2	2	1	2	2	3
441:	0	2	2	1	1	3	4	1
449:	3	3	2	2	3	4	1	6
457:	3	4	3	6	1	5	4	5
465:	4	3	2	1	1	2	2	2
473:	2	1	5	4	2	0	2	1
481:	7	2	4	3	1	1	1	3
489:	1	1	1	4	2	2	3	1
497:	2	0	3	0	2	0	0	1
505:	1	0	3	0	1	1	0	1
513:	0	2	4	2	0	1	1	1
521:	2	2	0	1	2	3	0	2
529:	1	0	0	1	1	0	0	0
537:	0	0	0	2	0	0	0	0
545:	0	0	0	0	0	0	0	0
553:	0	0	0	0	0	0	0	0
561:	0	0	0	0	0	0	0	0
569:	0	0	0	0	0	0	0	0
577:	0	0	0	0	0	0	0	0
585:	0	0	0	0	0	0	0	0
593:	0	0	0	0	0	0	0	0
601:	0	0	0	0	0	0	0	0
609:	0	0	0	0	0	0	0	0
617:	0	0	0	0	0	0	0	0
625:	0	0	0	0	0	0	0	0
633:	0	0	0	0	0	1	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	1	1	0	0	0
697:	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0
713:	0	0	0	0	0	0	0	0
721:	0	0	0	0	0	0	0	0
729:	0	0	0	0	0	0	0	0
737:	0	0	0	0	0	0	0	1
745:	0	0	0	0	0	0	0	0
753:	0	0	0	0	0	0	0	0
761:	0	0	0	0	0	0	1	0
769:	0	0	1	0	0	0	0	0
777:	0	0	0	0	0	0	0	0
785:	0	0	1	1	0	0	1	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	1	0
873:	0	0	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	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	1	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

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Apex-Alpha™

Sample Description: ENGWESA007
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001279
Batch Identification: 1508105A-TH
Sample Identification: 10
Sample Geometry: Shelf 2
Procedure Description: Th iso

Detector Name: Alpha_045
Chamber Serial Number: 04026482A
Detector Serial Number: 91131
Env. Background: System Bkgd 127752
Reagent Blank: <not performed>

Sample Size: 3.975E-001 +/- 0.000E+000 sample
Sample Date/Time: 6/23/2015 6:05:04 AM
Acquisition Date/Time: 9/4/2015 11:29:55 AM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
Tracer Quantity: 0.233 mL
Effective Efficiency: 0.2064 +/- 0.0166
Counting Efficiency: 0.1760 +/- 0.0031 on 10/25/2014 3:16:42 PM
Chem. Recovery Factor: 1.1727 +/- 0.0963

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		5.822	6.13	92.22	1.87	0.00E+000	3.0
TH-228		5.367	20.81	44.38	1.19	0.00E+000	3.0
TH-229	T	4.885	183.32	14.51	0.68	0.00E+000	6.0
TH-230		4.645	36.98	32.75	1.02	0.00E+000	3.0
TH-232		3.959	13.62	58.29	2.38	0.00E+000	3.0

T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/sample)	MDA (pCi/sample)
TH-227	0.996	5850.00*	2.04E-001 +/- 1.91E-001	2.52E-001 +/- 3.97E-002
TH-228	0.994	5400.00*	7.23E-001 +/- 3.40E-001	2.29E-001 +/- 3.60E-002
TH-229	0.999	4872.00*	5.95E+000 +/- 9.36E-001	1.83E-001 +/- 2.88E-002
TH-230	0.996	4672.00*	1.20E+000 +/- 4.35E-001	2.04E-001 +/- 3.21E-002
TH-232	0.993	3997.00*	4.40E-001 +/- 2.66E-001	2.65E-001 +/- 4.16E-002

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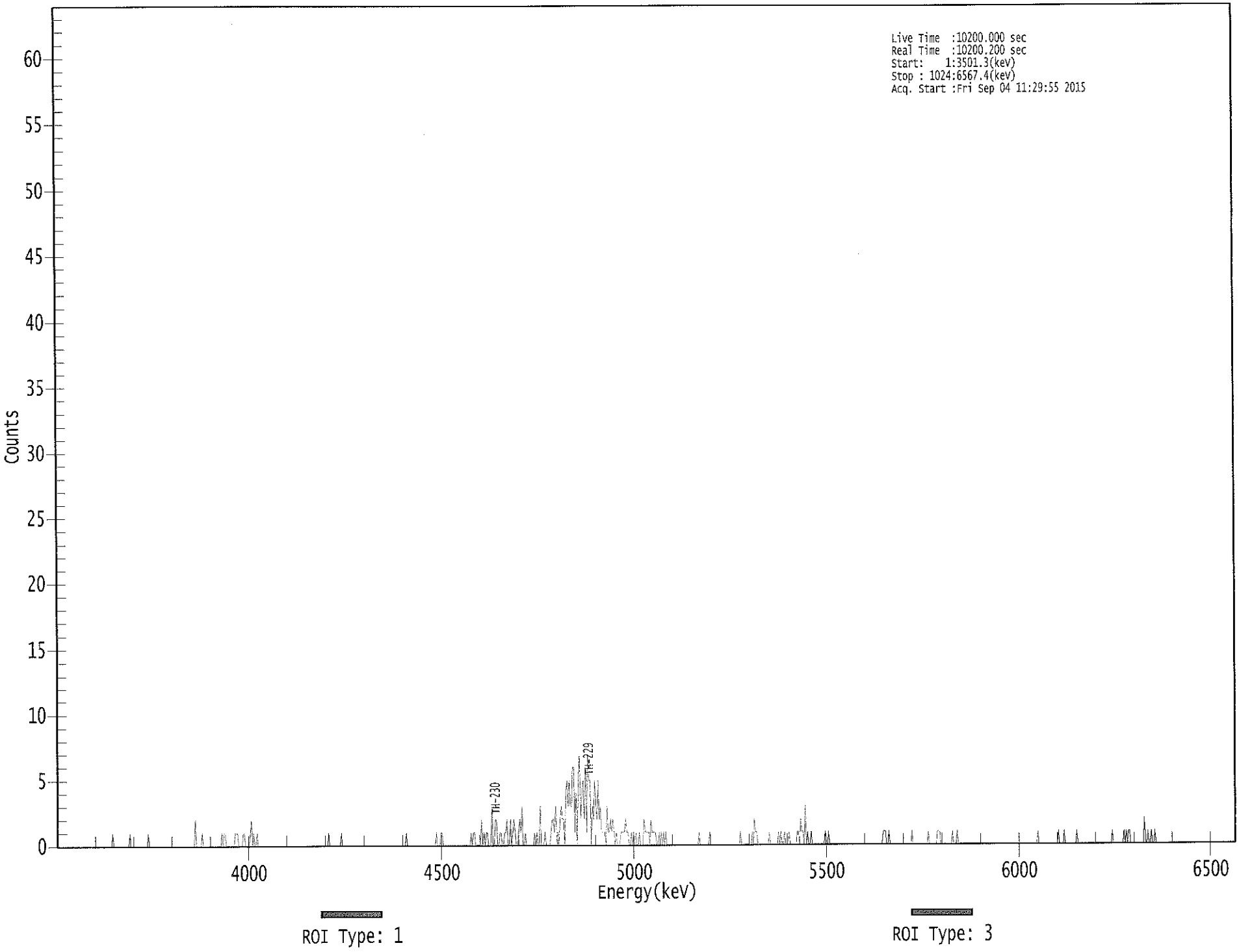
0000127991.CNF



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

Sample Title: 10

Elapsed Live time: 10200
Elapsed Real Time: 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	1
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:	2	0	0	0	0	0	1	0
129:	0	0	0	0	0	0	0	0
137:	0	0	0	0	0	0	0	1
145:	0	1	1	0	0	0	0	0
153:	0	0	0	1	1	1	0	0
161:	0	0	1	1	0	0	0	0
169:	1	2	0	1	0	0	1	0
177:	0	0	0	0	0	0	0	0
185:	0	0	0	0	0	0	0	0
193:	0	0	0	0	0	0	0	0
201:	0	0	0	0	0	0	0	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	1
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	1
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	1	0	0	0	1	1	0
337:	0	0	0	0	0	0	0	0
345:	0	0	0	0	0	0	0	0
353:	0	0	0	0	0	0	0	1
361:	0	1	1	0	0	0	0	0

369:	2	0	1	0	1	1	0	0

Sample Title: 10

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

801:	0	0	0	0	0	0	0	0

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	1	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	1	0	0	0
873:	0	1	0	0	0	0	0	0
881:	0	0	0	0	1	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0
913:	0	0	0	1	0	0	0	0
921:	0	0	0	0	0	1	0	1
929:	0	1	1	0	0	0	0	0
937:	0	0	0	0	0	0	0	2
945:	0	0	1	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 9/4/15

Sample Description: ENGWESA008
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001279
Batch Identification: 1508105A-TH
Sample Identification: 11
Sample Geometry: Shelf 2
Procedure Description: Th iso

Detector Name: Alpha_046
Chamber Serial Number: 04026482B
Detector Serial Number: 58762
Env. Background: System Bkgd 127753
Reagent Blank: <not performed>

Sample Size: 3.975E-001 +/- 0.000E+000 sample
Sample Date/Time: 6/23/2015 6:05:04 AM
Acquisition Date/Time: 9/4/2015 11:29:57 AM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
Tracer Quantity: 0.232 mL
Effective Efficiency: 0.2022 +/- 0.0165
Counting Efficiency: 0.1776 +/- 0.0031 on 10/25/2014 3:20:08 PM
Chem. Recovery Factor: 1.1384 +/- 0.0948

Peak Match Tolerance: 0.175 MeV

PEAK AREA REPORT

Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
TH-227		5.797	4.64	105.44	1.36	0.00E+000	3.0
TH-228		5.314	9.30	70.81	1.70	0.00E+000	3.0
TH-229	T	4.888	178.96	14.75	2.04	0.00E+000	4.4
TH-230		4.632	24.32	40.39	0.68	0.00E+000	3.8
TH-232		3.972	5.45	104.44	2.55	0.00E+000	3.0

T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/sample)	MDA (pCi/sample)
TH-227	0.985	5850.00*	1.58E-001 +/- 1.68E-001	2.33E-001 +/- 3.72E-002
TH-228	0.962	5400.00*	3.30E-001 +/- 2.39E-001	2.61E-001 +/- 4.16E-002
TH-229	0.999	4872.00*	5.93E+000 +/- 9.46E-001	2.58E-001 +/- 4.12E-002
TH-230	0.992	4672.00*	8.03E-001 +/- 3.49E-001	1.86E-001 +/- 2.97E-002
TH-232	0.997	3997.00*	1.80E-001 +/- 1.90E-001	2.77E-001 +/- 4.41E-002

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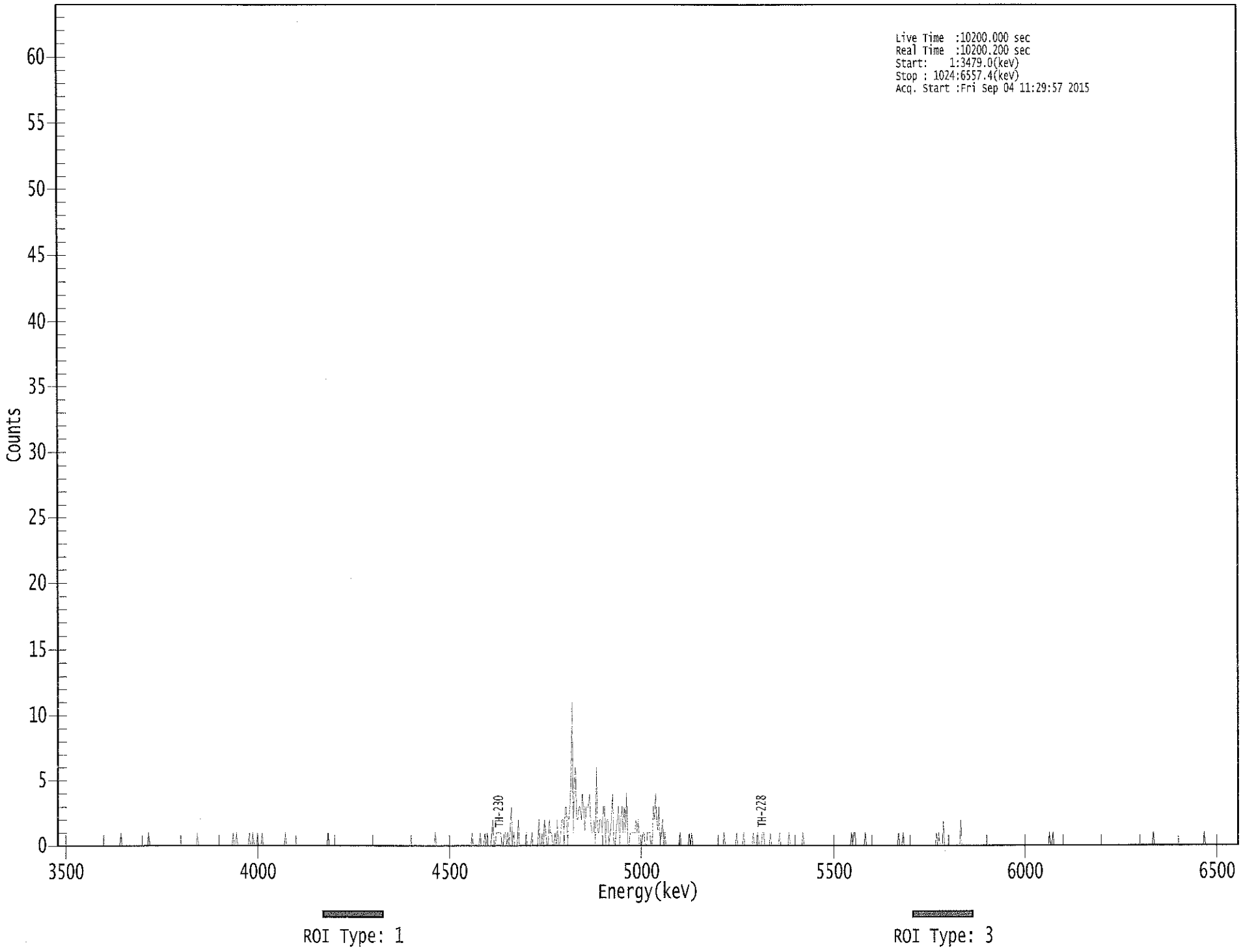
0000127992.CNF



127992

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

Sample Title: 11

Elapsed Live time: 10200
Elapsed Real Time: 10200

Channel								
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	1
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	1	0	0	0	0	0	0
129:	0	0	0	0	0	0	0	0
137:	0	0	0	0	0	0	0	0
145:	0	0	0	0	0	0	0	0
153:	1	0	0	1	0	0	0	0
161:	0	0	0	0	0	0	1	0
169:	0	1	0	0	0	1	0	0
177:	0	1	0	0	0	0	0	0
185:	0	0	0	0	0	0	0	0
193:	0	0	0	0	0	1	0	0
201:	0	0	0	0	0	0	0	0
209:	0	0	0	0	0	0	0	0
217:	0	0	0	0	0	0	0	0
225:	0	0	0	0	0	0	0	0
233:	0	0	1	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	1
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	1
361:	0	0	0	0	0	0	1	0

369:	0	0	1	0	1	0	0	0

Sample Title: 11

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

801:	0	0	0	0	0	0	0	0

Sample Title: 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	1	0	0	1	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	0	0
937:	0	0	0	0	0	0	0	0
945:	0	0	0	0	0	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	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

KB
9/4/15

Apex-Alpha™

Sample Description: ENGWESA009
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001279
Batch Identification: 1508105A-TH
Sample Identification: 12
Sample Geometry: Shelf 2
Procedure Description: Th iso

Detector Name: Alpha_047
Chamber Serial Number: 02030596A
Detector Serial Number: 91086
Env. Background: System Bkgd 127754
Reagent Blank: <not performed>

Sample Size: 3.975E-001 +/- 0.000E+000 sample
Sample Date/Time: 6/23/2015 6:05:04 AM
Acquisition Date/Time: 9/4/2015 11:29:59 AM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
Tracer Quantity: 0.232 mL
Effective Efficiency: 0.2012 +/- 0.0163
Counting Efficiency: 0.1650 +/- 0.0029 on 10/25/2014 3:23:35 PM
Chem. Recovery Factor: 1.2191 +/- 0.1013

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		5.860	2.83	120.53	0.17	0.00E+000	3.0
TH-228		5.273	8.83	66.70	0.17	0.00E+000	3.0
TH-229	T	4.860	178.32	14.71	0.68	0.00E+000	11.9
TH-230		4.630	29.32	36.68	0.68	0.00E+000	3.0
TH-232		3.906	6.66	78.18	0.34	0.00E+000	3.0

T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/sample)	MDA (pCi/sample)
TH-227	0.999	5850.00*	9.68E-002 +/- 1.18E-001	1.43E-001 +/- 2.27E-002
TH-228	0.919	5400.00*	3.15E-001 +/- 2.16E-001	1.49E-001 +/- 2.37E-002
TH-229	0.999	4872.00*	5.94E+000 +/- 9.45E-001	1.88E-001 +/- 2.99E-002
TH-230	0.991	4672.00*	9.73E-001 +/- 3.89E-001	1.87E-001 +/- 2.98E-002
TH-232	0.958	3997.00*	2.21E-001 +/- 1.76E-001	1.58E-001 +/- 2.52E-002

AG
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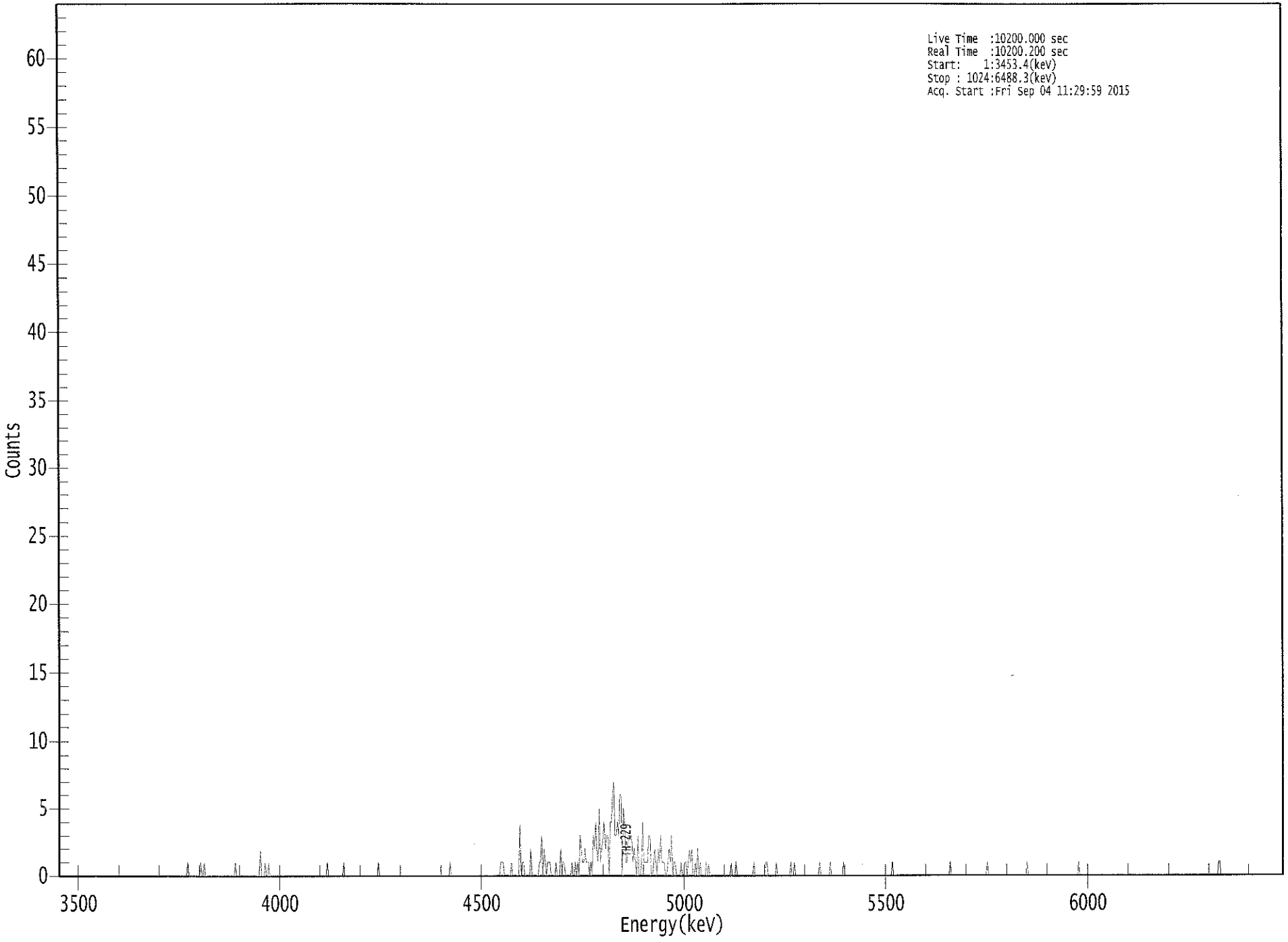
0000127993.CNF



2h2500 : 00242

****
***** 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	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	1	0	0	0	0
113:	0	0	0	0	0	0	1	0
121:	0	1	0	0	0	0	0	0
129:	0	0	0	0	0	0	0	0
137:	0	0	0	0	0	0	0	0
145:	0	0	0	1	0	0	0	0
153:	0	0	0	0	0	0	0	0
161:	0	0	0	0	0	0	0	0
169:	2	0	0	0	1	0	0	1
177:	0	0	0	0	0	0	0	0
185:	0	0	0	0	0	0	0	0
193:	0	0	0	0	0	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:	1	0	0	0	0	0	0	0
233:	0	0	0	0	0	0	1	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	1	0	0	0	0
273:	0	0	0	0	0	0	0	0
281:	0	0	0	0	0	0	0	0
289:	0	0	0	0	0	0	0	0
297:	0	0	0	0	0	0	0	0
305:	0	0	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	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	1	1	1	0	0	0	0

Sample Title: 12

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

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

Apex-Alpha™

KB 9/14/15

Sample Description: ENGWESA010
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001279
Batch Identification: 1508105A-TH
Sample Identification: 13
Sample Geometry: Shelf 2
Procedure Description: Th iso

Detector Name: Alpha_048
Chamber Serial Number: 02030596B
Detector Serial Number: 83111
Env. Background: System Bkgd 127755
Reagent Blank: <not performed>

Sample Size: 3.975E-001 +/- 0.000E+000 sample
Sample Date/Time: 6/23/2015 6:05:04 AM
Acquisition Date/Time: 9/4/2015 11:30:01 AM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
Tracer Quantity: 0.232 mL
Effective Efficiency: 0.2096 +/- 0.0168
Counting Efficiency: 0.1700 +/- 0.0030 on 10/25/2014 3:27:02 PM
Chem. Recovery Factor: 1.2324 +/- 0.1009

Peak Match Tolerance: 0.175 MeV

PEAK AREA REPORT

Nuclide		Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
TH-227		5.873	4.81	101.48	1.19	0.00E+000	3.0
TH-228		5.271	14.96	54.57	2.04	0.00E+000	3.0
TH-229	T	4.863	185.64	14.45	1.36	0.00E+000	7.4
TH-230		4.642	33.79	34.98	2.21	0.00E+000	5.9
TH-232		3.970	9.47	69.45	1.53	0.00E+000	3.0

T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/sample)	MDA (pCi/sample)
TH-227	0.997	5850.00*	1.58E-001 +/- 1.62E-001	2.16E-001 +/- 3.39E-002
TH-228	0.917	5400.00*	5.12E-001 +/- 2.91E-001	2.67E-001 +/- 4.18E-002
TH-229	1.000	4872.00*	5.93E+000 +/- 9.30E-001	2.19E-001 +/- 3.43E-002
TH-230	0.995	4672.00*	1.08E+000 +/- 4.13E-001	2.55E-001 +/- 3.99E-002
TH-232	0.996	3997.00*	3.01E-001 +/- 2.14E-001	2.26E-001 +/- 3.54E-002

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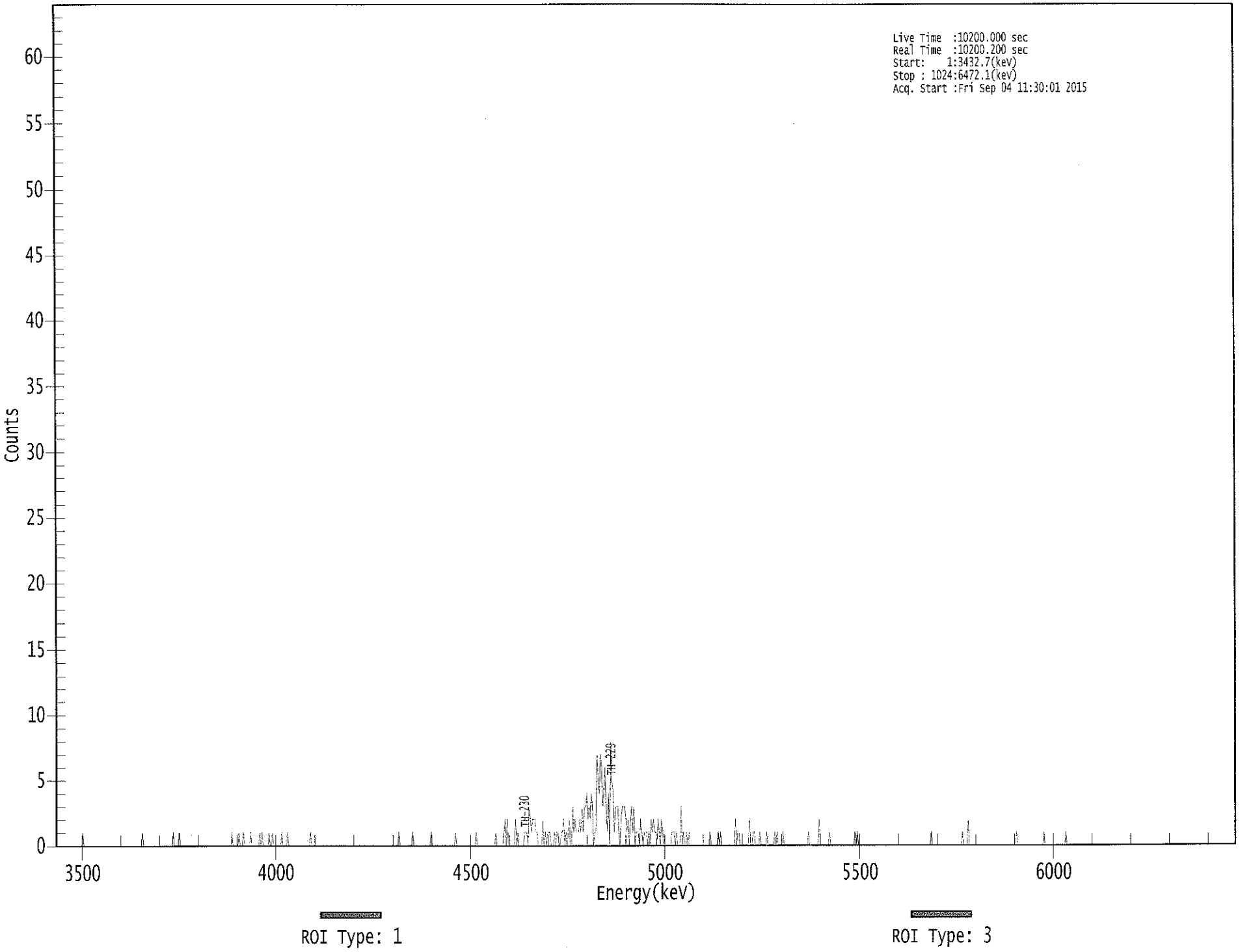
0000127994.CNF



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

Sample Title: 13

Elapsed Live time: 10200
Elapsed Real Time: 10200

Channel								
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	1
25:	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0
65:	0	0	0	0	0	0	0	0
73:	0	0	0	1	0	0	0	0
81:	0	0	0	0	0	0	0	0
89:	0	0	0	0	0	0	0	0
97:	0	0	0	0	0	0	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	0
129:	0	0	0	0	0	0	0	0
137:	0	0	0	0	0	0	0	0
145:	0	0	0	0	0	0	0	0
153:	0	1	0	0	0	0	0	1
161:	0	0	0	1	0	0	0	0
169:	0	1	0	0	0	0	0	0
177:	0	1	0	1	0	0	0	0
185:	0	1	0	0	1	0	0	0
193:	0	0	0	0	1	0	0	0
201:	0	1	0	0	0	0	0	0
209:	0	0	0	0	0	0	0	0
217:	0	0	0	0	0	1	0	0
225:	0	0	0	0	0	0	0	0
233:	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	1	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	1	0	0
329:	0	0	0	0	0	0	0	0
337:	0	0	0	0	0	0	0	0
345:	0	0	1	0	0	0	0	0
353:	0	0	0	0	0	0	0	0
361:	0	0	0	0	1	0	0	0

369:	0	0	0	0	0	0	0	0

Sample Title: 13

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

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Apex-Alpha™

Sample Description: ENGWESA011
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001280
Batch Identification: 1508105A-TH
Sample Identification: 14
Sample Geometry: Shelf 2
Procedure Description: Th iso

Detector Name: Alpha_049
Chamber Serial Number: 10006121A
Detector Serial Number: 49
Env. Background: System Bkgd 127756
Reagent Blank: <not performed>

Sample Size: 3.975E-001 +/- 0.000E+000 sample
Sample Date/Time: 6/23/2015 6:05:04 AM
Acquisition Date/Time: 9/4/2015 1:28:00 PM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
Tracer Quantity: 0.233 mL
Effective Efficiency: 0.1641 +/- 0.0145
Counting Efficiency: 0.1525 +/- 0.0027 on 12/13/2014 2:45:02 PM
Chem. Recovery Factor: 1.0756 +/- 0.0972

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		5.995	1.66	169.38	0.34	0.00E+000	3.0
TH-228		5.334	9.49	65.59	0.51	0.00E+000	3.0
TH-229	T	4.874	145.66	16.26	0.34	0.00E+000	7.9
TH-230		4.612	23.32	41.27	0.68	0.00E+000	5.9
TH-232		3.983	6.49	80.40	0.51	0.00E+000	3.0

T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/sample)	MDA (pCi/sample)
TH-227	0.896	5850.00*	6.96E-002 +/- 1.19E-001	2.01E-001 +/- 3.48E-002
TH-228	0.978	5400.00*	4.15E-001 +/- 2.82E-001	2.29E-001 +/- 3.98E-002
TH-229	1.000	4872.00*	5.95E+000 +/- 1.03E+000	1.95E-001 +/- 3.39E-002
TH-230	0.981	4672.00*	9.49E-001 +/- 4.25E-001	2.30E-001 +/- 3.99E-002
TH-232	0.999	3997.00*	2.64E-001 +/- 2.17E-001	2.13E-001 +/- 3.70E-002

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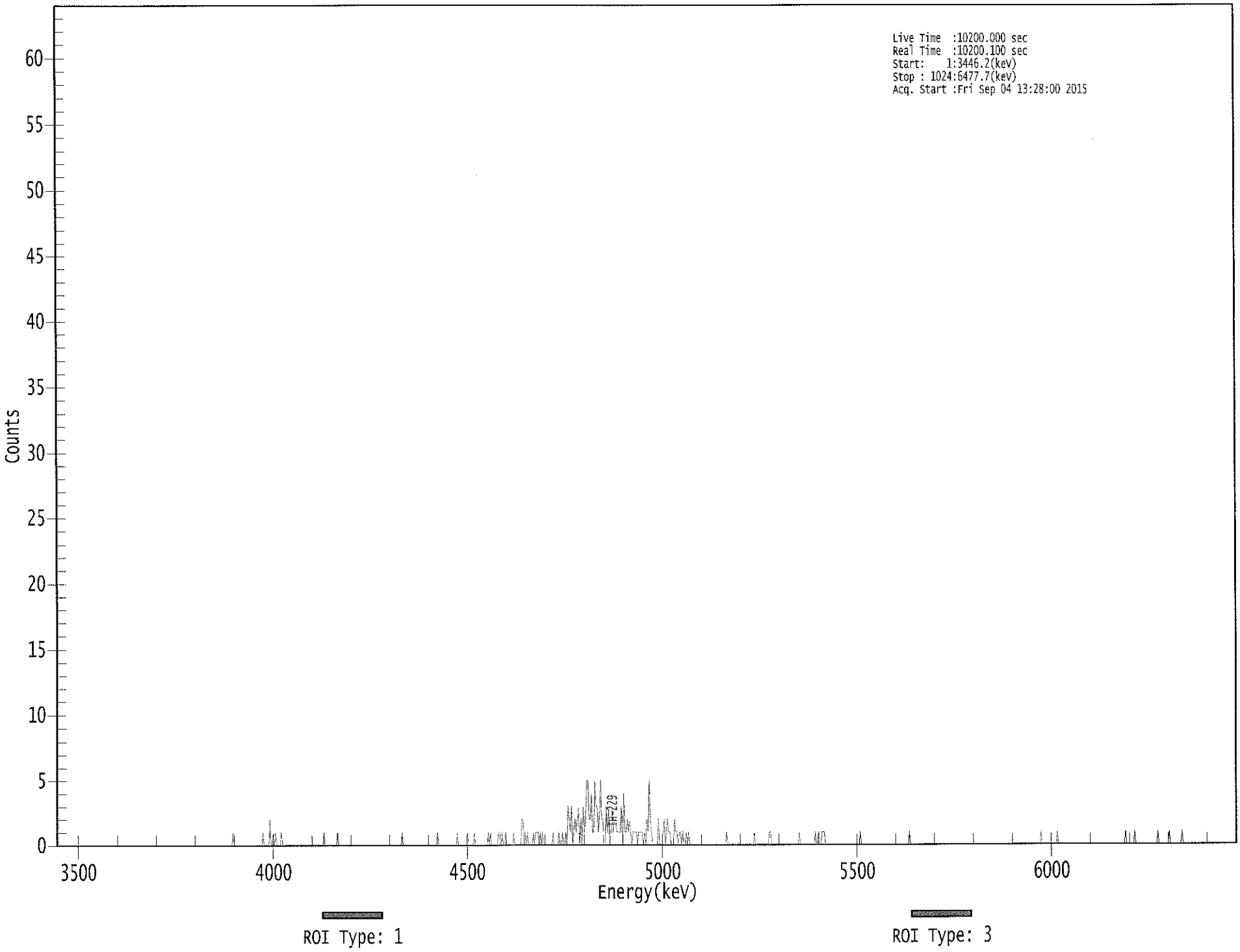
0000128003.CNF



25256

****
***** 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	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:	1	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:	2	0	0	1	0	1	0	0
193:	0	0	1	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	1
233:	0	0	0	0	0	0	0	0
241:	0	0	0	1	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	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	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:	0	0	0	1	0	0	0	0
353:	0	0	0	0	1	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:	1	0	0	0	0	0	0	1
385:	1	0	1	0	0	1	0	0
393:	0	0	0	0	1	0	0	0
401:	0	0	0	2	2	0	1	0
409:	1	0	0	0	0	1	0	1
417:	1	1	0	1	0	1	0	0
425:	0	0	0	0	0	0	1	0
433:	0	0	0	1	0	0	1	0
441:	0	1	0	3	2	1	3	0
449:	1	2	1	2	3	0	2	0
457:	3	1	2	5	5	2	2	4
465:	1	1	5	3	3	1	2	5
473:	2	2	0	0	3	1	3	0
481:	1	3	1	2	2	1	1	1
489:	1	3	0	4	1	1	2	1
497:	2	1	0	1	1	1	1	0
505:	1	1	1	1	0	1	0	2
513:	1	5	2	1	0	0	0	0
521:	0	2	0	0	0	1	2	0
529:	1	2	1	1	0	0	0	2
537:	1	1	0	1	1	0	1	0
545:	0	1	0	1	0	0	0	0
553:	0	0	0	0	0	0	0	0
561:	0	0	0	0	0	0	0	0
569:	0	0	0	0	0	0	0	0
577:	0	0	0	0	1	0	0	0
585:	0	0	0	0	0	0	0	0
593:	0	0	0	0	0	0	0	0
601:	0	0	0	0	1	0	0	0
609:	0	0	0	0	0	0	0	0
617:	0	1	1	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	1	0	0	0	0
649:	0	0	0	0	0	0	0	0
657:	0	1	0	0	1	0	0	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	0	0	0	0	0	0	0
697:	1	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0
713:	0	0	0	0	0	0	0	0
721:	0	0	0	0	0	0	0	0
729:	0	0	0	0	0	0	0	0
737:	0	0	0	1	0	0	0	0
745:	0	0	0	0	0	0	0	0
753:	0	0	0	0	0	0	0	0
761:	0	0	0	0	0	0	0	0
769:	0	0	0	0	0	0	0	0
777:	0	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0

801:	0	0	0	0	0	0	0	0

Sample Title: 14

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

RB 9/4/15

Sample Description: ENGWESA012
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001280
Batch Identification: 1508105A-TH
Sample Identification: 15
Sample Geometry: Shelf 2
Procedure Description: Th iso

Detector Name: Alpha_050
Chamber Serial Number: 10006121B
Detector Serial Number: 50
Env. Background: System Bkgd 127757
Reagent Blank: <not performed>

Sample Size: 2.950E-001 +/- 0.000E+000 sample
Sample Date/Time: 6/23/2015 6:05:04 AM
Acquisition Date/Time: 9/4/2015 1:28:02 PM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
Tracer Quantity: 0.231 mL
Effective Efficiency: 0.1615 +/- 0.0144
Counting Efficiency: 0.1428 +/- 0.0026 on 12/13/2014 2:43:59 PM
Chem. Recovery Factor: 1.1315 +/- 0.1032

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	0.15	1397.8	0.85	0.00E+000	3.0
TH-228		5.362	22.98	41.93	1.02	0.00E+000	3.7
TH-229	T	4.868	142.66	16.43	0.34	0.00E+000	4.0
TH-230		4.623	38.49	31.84	0.51	0.00E+000	5.9
TH-232		3.936	16.49	49.13	0.51	0.00E+000	3.0

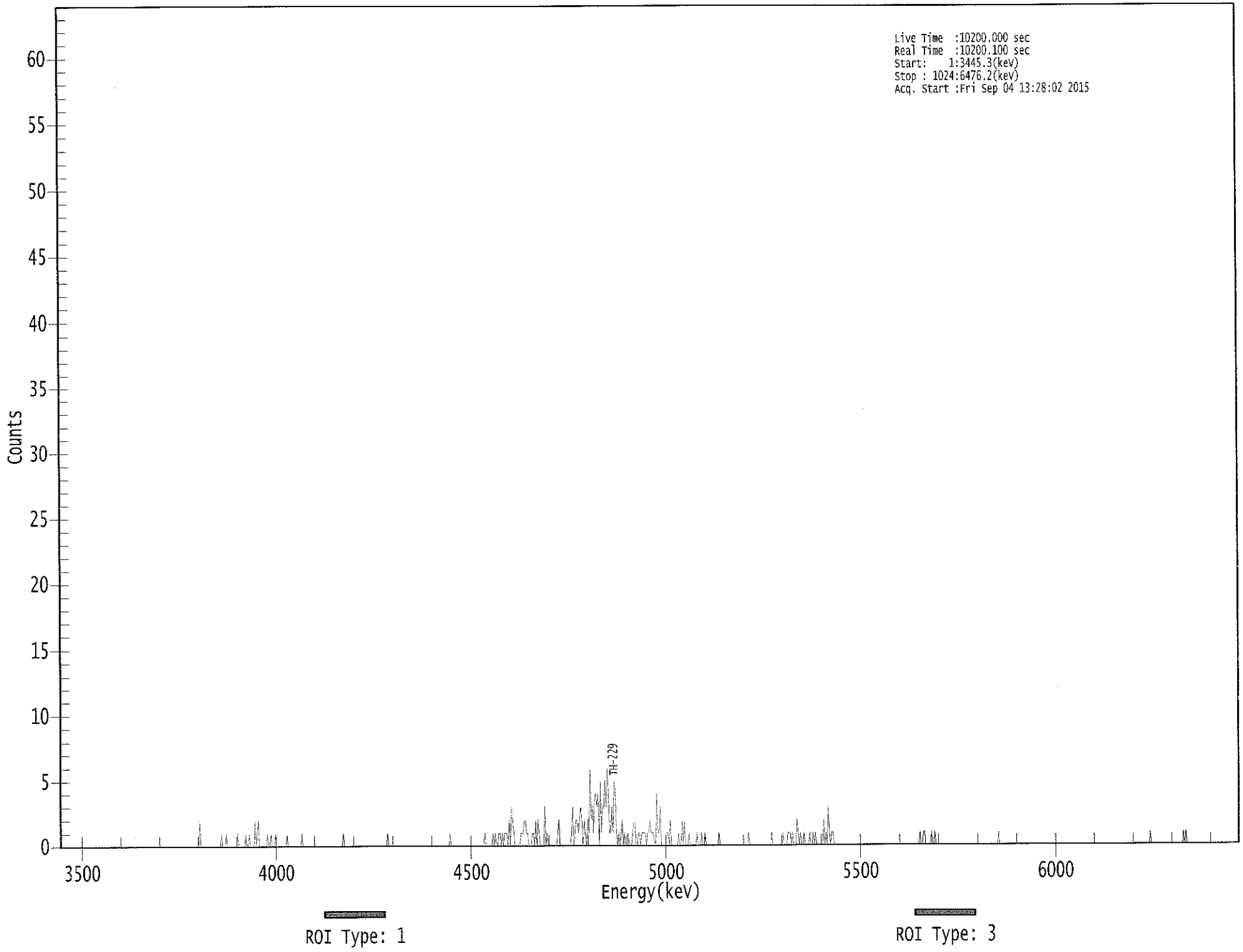
T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/sample)	MDA (pCi/sample)
TH-227	1.000	5850.00*	8.61E-003 +/- 1.20E-001	3.44E-001 +/- 6.02E-002
TH-228	0.992	5400.00*	1.38E+000 +/- 6.25E-001	3.77E-001 +/- 6.61E-002
TH-229	1.000	4872.00*	7.97E+000 +/- 1.40E+000	2.67E-001 +/- 4.68E-002
TH-230	0.988	4672.00*	2.14E+000 +/- 7.79E-001	2.92E-001 +/- 5.12E-002
TH-232	0.981	3997.00*	9.17E-001 +/- 4.78E-001	2.92E-001 +/- 5.11E-002

AG 9/8/15

0000128004.CNF



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

Sample Title: 15

Elapsed Live time: 10200
Elapsed Real Time: 10200

Channel							
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0
65:	0	0	0	0	0	0	0	0
73:	0	0	0	0	0	0	0	0
81:	0	0	0	0	0	0	0	0
89:	0	0	0	0	0	0	0	0
97:	0	0	0	0	0	0	0	0
105:	0	0	0	0	0	0	0	0
113:	0	0	0	0	0	0	0	0
121:	0	2	0	0	0	0	0	0
129:	0	0	0	0	0	0	0	0
137:	0	0	0	0	1	0	0	0
145:	1	0	0	0	0	0	0	0
153:	0	0	1	0	0	0	0	0
161:	0	1	0	0	1	0	0	0
169:	0	2	0	1	2	0	0	0
177:	0	0	0	0	1	0	0	1
185:	0	0	0	1	0	0	0	0
193:	0	0	0	0	0	1	0	0
201:	0	0	0	0	0	0	0	0
209:	0	0	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:	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	0	0	0	0	0	0
265:	0	0	0	0	0	0	0	0
273:	0	0	0	0	0	0	0	0
281:	0	0	0	0	1	0	0	0
289:	0	0	0	0	0	0	0	0
297:	0	0	0	0	0	0	0	0
305:	0	0	0	0	0	0	0	0
313:	0	0	0	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	1	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:	1	0	0	0	0	0	0	1

Sample Title: 15

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

801:	0	0	0	0	0	0	0	0

Sample Title: 15

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

KB 9/14/15

Apex-Alpha™

Sample Description: ENGWESA013
Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00001280
Batch Identification: 1508105A-TH
Sample Identification: 16
Sample Geometry: Shelf 2
Procedure Description: Th iso

Detector Name: Alpha_051
Chamber Serial Number: 10006123A
Detector Serial Number: 51
Env. Background: System Bkgd 127758
Reagent Blank: <not performed>

Sample Size: 3.975E-001 +/- 0.000E+000 sample
Sample Date/Time: 6/23/2015 6:05:04 AM
Acquisition Date/Time: 9/4/2015 1:28:03 PM
Acquisition Live Time: 170.0 minutes
Acquisition Real Time: 170.0 minutes

Tracer Certificate: Th229_S_TH-18A
Tracer Quantity: 0.231 mL
Effective Efficiency: 0.1954 +/- 0.0162
Counting Efficiency: 0.1524 +/- 0.0027 on 12/13/2014 2:42:37 PM
Chem. Recovery Factor: 1.2824 +/- 0.1087

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		5.872	-4.08	62.52	4.08	0.00E+000	0.0
TH-228		5.285	0.73	705.06	5.27	0.00E+000	3.0
TH-229	T	4.886	172.45	15.05	2.55	0.00E+000	6.9
TH-230		4.628	22.96	42.98	2.04	0.00E+000	3.0
TH-232		3.934	4.15	107.12	0.85	0.00E+000	3.0

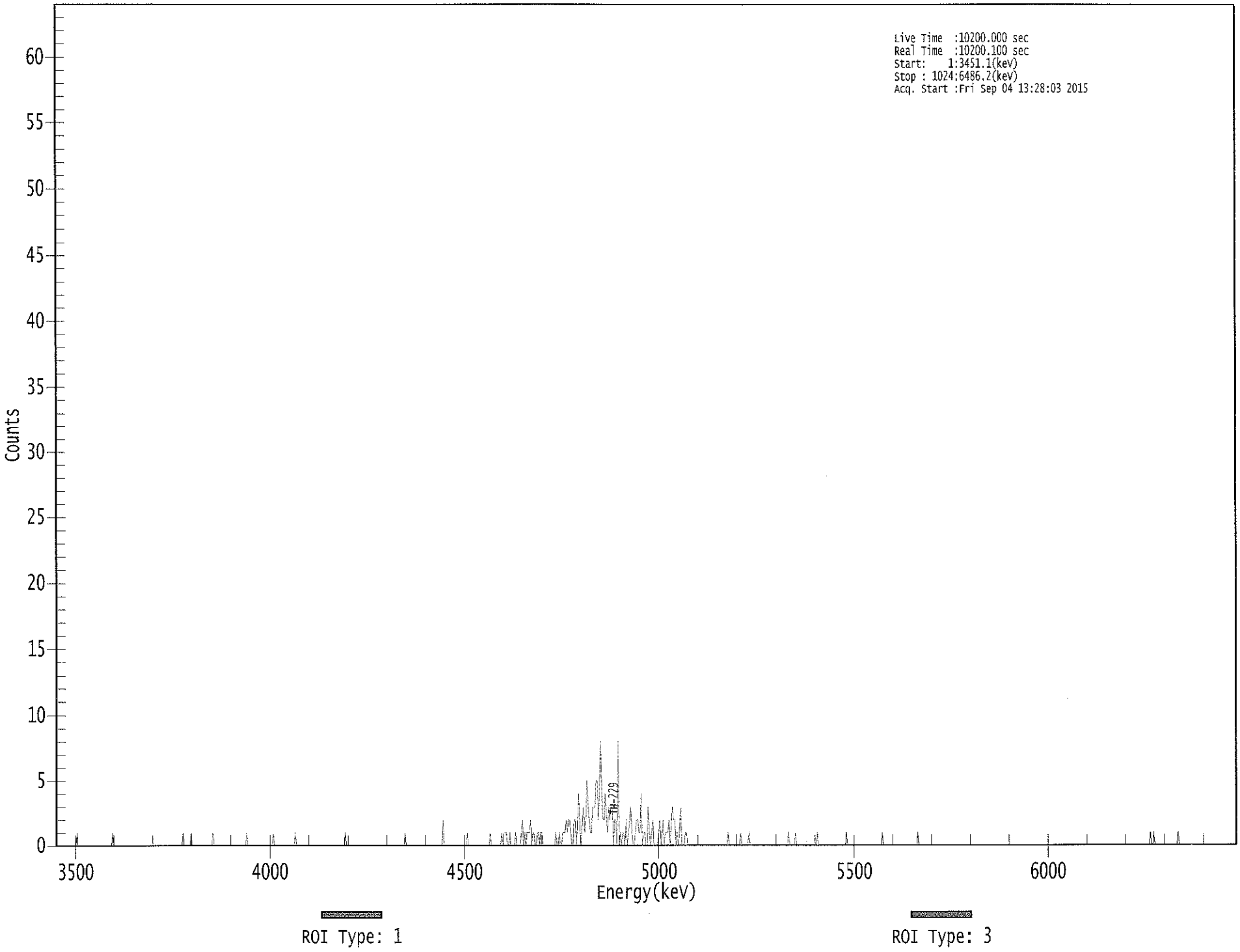
T = Tracer Peak used for Effective Efficiency

NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/sample)	MDA (pCi/sample)
TH-227	0.997	5850.00*	-1.44E-001 +/- 9.28E-002	3.48E-001 +/- 5.66E-002
TH-228	0.933	5400.00*	2.68E-002 +/- 1.89E-001	3.99E-001 +/- 6.48E-002
TH-229	0.999	4872.00*	5.91E+000 +/- 9.60E-001	2.88E-001 +/- 4.67E-002
TH-230	0.990	4672.00*	7.85E-001 +/- 3.60E-001	2.66E-001 +/- 4.32E-002
TH-232	0.979	3997.00*	1.42E-001 +/- 1.53E-001	2.04E-001 +/- 3.32E-002

AG 9/8/15

0000128005.CNF



25200 : 00252

****
***** 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	1	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	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	0	0	0	0	0	0
89:	0	0	0	0	0	0	0	0
97:	0	0	0	0	0	0	0	0
105:	0	0	0	0	0	0	1	0
113:	0	0	0	0	0	1	0	0
121:	0	0	0	0	0	0	0	0
129:	0	0	0	0	0	0	0	0
137:	1	0	0	0	0	0	0	0
145:	0	0	0	0	0	0	0	0
153:	0	0	0	0	0	0	0	0
161:	0	0	0	0	0	1	0	0
169:	0	0	0	0	0	0	0	0
177:	0	0	0	0	0	0	0	0
185:	0	0	0	0	1	0	0	0
193:	0	0	0	0	0	0	0	0
201:	0	0	0	0	0	0	0	1
209:	0	0	0	0	0	0	0	0
217:	0	0	0	0	0	0	0	0
225:	0	0	0	0	0	0	0	0
233:	0	0	0	0	0	0	0	0
241:	0	0	0	0	0	0	0	0
249:	0	0	1	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	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	0
329:	0	0	0	0	0	0	0	2
337:	0	0	0	0	0	0	0	0
345:	0	0	0	0	0	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	0	0	0

Sample Title: 16

Channel								
377:	1	0	0	0	0	0	0	0
385:	0	0	1	0	1	1	1	0
393:	0	1	0	0	0	0	1	0
401:	0	0	0	1	2	0	1	0
409:	1	1	1	2	0	1	1	0
417:	0	1	1	0	1	1	0	0
425:	0	0	0	0	0	0	0	0
433:	0	1	0	0	1	0	0	1
441:	1	1	2	1	2	2	1	0
449:	0	2	2	0	2	4	1	0
457:	2	3	1	2	5	3	2	1
465:	1	3	3	3	5	5	2	5
473:	8	4	2	2	4	2	1	3
481:	2	3	3	0	2	2	0	8
489:	0	1	0	1	1	0	2	0
497:	1	2	3	1	0	0	1	2
505:	2	1	1	4	0	1	1	0
513:	0	3	1	0	1	2	0	0
521:	0	0	1	2	0	1	2	0
529:	1	1	1	2	0	2	3	2
537:	2	0	1	0	1	3	0	0
545:	0	1	1	0	0	0	0	0
553:	0	0	0	0	0	0	0	0
561:	0	0	0	0	0	0	0	0
569:	0	0	0	0	0	0	0	0
577:	0	0	0	0	0	0	1	0
585:	0	0	0	0	0	0	0	0
593:	0	1	0	0	0	0	0	0
601:	1	0	0	0	0	0	0	0
609:	0	0	0	0	0	0	0	0
617:	0	0	0	0	0	0	0	0
625:	0	0	0	0	0	0	0	0
633:	0	0	1	0	0	0	0	0
641:	1	0	0	0	0	0	0	0
649:	0	0	0	0	0	0	0	0
657:	0	0	0	1	0	0	0	0
665:	0	0	0	0	0	0	0	0
673:	0	0	0	0	0	0	0	0
681:	0	0	0	0	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	1	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	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	1	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	1	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

9/4/2015 5:24:52 AM

Apex-Alpha™

QA SUMMARY REPORT

Review Of QA Results - Pulser Check

Date : 9/4/2015
Time : 5:24:52 AM

CHAMBER	DEVICE	PARAMETER	FLAG	DATE
Alpha_001	21f	ALL	Not Done	
Alpha_002	21f	ALL	Not Done	
Alpha_003	21f	ALL	Passed	9/4/2015 5:09:06 AM
Alpha_004	21f	ALL	Passed	9/4/2015 5:09:07 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	9/4/2015 5:09:08 AM
Alpha_011	21f	ALL	Passed	9/4/2015 5:09:09 AM
Alpha_012	21f	ALL	Passed	9/4/2015 5:09:10 AM
Alpha_013	21f	ALL	Not Done	
Alpha_014	21f	ALL	Passed	9/4/2015 5:09:11 AM
Alpha_015	21f	Peak Energy OK	Action	9/4/2015 5:09:12 AM
Alpha_016	21f	ALL AB	Not Done	
Alpha_033	Alpha Analyst100DC	ALL	Passed	9/4/2015 5:09:13 AM
Alpha_034	Alpha Analyst100DC	ALL	Passed	9/4/2015 5:09:14 AM
Alpha_035	Alpha Analyst100DC	ALL	Passed	9/4/2015 5:09:16 AM
Alpha_036	Alpha Analyst100DC	ALL	Passed	9/4/2015 5:09:17 AM
Alpha_037	Alpha Analyst100DC	ALL	Passed	9/4/2015 5:09:19 AM
Alpha_038	Alpha Analyst100DC	ALL	Passed	9/4/2015 5:09:20 AM
Alpha_039	Alpha Analyst100DC	ALL	Passed	9/4/2015 5:09:22 AM
Alpha_040	Alpha Analyst100DC	ALL	Passed	9/4/2015 5:09:23 AM
Alpha_041	Alpha Analyst100DC	ALL	Passed	9/4/2015 5:09:25 AM
Alpha_042	Alpha Analyst100DC	ALL	Passed	9/4/2015 5:09:26 AM
Alpha_043	Alpha Analyst100DC	ALL	Passed	9/4/2015 5:09:28 AM
Alpha_044	Alpha Analyst100DC	ALL	Passed	9/4/2015 5:09:30 AM
Alpha_045	Alpha Analyst100DC	ALL	Passed	9/4/2015 5:09:32 AM
Alpha_046	Alpha Analyst100DC	ALL	Passed	9/4/2015 5:09:34 AM
Alpha_047	Alpha Analyst100DC	ALL	Passed	9/4/2015 5:09:36 AM
Alpha_048	Alpha Analyst100DC	ALL	Passed	9/4/2015 5:09:38 AM
Alpha_049	Alpha Analyst100DC	ALL	Passed	9/4/2015 5:09:40 AM
Alpha_050	Alpha Analyst100DC	ALL	Passed	9/4/2015 5:09:42 AM
Alpha_051	Alpha Analyst100DC	ALL	Passed	9/4/2015 5:09:43 AM
Alpha_052	Alpha Analyst100DC	ALL	Passed	9/4/2015 5:09:45 AM
Alpha_053	Alpha Analyst100DC	ALL	Passed	9/4/2015 5:09:47 AM
Alpha_054	Alpha Analyst100DC	ALL	Passed	9/4/2015 5:09:49 AM
Alpha_055	Alpha Analyst100DC	ALL	Passed	9/4/2015 5:09:51 AM
Alpha_056	Alpha Analyst100DC	ALL	Passed	9/4/2015 5:09:53 AM
Alpha_057	Alpha Analyst100DC	ALL	Passed	9/4/2015 5:09:55 AM
Alpha_058	Alpha Analyst100DC	ALL	Passed	9/4/2015 5:09:57 AM

Review of QA Results - Pulser Check

9/4/2015 5:24:52 AM

CHAMBER	DEVICE	PARAMETER	FLAG	DATE
Alpha_059	Alpha Analyst100DC	ALL	Passed	9/4/2015 5:09:59 AM
Alpha_060	Alpha Analyst100DC	ALL	Passed	9/4/2015 5:10:01 AM

APPROVED BY: _____

APPROVAL DATE: 9/4

****
***** 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)

02694A 8/25/15

Eberline Services
Oak Ridge Laboratory
Analysis Sheet

15-08105
Gamma
Run 1

Work Order	15-08105
Analysis Code	Gamma
Run	1
Date Received	8/25/2015
Lab Deadline	9/15/2015
Client	Auxier & Associates, Inc.
Project	WESTLAKE
Report Level	4
Activity Units	pCi
Aliquot Units	S
Matrix	AF
Method	LANL ER-130 Modified
Instrument Type	Gamma Spectroscopy
Radiometric Tracer	
Radiometric Sol#	
Tracer Act (dpm/g)	
Carrier	
Carrier Conc (mg/ml)	

Internal Fraction	Sample Desc	Client ID	Login CPM	Sample Date	Sample Aliquot
01	LCS	LCS		08/26/15 00:00	1.0000E+00
02	MBL	BLANK		08/26/15 00:00	1.0000E+00
03	DUP	ENGWESA001	47	06/24/15 12:15	5.9000E-01
04	DO	ENGWESA001	47	06/24/15 12:15	5.9000E-01
05	TRG	ENGWESA002	50	06/24/15 09:40	7.9500E-01
06	TRG	ENGWESA003	40	06/24/15 10:40	7.9500E-01
07	TRG	ENGWESA004	55	06/24/15 11:40	7.9500E-01
08	TRG	ENGWESA005	40	06/23/15 10:30	7.9500E-01
09	TRG	ENGWESA006	43	06/24/15 13:00	7.9500E-01
10	TRG	ENGWESA007	51	06/23/15 09:38	7.9500E-01
11	TRG	ENGWESA008	44	06/23/15 11:25	7.9500E-01
12	TRG	ENGWESA009	49	06/23/15 13:26	7.9500E-01
13	TRG	ENGWESA010	45	06/23/15 14:10	7.9500E-01
14	TRG	ENGWESA011	48	06/23/15 08:59	7.9500E-01
15	TRG	ENGWESA012	50	06/23/15 14:50	5.9000E-01
16	TRG	ENGWESA013	41	06/23/15 15:30	7.9500E-01

* 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.

00259A

15-08105
Gamma
Run 1

Internal Fraction	Sample Desc	Tracer Aliquot (g)	Tracer Total ACT (dpm)	Radiometric Tracer (pCi)	Radiometric % Rec	Grav Carrier Added (ml)	Grav Filter Tare (g)	Grav Filter Final (g)	Grav Filter Net (g)	Grav % Rec	Mean % Rec	SAF 1*	SAF 2*
01	LCS				0.00								
02	MBL				0.00								
03	DUP				0.00								
04	DO				0.00								
05	TRG				0.00								
06	TRG				0.00								
07	TRG				0.00								
08	TRG				0.00								
09	TRG				0.00								
10	TRG				0.00								
11	TRG				0.00								
12	TRG				0.00								
13	TRG				0.00								
14	TRG				0.00								
15	TRG				0.00								
16	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.

15-08105
Gamma
Run 1

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

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

Preliminary Data Report & Analytical Calculations

Work Order: 15-08105-Gamma-1

Lab Fraction	Nuclide	Sample Desc	Client Identification	Activity Units	Results	Error Estimate	MDA	LSC Known	LCS %R	LCS Flag	RPD Flag	Sample Date	Sample Aliquot	Counting Date/Time	Identified
01	CO-60	LCS	LCS	pCi/s	1.11E+04	1.30E+03	1.80E+02	9.82E+03	112.53	OK		08/26/15 00:00	1.00E+00	08/27/15 17:57	YES
01	CS-137	LCS	LCS	pCi/s	6.81E+03	1.04E+03	1.18E+02	6.23E+03	109.23	OK		08/26/15 00:00	1.00E+00	08/27/15 17:57	YES
02	AC-228	MBL	BLANK	pCi/s	3.79E+00	7.57E+00	1.28E+01					08/26/15 00:00	1.00E+00	08/27/15 18:07	NO
02	BE-7	MBL	BLANK	pCi/s	-8.31E+00	1.46E+01	2.08E+01					08/26/15 00:00	1.00E+00	08/27/15 18:07	NO
02	BI-214	MBL	BLANK	pCi/s	1.77E+00	4.80E+00	6.66E+00					08/26/15 00:00	1.00E+00	08/27/15 18:07	NO
02	K-40	MBL	BLANK	pCi/s	2.29E+01	2.17E+01	4.28E+01					08/26/15 00:00	1.00E+00	08/27/15 18:07	NO
02	PA-231	MBL	BLANK	pCi/s	-2.47E+01	4.56E+01	6.81E+01					08/26/15 00:00	1.00E+00	08/27/15 18:07	NO
02	PB-210	MBL	BLANK	pCi/s	1.94E+01	1.69E+01	2.69E+01					08/26/15 00:00	1.00E+00	08/27/15 18:07	NO
02	PB-214	MBL	BLANK	pCi/s	3.75E+00	3.01E+00	5.11E+00					08/26/15 00:00	1.00E+00	08/27/15 18:07	NO
03	AC-228	DUP	ENGWESA001	pCi/s	5.00E+00	7.16E+00	1.17E+01					06/24/15 12:15	5.90E-01	08/27/15 18:14	NO
03	BE-7	DUP	ENGWESA001	pCi/s	2.60E+03	2.80E+02	8.00E+01				NA	06/24/15 12:15	5.90E-01	08/27/15 18:14	YES
03	BI-214	DUP	ENGWESA001	pCi/s	-8.00E-01	4.36E+00	6.37E+00					06/24/15 12:15	5.90E-01	08/27/15 18:14	NO
03	K-40	DUP	ENGWESA001	pCi/s	3.98E+01	2.64E+01	4.84E+01				NA	06/24/15 12:15	5.90E-01	08/27/15 18:14	NO
03	PA-231	DUP	ENGWESA001	pCi/s	2.88E+01	5.71E+01	9.39E+01					06/24/15 12:15	5.90E-01	08/27/15 18:14	NO
03	PB-210	DUP	ENGWESA001	pCi/s	4.15E+02	5.41E+01	5.24E+01				NA	06/24/15 12:15	5.90E-01	08/27/15 18:14	YES
03	PB-214	DUP	ENGWESA001	pCi/s	1.04E+00	3.06E+00	5.14E+00					06/24/15 12:15	5.90E-01	08/27/15 18:14	NO
04	AC-228	DO	ENGWESA001	pCi/s	8.55E-01	7.88E+00	1.20E+01					06/24/15 12:15	5.90E-01	08/28/15 06:10	NO
04	BE-7	DO	ENGWESA001	pCi/s	2.26E+03	2.53E+02	7.29E+01					06/24/15 12:15	5.90E-01	08/28/15 06:10	YES
04	BI-214	DO	ENGWESA001	pCi/s	2.11E+00	4.43E+00	6.88E+00					06/24/15 12:15	5.90E-01	08/28/15 06:10	NO
04	K-40	DO	ENGWESA001	pCi/s	3.35E+01	2.61E+01	4.75E+01					06/24/15 12:15	5.90E-01	08/28/15 06:10	NO
04	PA-231	DO	ENGWESA001	pCi/s	3.17E+01	5.65E+01	9.39E+01					06/24/15 12:15	5.90E-01	08/28/15 06:10	NO
04	PB-210	DO	ENGWESA001	pCi/s	3.81E+02	5.10E+01	5.08E+01					06/24/15 12:15	5.90E-01	08/28/15 06:10	YES
04	PB-214	DO	ENGWESA001	pCi/s	5.32E+00	4.91E+00	8.09E+00					06/24/15 12:15	5.90E-01	08/28/15 06:10	YES
05	AC-228	TRG	ENGWESA002	pCi/s	3.33E+00	5.24E+00	8.70E+00					06/24/15 09:40	7.95E-01	08/27/15 18:28	NO
05	BE-7	TRG	ENGWESA002	pCi/s	2.82E+03	3.10E+02	7.22E+01					06/24/15 09:40	7.95E-01	08/27/15 18:28	YES
05	BI-214	TRG	ENGWESA002	pCi/s	3.73E+00	3.59E+00	5.79E+00					06/24/15 09:40	7.95E-01	08/27/15 18:28	NO
05	K-40	TRG	ENGWESA002	pCi/s	4.21E+01	2.19E+01	4.12E+01					06/24/15 09:40	7.95E-01	08/27/15 18:28	NO
05	PA-231	TRG	ENGWESA002	pCi/s	-1.02E+01	5.32E+01	8.12E+01					06/24/15 09:40	7.95E-01	08/27/15 18:28	NO
05	PB-210	TRG	ENGWESA002	pCi/s	4.16E+02	5.07E+01	5.27E+01					06/24/15 09:40	7.95E-01	08/27/15 18:28	YES
05	PB-214	TRG	ENGWESA002	pCi/s	4.83E+00	3.59E+00	5.19E+00					06/24/15 09:40	7.95E-01	08/27/15 18:28	NO
06	AC-228	TRG	ENGWESA003	pCi/s	4.94E+00	5.31E+00	9.21E+00					06/24/15 10:40	7.95E-01	08/27/15 18:29	NO
06	BE-7	TRG	ENGWESA003	pCi/s	2.53E+03	2.64E+02	5.21E+01					06/24/15 10:40	7.95E-01	08/27/15 18:29	YES
06	BI-214	TRG	ENGWESA003	pCi/s	2.36E+00	3.33E+00	5.34E+00					06/24/15 10:40	7.95E-01	08/27/15 18:29	NO
06	K-40	TRG	ENGWESA003	pCi/s	3.25E+01	2.14E+01	4.08E+01					06/24/15 10:40	7.95E-01	08/27/15 18:29	NO
06	PA-231	TRG	ENGWESA003	pCi/s	-2.01E+01	6.57E+01	9.40E+01					06/24/15 10:40	7.95E-01	08/27/15 18:29	NO
06	PB-210	TRG	ENGWESA003	pCi/s	4.34E+02	5.90E+01	6.33E+01					06/24/15 10:40	7.95E-01	08/27/15 18:29	YES
06	PB-214	TRG	ENGWESA003	pCi/s	1.39E+00	3.53E+00	5.32E+00					06/24/15 10:40	7.95E-01	08/27/15 18:29	NO
07	AC-228	TRG	ENGWESA004	pCi/s	7.87E+00	6.16E+00	1.03E+01					06/24/15 11:40	7.95E-01	08/28/15 06:10	NO

Preliminary Data Report & Analytical Calculations

Work Order: 15-08105-Gamma-1

Lab Fraction	Nuclide	Sample Desc	Client Identification	Activity Units	Results	Error Estimate	MDA	LSC Known	LCS %R	LCS Flag	RPD Flag	Sample Date	Sample Aliquot	Counting Date/Time	Identified
07	BE-7	TRG	ENGWESA004	pCi/s	3.01E+03	3.28E+02	9.40E+01					06/24/15 11:40	7.95E-01	08/28/15 06:10	YES
07	BI-214	TRG	ENGWESA004	pCi/s	6.19E+00	3.79E+00	6.22E+00					06/24/15 11:40	7.95E-01	08/28/15 06:10	NO
07	K-40	TRG	ENGWESA004	pCi/s	4.54E+01	2.24E+01	4.22E+01					06/24/15 11:40	7.95E-01	08/28/15 06:10	NO
07	PA-231	TRG	ENGWESA004	pCi/s	-1.45E+01	6.57E+01	8.42E+01					06/24/15 11:40	7.95E-01	08/28/15 06:10	NO
07	PB-210	TRG	ENGWESA004	pCi/s	4.54E+02	5.37E+01	5.40E+01					06/24/15 11:40	7.95E-01	08/28/15 06:10	YES
07	PB-214	TRG	ENGWESA004	pCi/s	3.80E+00	3.82E+00	5.36E+00					06/24/15 11:40	7.95E-01	08/28/15 06:10	NO
08	AC-228	TRG	ENGWESA005	pCi/s	5.38E+00	5.71E+00	9.80E+00					06/23/15 10:30	7.95E-01	08/28/15 06:28	NO
08	BE-7	TRG	ENGWESA005	pCi/s	2.31E+03	2.44E+02	6.88E+01					06/23/15 10:30	7.95E-01	08/28/15 06:28	YES
08	BI-214	TRG	ENGWESA005	pCi/s	3.22E-01	3.42E+00	5.20E+00					06/23/15 10:30	7.95E-01	08/28/15 06:28	NO
08	K-40	TRG	ENGWESA005	pCi/s	3.36E+01	2.21E+01	4.18E+01					06/23/15 10:30	7.95E-01	08/28/15 06:28	NO
08	PA-231	TRG	ENGWESA005	pCi/s	3.58E+01	5.90E+01	8.91E+01					06/23/15 10:30	7.95E-01	08/28/15 06:28	NO
08	PB-210	TRG	ENGWESA005	pCi/s	3.97E+02	5.23E+01	5.26E+01					06/23/15 10:30	7.95E-01	08/28/15 06:28	YES
08	PB-214	TRG	ENGWESA005	pCi/s	1.55E+00	3.36E+00	5.10E+00					06/23/15 10:30	7.95E-01	08/28/15 06:28	NO
09	AC-228	TRG	ENGWESA006	pCi/s	2.89E+00	8.75E+00	1.47E+01					06/24/15 13:00	7.95E-01	08/28/15 06:10	NO
09	BE-7	TRG	ENGWESA006	pCi/s	2.74E+02	1.52E+02	9.93E+01					06/24/15 13:00	7.95E-01	08/28/15 06:10	YES
09	BI-214	TRG	ENGWESA006	pCi/s	5.70E+00	9.38E+00	8.35E+00					06/24/15 13:00	7.95E-01	08/28/15 06:10	NO
09	K-40	TRG	ENGWESA006	pCi/s	-3.03E+00	2.84E+01	4.68E+01					06/24/15 13:00	7.95E-01	08/28/15 06:10	NO
09	PA-231	TRG	ENGWESA006	pCi/s	3.87E+01	6.36E+01	1.02E+02					06/24/15 13:00	7.95E-01	08/28/15 06:10	NO
09	PB-210	TRG	ENGWESA006	pCi/s	4.39E+01	2.72E+01	4.45E+01					06/24/15 13:00	7.95E-01	08/28/15 06:10	YES
09	PB-214	TRG	ENGWESA006	pCi/s	3.70E+00	4.10E+00	6.76E+00					06/24/15 13:00	7.95E-01	08/28/15 06:10	NO
10	AC-228	TRG	ENGWESA007	pCi/s	7.41E+00	6.19E+00	1.02E+01					06/23/15 09:38	7.95E-01	08/28/15 10:11	NO
10	BE-7	TRG	ENGWESA007	pCi/s	2.55E+03	2.69E+02	6.46E+01					06/23/15 09:38	7.95E-01	08/28/15 10:11	YES
10	BI-214	TRG	ENGWESA007	pCi/s	1.53E+00	2.94E+00	4.63E+00					06/23/15 09:38	7.95E-01	08/28/15 10:11	NO
10	K-40	TRG	ENGWESA007	pCi/s	2.28E+01	2.03E+01	3.63E+01					06/23/15 09:38	7.95E-01	08/28/15 10:11	NO
10	PA-231	TRG	ENGWESA007	pCi/s	-1.79E+01	4.47E+01	7.06E+01					06/23/15 09:38	7.95E-01	08/28/15 10:11	NO
10	PB-210	TRG	ENGWESA007	pCi/s	4.34E+02	5.05E+01	4.02E+01					06/23/15 09:38	7.95E-01	08/28/15 10:11	YES
10	PB-214	TRG	ENGWESA007	pCi/s	1.58E+00	2.55E+00	4.29E+00					06/23/15 09:38	7.95E-01	08/28/15 10:11	NO
11	AC-228	TRG	ENGWESA008	pCi/s	1.86E+00	6.25E+00	9.74E+00					06/23/15 11:25	7.95E-01	08/28/15 10:11	NO
11	BE-7	TRG	ENGWESA008	pCi/s	2.61E+03	2.87E+02	5.96E+01					06/23/15 11:25	7.95E-01	08/28/15 10:11	YES
11	BI-214	TRG	ENGWESA008	pCi/s	9.43E+00	3.92E+00	6.62E+00					06/23/15 11:25	7.95E-01	08/28/15 10:11	NO
11	K-40	TRG	ENGWESA008	pCi/s	3.16E+01	2.35E+01	4.15E+01					06/23/15 11:25	7.95E-01	08/28/15 10:11	NO
11	PA-231	TRG	ENGWESA008	pCi/s	-3.84E+01	6.55E+01	8.10E+01					06/23/15 11:25	7.95E-01	08/28/15 10:11	NO
11	PB-210	TRG	ENGWESA008	pCi/s	3.88E+02	5.22E+01	6.11E+01					06/23/15 11:25	7.95E-01	08/28/15 10:11	YES
11	PB-214	TRG	ENGWESA008	pCi/s	2.47E+00	3.67E+00	5.08E+00					06/23/15 11:25	7.95E-01	08/28/15 10:11	NO
12	AC-228	TRG	ENGWESA009	pCi/s	-2.69E-01	6.59E+00	1.01E+01					06/23/15 13:26	7.95E-01	08/28/15 10:30	NO
12	BE-7	TRG	ENGWESA009	pCi/s	1.75E+03	1.90E+02	6.80E+01					06/23/15 13:26	7.95E-01	08/28/15 10:30	YES
12	BI-214	TRG	ENGWESA009	pCi/s	2.22E+00	3.28E+00	5.27E+00					06/23/15 13:26	7.95E-01	08/28/15 10:30	NO
12	K-40	TRG	ENGWESA009	pCi/s	2.18E+01	2.31E+01	3.98E+01					06/23/15 13:26	7.95E-01	08/28/15 10:30	NO

Preliminary Data Report & Analytical Calculations

Work Order: 15-08105-Gamma-1

Lab Fraction	Nuclide	Sample Desc	Client Identification	Activity Units	Results	Error Estimate	MDA	LSC Known	LCS %R	LCS Flag	RPD Flag	Sample Date	Sample Aliquot	Counting Date/Time	Identified
12	PA-231	TRG	ENGWESA009	pCi/s	1.98E+01	5.54E+01	8.32E+01					06/23/15 13:26	7.95E-01	08/28/15 10:30	NO
12	PB-210	TRG	ENGWESA009	pCi/s	3.03E+02	4.75E+01	5.77E+01					06/23/15 13:26	7.95E-01	08/28/15 10:30	YES
12	PB-214	TRG	ENGWESA009	pCi/s	1.47E+00	3.30E+00	4.97E+00					06/23/15 13:26	7.95E-01	08/28/15 10:30	NO
13	AC-228	TRG	ENGWESA010	pCi/s	1.87E+00	5.91E+00	9.25E+00					06/23/15 14:10	7.95E-01	08/28/15 14:12	NO
13	BE-7	TRG	ENGWESA010	pCi/s	2.28E+03	2.43E+02	6.94E+01					06/23/15 14:10	7.95E-01	08/28/15 14:12	YES
13	BI-214	TRG	ENGWESA010	pCi/s	-8.19E-01	3.46E+00	5.08E+00					06/23/15 14:10	7.95E-01	08/28/15 14:12	NO
13	K-40	TRG	ENGWESA010	pCi/s	2.09E+01	1.81E+01	3.27E+01					06/23/15 14:10	7.95E-01	08/28/15 14:12	NO
13	PA-231	TRG	ENGWESA010	pCi/s	3.54E+01	4.48E+01	7.44E+01					06/23/15 14:10	7.95E-01	08/28/15 14:12	NO
13	PB-210	TRG	ENGWESA010	pCi/s	3.96E+02	4.84E+01	4.34E+01					06/23/15 14:10	7.95E-01	08/28/15 14:12	YES
13	PB-214	TRG	ENGWESA010	pCi/s	2.69E+00	2.39E+00	4.16E+00					06/23/15 14:10	7.95E-01	08/28/15 14:12	NO
14	AC-228	TRG	ENGWESA011	pCi/s	5.90E+00	6.22E+00	1.03E+01					06/23/15 08:59	7.95E-01	08/28/15 14:12	NO
14	BE-7	TRG	ENGWESA011	pCi/s	2.51E+03	2.79E+02	7.37E+01					06/23/15 08:59	7.95E-01	08/28/15 14:12	YES
14	BI-214	TRG	ENGWESA011	pCi/s	2.50E+00	3.78E+00	5.92E+00					06/23/15 08:59	7.95E-01	08/28/15 14:12	NO
14	K-40	TRG	ENGWESA011	pCi/s	5.79E+01	2.35E+01	4.45E+01					06/23/15 08:59	7.95E-01	08/28/15 14:12	NO
14	PA-231	TRG	ENGWESA011	pCi/s	5.37E+01	6.19E+01	8.54E+01					06/23/15 08:59	7.95E-01	08/28/15 14:12	NO
14	PB-210	TRG	ENGWESA011	pCi/s	4.59E+02	5.80E+01	6.46E+01					06/23/15 08:59	7.95E-01	08/28/15 14:12	YES
14	PB-214	TRG	ENGWESA011	pCi/s	3.00E+00	3.65E+00	5.08E+00					06/23/15 08:59	7.95E-01	08/28/15 14:12	NO
15	AC-228	TRG	ENGWESA012	pCi/s	3.98E+00	7.07E+00	1.15E+01					06/23/15 14:50	5.90E-01	08/28/15 18:13	NO
15	BE-7	TRG	ENGWESA012	pCi/s	2.90E+03	3.07E+02	7.71E+01					06/23/15 14:50	5.90E-01	08/28/15 18:13	YES
15	BI-214	TRG	ENGWESA012	pCi/s	2.25E+00	4.05E+00	6.37E+00					06/23/15 14:50	5.90E-01	08/28/15 18:13	NO
15	K-40	TRG	ENGWESA012	pCi/s	4.84E+01	2.75E+01	5.16E+01					06/23/15 14:50	5.90E-01	08/28/15 18:13	NO
15	PA-231	TRG	ENGWESA012	pCi/s	3.06E+01	5.89E+01	9.78E+01					06/23/15 14:50	5.90E-01	08/28/15 18:13	NO
15	PB-210	TRG	ENGWESA012	pCi/s	5.39E+02	6.41E+01	5.35E+01					06/23/15 14:50	5.90E-01	08/28/15 18:13	YES
15	PB-214	TRG	ENGWESA012	pCi/s	3.89E+00	3.39E+00	5.84E+00					06/23/15 14:50	5.90E-01	08/28/15 18:13	NO
16	AC-228	TRG	ENGWESA013	pCi/s	5.84E+00	5.86E+00	9.67E+00					06/23/15 15:30	7.95E-01	08/28/15 18:13	NO
16	BE-7	TRG	ENGWESA013	pCi/s	2.78E+03	3.06E+02	7.09E+01					06/23/15 15:30	7.95E-01	08/28/15 18:13	YES
16	BI-214	TRG	ENGWESA013	pCi/s	1.65E+00	3.56E+00	5.53E+00					06/23/15 15:30	7.95E-01	08/28/15 18:13	NO
16	K-40	TRG	ENGWESA013	pCi/s	4.61E+01	1.89E+01	3.83E+01					06/23/15 15:30	7.95E-01	08/28/15 18:13	NO
16	PA-231	TRG	ENGWESA013	pCi/s	-3.37E+01	6.57E+01	8.12E+01					06/23/15 15:30	7.95E-01	08/28/15 18:13	NO
16	PB-210	TRG	ENGWESA013	pCi/s	4.37E+02	5.48E+01	6.00E+01					06/23/15 15:30	7.95E-01	08/28/15 18:13	YES
16	PB-214	TRG	ENGWESA013	pCi/s	5.16E+00	3.63E+00	5.26E+00					06/23/15 15:30	7.95E-01	08/28/15 18:13	NO

Count Room Report
Client: Auxier Associates, Inc.

15-08105-Gamma-1 (pCi/s) in AF
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	08/26/15 00:00	1.0000				0.00		
02	MBL	BLANK	08/26/15 00:00	1.0000				0.00		
03	DUP	ENGWESA001	06/24/15 12:15	0.5900				0.00		
04	DO	ENGWESA001	06/24/15 12:15	0.5900				0.00		
05	TRG	ENGWESA002	06/24/15 09:40	0.7950				0.00		
06	TRG	ENGWESA003	06/24/15 10:40	0.7950				0.00		
07	TRG	ENGWESA004	06/24/15 11:40	0.7950				0.00		
08	TRG	ENGWESA005	06/23/15 10:30	0.7950				0.00		
09	TRG	ENGWESA006	06/24/15 13:00	0.7950				0.00		
10	TRG	ENGWESA007	06/23/15 09:38	0.7950				0.00		
11	TRG	ENGWESA008	06/23/15 11:25	0.7950				0.00		
12	TRG	ENGWESA009	06/23/15 13:26	0.7950				0.00		
13	TRG	ENGWESA010	06/23/15 14:10	0.7950				0.00		
14	TRG	ENGWESA011	06/23/15 08:59	0.7950				0.00		
15	TRG	ENGWESA012	06/23/15 14:50	0.5900				0.00		
16	TRG	ENGWESA013	06/23/15 15:30	0.7950				0.00		

GEI

Eberline Analytical
Oak Ridge Laboratory

Aliquot Worksheet

Work Order	Run	Analysis Code	Rpt Units	Lab Deadline	Technician
15-08105	1	Gamma	s	9/15/2015	KSALLINGS

Lab Fraction	Auxier & Associates, Inc. Client ID	Sample Type	Muffle Data Ratio Post/Pre	Dilution Data No of Dils	Dil Factor	Ratio	Aliquot Data Aliquot	Net Equiv	MS Aliquot Data Aliquot	Net Equiv	H-3 Solids Only Water Added (ml)	H3 Dist Aliq
01	LCS	LCS				1.00E+00	1.0000E+00	1.0000E+00				
02	BLANK	MBL				1.00E+00	1.0000E+00	1.0000E+00				
03	ENGWESA001	DUP				1.00E+00	5.9000E-01	5.9000E-01				
04	ENGWESA001	DO				1.00E+00	5.9000E-01	5.9000E-01				
05	ENGWESA002	TRG				1.00E+00	7.9500E-01	7.9500E-01				
06	ENGWESA003	TRG				1.00E+00	7.9500E-01	7.9500E-01				
07	ENGWESA004	TRG				1.00E+00	7.9500E-01	7.9500E-01				
08	ENGWESA005	TRG				1.00E+00	7.9500E-01	7.9500E-01				
09	ENGWESA006	TRG				1.00E+00	7.9500E-01	7.9500E-01				
10	ENGWESA007	TRG				1.00E+00	7.9500E-01	7.9500E-01				
11	ENGWESA008	TRG				1.00E+00	7.9500E-01	7.9500E-01				
12	ENGWESA009	TRG				1.00E+00	7.9500E-01	7.9500E-01				
13	ENGWESA010	TRG				1.00E+00	7.9500E-01	7.9500E-01				
14	ENGWESA011	TRG				1.00E+00	7.9500E-01	7.9500E-01				
15	ENGWESA012	TRG				1.00E+00	5.9000E-01	5.9000E-01				
16	ENGWESA013	TRG				1.00E+00	7.9500E-01	7.9500E-01				

Comments	

Technician: Kenny Sallings Date: 8/27/15

Eckert & Ziegler
Analytics

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Atlanta, Georgia 30318
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Fax 404•352•2837
www.analyticsinc.com

CERTIFICATE OF CALIBRATION

Standard Radionuclide Source

GAF-13

94270

LPGAF-13

47 mm Diameter Simulated Filter in Falcon Petri

Customer: Eberline Analytical Corporation
P.O. No.: 1304009, Item 9 Product Code: 8401-GF-FP
Reference Date: 01-Jul-2013 12:00 PM EST **Grams of Master Source:** 0.0017526

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	———	2.040E+02	0.1	1.7	3.5	4π LS
Cd-109	88.0	4.626E+02	1.641E+05	2.875E+02	0.5	2.3	4.7	HPGe
Co-57	122.1	2.718E+02	8.865E+04	1.554E+02	0.4	2.0	4.1	HPGe
Ce-139	165.9	1.376E+02	1.243E+05	2.178E+02	0.4	1.9	3.9	HPGe
Hg-203	279.2	4.661E+01	2.627E+05	4.604E+02	0.3	1.9	3.8	HPGe
Sn-113	391.7	1.151E+02	1.736E+05	3.043E+02	0.4	1.9	3.9	HPGe
Cs-137	661.7	1.098E+04	1.120E+05	1.963E+02	0.7	1.9	4.0	HPGe
Y-88	898.0	1.066E+02	4.197E+05	7.356E+02	0.5	1.9	3.9	HPGe
Co-60	1173.2	1.925E+03	2.074E+05	3.635E+02	0.6	1.9	4.0	HPGe
Co-60	1332.5	1.925E+03	2.074E+05	3.635E+02	0.7	1.9	4.0	HPGe
Y-88	1836.1	1.066E+02	4.444E+05	7.788E+02	0.7	1.9	4.0	HPGe

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

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

(Certificate continued on reverse side)

Corporate Office
24937 Avenue Tibbitts Valencia, California 91355

Laboratory
1380 Seaboard Industrial Blvd. Atlanta, Georgia, 30318

KB 8/27/15

Apex-Gamma

Analysis Report for 1508105-01
GAF-13

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 1508105-01
Sample Description	: GAF-13
Sample Type	: FILTER
Sample Size	: 1.000E+00 sample
Facility	: Countroom
Sample Taken On	: 7/1/2013 9:07:33AM
Acquisition Started	: 8/27/2015 5:57:57PM
Procedure	: GAF-14 pCi
Operator	: Administrator
Detector Name	: GE1
Geometry	: GAF-14
Live Time	: 900.0 seconds
Real Time	: 915.8 seconds
Dead Time	: 1.72 %
Peak Locate Threshold	: 2.50
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 17 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 10/25/2014
Efficiency Calibration Used Done On	: 10/25/2014
Efficiency Calibration Description	:
Sample Number	: 26550

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG 8/31/15

Analysis Report for 1508105-01

GAF-13

PEAK LOCATE REPORT

Peak Locate Performed on : 8/27/2015 6:13:17PM
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	32.34	32.70	0.0000	0.00
2	43.45	43.80	0.0000	0.00
3	50.06	50.41	0.0000	0.00
4	59.71	60.05	0.0000	0.00
5	73.10	73.44	0.0000	0.00
6	77.34	77.68	0.0000	0.00
7	88.19	88.53	0.0000	0.00
8	91.39	91.73	0.0000	0.00
9	103.08	103.41	0.0000	0.00
10	122.23	122.56	0.0000	0.00
11	136.67	137.00	0.0000	0.00
12	166.08	166.39	0.0000	0.00
13	178.17	178.48	0.0000	0.00
14	199.45	199.75	0.0000	0.00
15	248.11	248.39	0.0000	0.00
16	388.93	389.17	0.0000	0.00
17	391.89	392.13	0.0000	0.00
18	541.88	542.07	0.0000	0.00
19	643.55	643.70	0.0000	0.00
20	661.67	661.81	0.0000	0.00
21	872.47	872.54	0.0000	0.00
22	898.26	898.32	0.0000	0.00
23	961.67	961.70	0.0000	0.00
24	1042.98	1042.99	0.0000	0.00
25	1050.48	1050.48	0.0000	0.00
26	1173.21	1173.17	0.0000	0.00
27	1226.63	1226.57	0.0000	0.00
28	1317.90	1317.81	0.0000	0.00
29	1332.45	1332.36	0.0000	0.00
30	1523.21	1523.04	0.0000	0.00
31	1612.56	1612.36	0.0000	0.00
32	1835.97	1835.68	0.0000	0.00
33	1927.67	1927.35	0.0000	0.00
34	1934.56	1934.24	0.0000	0.00
35	1964.43	1964.10	0.0000	0.00
36	1976.28	1975.94	0.0000	0.00
37	2089.60	2089.23	0.0000	0.00
38	2505.15	2504.61	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1508105-01

GAF-13

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 8/27/2015 6:13:17PM

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	32.34	31 -	35	32.70	2.96E+03	221.17	8.17E+03	2.05
	2	43.45	42 -	46	43.80	6.27E+02	149.89	4.34E+03	1.59
	3	50.06	48 -	53	50.41	8.40E+02	170.96	5.21E+03	1.61
	4	59.71	56 -	63	60.05	5.06E+04	506.76	9.09E+03	1.25
	5	73.10	71 -	75	73.44	1.78E+02	110.59	2.56E+03	1.24
	6	77.34	76 -	80	77.68	2.00E+02	113.90	2.72E+03	1.88
M	7	88.19	84 -	96	88.53	2.22E+04	303.51	1.45E+03	1.43
m	8	91.39	84 -	96	91.73	4.99E+02	317.82	1.98E+03	2.18
	9	103.08	102 -	107	103.41	7.17E+01	86.02	1.43E+03	1.52
	10	122.23	118 -	128	122.56	4.66E+03	189.58	2.32E+03	1.91
	11	136.67	133 -	140	137.00	6.35E+02	107.20	1.49E+03	1.34
	12	166.08	163 -	170	166.39	6.59E+02	104.90	1.39E+03	1.72
	13	178.17	175 -	182	178.48	1.16E+02	91.96	1.33E+03	4.29
	14	199.45	197 -	202	199.75	7.01E+01	79.57	1.21E+03	1.78
	15	248.11	246 -	252	248.39	7.68E+01	83.75	1.23E+03	3.21
M	16	388.93	388 -	396	389.17	5.99E+01	20.64	1.60E+02	1.82
m	17	391.89	388 -	396	392.13	2.51E+02	71.37	8.85E+02	1.82
	18	541.88	539 -	545	542.07	7.34E+01	66.31	7.41E+02	2.59
	19	643.55	641 -	646	643.70	4.70E+01	51.71	4.96E+02	1.31
	20	661.67	657 -	666	661.81	1.01E+04	226.83	1.58E+03	1.74
	21	872.47	871 -	875	872.54	4.55E+01	54.82	6.27E+02	1.44
	22	898.26	895 -	901	898.32	1.16E+02	79.12	1.04E+03	2.18
	23	961.67	958 -	965	961.70	8.66E+01	89.24	1.26E+03	4.59
	24	1042.98	1040 -	1046	1042.99	6.37E+01	63.67	6.87E+02	2.84
	25	1050.48	1048 -	1053	1050.48	6.60E+01	55.12	5.50E+02	2.74
	26	1173.21	1167 -	1178	1173.17	7.55E+03	194.60	9.56E+02	1.98
	27	1226.63	1223 -	1230	1226.57	2.58E+01	32.25	1.56E+02	1.79
	28	1317.90	1315 -	1320	1317.81	2.29E+01	23.00	8.83E+01	2.45
	29	1332.45	1326 -	1337	1332.36	6.66E+03	175.02	4.91E+02	2.18
	30	1523.21	1519 -	1525	1523.04	1.66E+01	21.00	6.48E+01	2.09
	31	1612.56	1609 -	1616	1612.36	3.07E+01	23.41	6.87E+01	3.78
	32	1835.97	1832 -	1840	1835.68	4.52E+01	31.73	1.30E+02	1.57
	33	1927.67	1923 -	1932	1927.35	1.81E+01	21.24	5.17E+01	2.83
	34	1934.56	1932 -	1937	1934.24	9.81E+00	13.30	2.84E+01	1.32
	35	1964.43	1956 -	1973	1964.10	4.22E+01	35.26	9.16E+01	17.10
	36	1976.28	1974 -	1978	1975.94	9.93E+00	12.01	2.41E+01	2.17
	37	2089.60	2087 -	2091	2089.23	1.30E+01	9.10	6.00E+00	2.34
	38	2505.15	2498 -	2511	2504.61	3.32E+02	37.32	7.37E+00	2.76

Analysis Report for 1508105-01

GAF-13

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

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 8/27/2015 6:13:17PM

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	32.34	31 -	35	2.96E+03	221.17	8.17E+03	1.58E+02
	2	43.45	42 -	46	6.27E+02	149.89	4.34E+03	1.16E+02
	3	50.06	48 -	53	8.40E+02	170.96	5.21E+03	1.32E+02
	4	59.71	56 -	63	5.06E+04	506.76	9.09E+03	1.92E+02
	5	73.10	71 -	75	1.78E+02	110.59	2.56E+03	8.82E+01
	6	77.34	76 -	80	2.00E+02	113.90	2.72E+03	9.07E+01
M	7	88.19	84 -	96	2.22E+04	303.51	1.45E+03	6.27E+01
m	8	91.39	84 -	96	4.99E+02	317.82	1.98E+03	7.31E+01
	9	103.08	102 -	107	7.17E+01	86.02	1.43E+03	6.93E+01
	10	122.23	118 -	128	4.66E+03	189.58	2.32E+03	1.08E+02
	11	136.67	133 -	140	6.35E+02	107.20	1.49E+03	7.78E+01
	12	166.08	163 -	170	6.59E+02	104.90	1.39E+03	7.52E+01
	13	178.17	175 -	182	1.16E+02	91.96	1.33E+03	7.35E+01
	14	199.45	197 -	202	7.01E+01	79.57	1.21E+03	6.39E+01
	15	248.11	246 -	252	7.68E+01	83.75	1.23E+03	6.73E+01
M	16	388.93	388 -	396	5.99E+01	20.64	1.60E+02	2.08E+01
m	17	391.89	388 -	396	2.51E+02	71.37	8.85E+02	4.89E+01
	18	541.88	539 -	545	7.34E+01	66.31	7.41E+02	5.27E+01
	19	643.55	641 -	646	4.70E+01	51.71	4.96E+02	4.10E+01
	20	661.67	657 -	666	1.01E+04	226.83	1.58E+03	8.61E+01
	21	872.47	871 -	875	4.55E+01	54.82	6.27E+02	4.37E+01
	22	898.26	895 -	901	1.16E+02	79.12	1.04E+03	6.26E+01
	23	961.67	958 -	965	8.66E+01	89.24	1.26E+03	7.17E+01
	24	1042.98	1040 -	1046	6.37E+01	63.67	6.87E+02	5.07E+01
	25	1050.48	1048 -	1053	6.60E+01	55.12	5.50E+02	4.33E+01
	26	1173.21	1167 -	1178	7.55E+03	194.60	9.56E+02	7.20E+01
	27	1226.63	1223 -	1230	2.58E+01	32.25	1.56E+02	2.52E+01
	28	1317.90	1315 -	1320	2.29E+01	23.00	8.83E+01	1.72E+01
	29	1332.45	1326 -	1337	6.66E+03	175.02	4.91E+02	5.20E+01
	30	1523.21	1519 -	1525	1.66E+01	21.00	6.48E+01	1.59E+01
	31	1612.56	1609 -	1616	3.07E+01	23.41	6.87E+01	1.70E+01

Analysis Report for 1508105-01

GAF-13

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
32	1835.97	1832 -	1840	4.52E+01	31.73	1.30E+02	2.36E+01
33	1927.67	1923 -	1932	1.81E+01	21.24	5.17E+01	1.60E+01
34	1934.56	1932 -	1937	9.81E+00	13.30	2.84E+01	9.65E+00
35	1964.43	1956 -	1973	4.22E+01	35.26	9.16E+01	2.69E+01
36	1976.28	1974 -	1978	9.93E+00	12.01	2.41E+01	8.40E+00
37	2089.60	2087 -	2091	1.30E+01	9.10	6.00E+00	4.56E+00
38	2505.15	2498 -	2511	3.32E+02	37.32	7.37E+00	6.56E+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 : 8/27/2015 6:13:17PM

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	32.34	31 -	35	32.70	2.96E+03	221.17	8.17E+03	.....
	2	43.45	42 -	46	43.80	6.27E+02	149.89	4.34E+03	.....
	3	50.06	48 -	53	50.41	8.40E+02	170.96	5.21E+03	TH-227
									TE-132
	4	59.71	56 -	63	60.05	5.06E+04	506.76	9.09E+03	AM-241
	5	73.10	71 -	75	73.44	1.78E+02	110.59	2.56E+03	PM-145
	6	77.34	76 -	80	77.68	2.00E+02	113.90	2.72E+03	.....
M	7	88.19	84 -	96	88.53	2.22E+04	303.51	1.45E+03	LU-176
									CD-109
									SN-126
m	8	91.39	84 -	96	91.73	4.99E+02	317.82	1.98E+03	ND-147
	9	103.08	102 -	107	103.41	7.17E+01	86.02	1.43E+03	GD-153
	10	122.23	118 -	128	122.56	4.66E+03	189.58	2.32E+03	CO-57
									EU-152
									EU-154
	11	136.67	133 -	140	137.00	6.35E+02	107.20	1.49E+03	CO-57
									SE-75
	12	166.08	163 -	170	166.39	6.59E+02	104.90	1.39E+03	CE-139
	13	178.17	175 -	182	178.48	1.16E+02	91.96	1.33E+03	.....

Analysis Report for 1508105-01

GAF-13

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	14	199.45	197 -	202	199.75	7.01E+01	79.57	1.21E+03	.....
	15	248.11	246 -	252	248.39	7.68E+01	83.75	1.23E+03	.....
M	16	388.93	388 -	396	389.17	5.99E+01	20.64	1.60E+02	.....
m	17	391.89	388 -	396	392.13	2.51E+02	71.37	8.85E+02	SN-113
	18	541.88	539 -	545	542.07	7.34E+01	66.31	7.41E+02	.....
	19	643.55	641 -	646	643.70	4.70E+01	51.71	4.96E+02	.....
	20	661.67	657 -	666	661.81	1.01E+04	226.83	1.58E+03	CS-137
	21	872.47	871 -	875	872.54	4.55E+01	54.82	6.27E+02	EU-154
	22	898.26	895 -	901	898.32	1.16E+02	79.12	1.04E+03	Y-88
	23	961.67	958 -	965	961.70	8.66E+01	89.24	1.26E+03	.....
	24	1042.98	1040 -	1046	1042.99	6.37E+01	63.67	6.87E+02	.....
	25	1050.48	1048 -	1053	1050.48	6.60E+01	55.12	5.50E+02	.....
	26	1173.21	1167 -	1178	1173.17	7.55E+03	194.60	9.56E+02	CO-60
	27	1226.63	1223 -	1230	1226.57	2.58E+01	32.25	1.56E+02	.....
	28	1317.90	1315 -	1320	1317.81	2.29E+01	23.00	8.83E+01	.....
	29	1332.45	1326 -	1337	1332.36	6.66E+03	175.02	4.91E+02	CO-60
	30	1523.21	1519 -	1525	1523.04	1.66E+01	21.00	6.48E+01	.....
	31	1612.56	1609 -	1616	1612.36	3.07E+01	23.41	6.87E+01	.....
	32	1835.97	1832 -	1840	1835.68	4.52E+01	31.73	1.30E+02	Y-88
	33	1927.67	1923 -	1932	1927.35	1.81E+01	21.24	5.17E+01	.....
	34	1934.56	1932 -	1937	1934.24	9.81E+00	13.30	2.84E+01	.....
	35	1964.43	1956 -	1973	1964.10	4.22E+01	35.26	9.16E+01	.....
	36	1976.28	1974 -	1978	1975.94	9.93E+00	12.01	2.41E+01	.....
	37	2089.60	2087 -	2091	2089.23	1.30E+01	9.10	6.00E+00	.....
	38	2505.15	2498 -	2511	2504.61	3.32E+02	37.32	7.37E+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 : 8/27/2015 6:13:17PM

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
1	32.34	2.96E+03	221.17	8.56E-02	2.02E-02
2	43.45	6.27E+02	149.89	1.94E-01	2.02E-02
3	50.06	8.40E+02	170.96	2.36E-01	2.02E-02
4	59.71	5.06E+04	506.76	2.67E-01	2.03E-02
5	73.10	1.78E+02	110.59	2.73E-01	2.36E-02

Analysis Report for 1508105-01

GAF-13

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	6	77.34	2.00E+02	113.90	2.70E-01	2.47E-02
M	7	88.19	2.22E+04	303.51	2.58E-01	2.74E-02
m	8	91.39	4.99E+02	317.82	2.54E-01	2.73E-02
	9	103.08	7.17E+01	86.02	2.39E-01	2.68E-02
	10	122.23	4.66E+03	189.58	2.15E-01	2.61E-02
	11	136.67	6.35E+02	107.20	1.99E-01	3.09E-02
	12	166.08	6.59E+02	104.90	1.74E-01	4.07E-02
	13	178.17	1.16E+02	91.96	1.65E-01	3.90E-02
	14	199.45	7.01E+01	79.57	1.53E-01	3.58E-02
	15	248.11	7.68E+01	83.75	1.31E-01	2.87E-02
M	16	388.93	5.99E+01	20.64	9.26E-02	7.95E-03
m	17	391.89	2.51E+02	71.37	9.20E-02	7.55E-03
	18	541.88	7.34E+01	66.31	6.82E-02	8.06E-03
	19	643.55	4.70E+01	51.71	5.68E-02	8.41E-03
	20	661.67	1.01E+04	226.83	5.51E-02	8.48E-03
	21	872.47	4.55E+01	54.82	3.96E-02	1.12E-02
	22	898.26	1.16E+02	79.12	3.82E-02	1.16E-02
	23	961.67	8.66E+01	89.24	3.51E-02	9.87E-03
	24	1042.98	6.37E+01	63.67	3.17E-02	7.69E-03
	25	1050.48	6.60E+01	55.12	3.14E-02	7.48E-03
	26	1173.21	7.55E+03	194.60	2.75E-02	4.18E-03
	27	1226.63	2.58E+01	32.25	2.60E-02	4.28E-03
	28	1317.90	2.29E+01	23.00	2.40E-02	4.45E-03
	29	1332.45	6.66E+03	175.02	2.37E-02	4.48E-03
	30	1523.21	1.66E+01	21.00	2.07E-02	3.43E-03
	31	1612.56	3.07E+01	23.41	1.97E-02	2.94E-03
	32	1835.97	4.52E+01	31.73	1.81E-02	1.72E-03
	33	1927.67	1.81E+01	21.24	1.77E-02	1.72E-03
	34	1934.56	9.81E+00	13.30	1.77E-02	1.72E-03
	35	1964.43	4.22E+01	35.26	1.76E-02	1.72E-03
	36	1976.28	9.93E+00	12.01	1.76E-02	1.72E-03
	37	2089.60	1.30E+01	9.10	1.74E-02	1.72E-03
	38	2505.15	3.32E+02	37.32	1.85E-02	1.72E-03

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 : 8/27/2015 6:13:17PM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000025966.CNF

Analysis Report for 1508105-01

GAF-13

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	1	32.34	2.96E+03	221.17			2.96E+03	2.21E+02
	2	43.45	6.27E+02	149.89			6.27E+02	1.50E+02
	3	50.06	8.40E+02	170.96			8.40E+02	1.71E+02
	4	59.71	5.06E+04	506.76	2.32E+00	9.24E-01	5.06E+04	5.07E+02
	5	73.10	1.78E+02	110.59			1.78E+02	1.11E+02
	6	77.34	2.00E+02	113.90	3.99E+00	2.21E+00	1.96E+02	1.14E+02
M	7	88.19	2.22E+04	303.51			2.22E+04	3.04E+02
m	8	91.39	4.99E+02	317.82			4.99E+02	3.18E+02
	9	103.08	7.17E+01	86.02			7.17E+01	8.60E+01
	10	122.23	4.66E+03	189.58			4.66E+03	1.90E+02
	11	136.67	6.35E+02	107.20			6.35E+02	1.07E+02
	12	166.08	6.59E+02	104.90			6.59E+02	1.05E+02
	13	178.17	1.16E+02	91.96			1.16E+02	9.20E+01
	14	199.45	7.01E+01	79.57			7.01E+01	7.96E+01
	15	248.11	7.68E+01	83.75			7.68E+01	8.38E+01
M	16	388.93	5.99E+01	20.64			5.99E+01	2.06E+01
m	17	391.89	2.51E+02	71.37			2.51E+02	7.14E+01
	18	541.88	7.34E+01	66.31			7.34E+01	6.63E+01
	19	643.55	4.70E+01	51.71			4.70E+01	5.17E+01
	20	661.67	1.01E+04	226.83			1.01E+04	2.27E+02
	21	872.47	4.55E+01	54.82			4.55E+01	5.48E+01
	22	898.26	1.16E+02	79.12	3.23E-01	7.63E-01	1.16E+02	7.91E+01
	23	961.67	8.66E+01	89.24			8.66E+01	8.92E+01
	24	1042.98	6.37E+01	63.67			6.37E+01	6.37E+01
	25	1050.48	6.60E+01	55.12			6.60E+01	5.51E+01
	26	1173.21	7.55E+03	194.60	4.17E-02	6.49E-01	7.55E+03	1.95E+02
	27	1226.63	2.58E+01	32.25			2.58E+01	3.22E+01
	28	1317.90	2.29E+01	23.00			2.29E+01	2.30E+01
	29	1332.45	6.66E+03	175.02	3.53E-01	4.67E-01	6.66E+03	1.75E+02
	30	1523.21	1.66E+01	21.00			1.66E+01	2.10E+01
	31	1612.56	3.07E+01	23.41			3.07E+01	2.34E+01
	32	1835.97	4.52E+01	31.73			4.52E+01	3.17E+01
	33	1927.67	1.81E+01	21.24			1.81E+01	2.12E+01
	34	1934.56	9.81E+00	13.30			9.81E+00	1.33E+01
	35	1964.43	4.22E+01	35.26			4.22E+01	3.53E+01
	36	1976.28	9.93E+00	12.01			9.93E+00	1.20E+01
	37	2089.60	1.30E+01	9.10			1.30E+01	9.10E+00
	38	2505.15	3.32E+02	37.32			3.32E+02	3.73E+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 1508105-01

GAF-13

AREA CORRECTION REPORT
REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 8/27/2015 6:13:17PM

Ref. Peak Energy : 0.00 Reference Date :
Peak Ratio : 0.00 Uncertainty : 0.00
Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000025966.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	32.34	2.96E+03	221.17			2.96E+03	2.21E+02
	2	43.45	6.27E+02	149.89			6.27E+02	1.50E+02
	3	50.06	8.40E+02	170.96			8.40E+02	1.71E+02
	4	59.71	5.06E+04	506.76	2.32E+00	9.24E-01	5.06E+04	5.07E+02
	5	73.10	1.78E+02	110.59			1.78E+02	1.11E+02
	6	77.34	2.00E+02	113.90	3.99E+00	2.21E+00	1.96E+02	1.14E+02
M	7	88.19	2.22E+04	303.51			2.22E+04	3.04E+02
m	8	91.39	4.99E+02	317.82			4.99E+02	3.18E+02
	9	103.08	7.17E+01	86.02			7.17E+01	8.60E+01
	10	122.23	4.66E+03	189.58			4.66E+03	1.90E+02
	11	136.67	6.35E+02	107.20			6.35E+02	1.07E+02
	12	166.08	6.59E+02	104.90			6.59E+02	1.05E+02
	13	178.17	1.16E+02	91.96			1.16E+02	9.20E+01
	14	199.45	7.01E+01	79.57			7.01E+01	7.96E+01
	15	248.11	7.68E+01	83.75			7.68E+01	8.38E+01
M	16	388.93	5.99E+01	20.64			5.99E+01	2.06E+01
m	17	391.89	2.51E+02	71.37			2.51E+02	7.14E+01
	18	541.88	7.34E+01	66.31			7.34E+01	6.63E+01
	19	643.55	4.70E+01	51.71			4.70E+01	5.17E+01
	20	661.67	1.01E+04	226.83			1.01E+04	2.27E+02
	21	872.47	4.55E+01	54.82			4.55E+01	5.48E+01
	22	898.26	1.16E+02	79.12	3.23E-01	7.63E-01	1.16E+02	7.91E+01
	23	961.67	8.66E+01	89.24			8.66E+01	8.92E+01
	24	1042.98	6.37E+01	63.67			6.37E+01	6.37E+01
	25	1050.48	6.60E+01	55.12			6.60E+01	5.51E+01
	26	1173.21	7.55E+03	194.60	4.17E-02	6.49E-01	7.55E+03	1.95E+02
	27	1226.63	2.58E+01	32.25			2.58E+01	3.22E+01
	28	1317.90	2.29E+01	23.00			2.29E+01	2.30E+01
	29	1332.45	6.66E+03	175.02	3.53E-01	4.67E-01	6.66E+03	1.75E+02
	30	1523.21	1.66E+01	21.00			1.66E+01	2.10E+01
	31	1612.56	3.07E+01	23.41			3.07E+01	2.34E+01
	32	1835.97	4.52E+01	31.73			4.52E+01	3.17E+01
	33	1927.67	1.81E+01	21.24			1.81E+01	2.12E+01
	34	1934.56	9.81E+00	13.30			9.81E+00	1.33E+01
	35	1964.43	4.22E+01	35.26			4.22E+01	3.53E+01
	36	1976.28	9.93E+00	12.01			9.93E+00	1.20E+01
	37	2089.60	1.30E+01	9.10			1.30E+01	9.10E+00
	38	2505.15	3.32E+02	37.32			3.32E+02	3.73E+01

Analysis Report for 1508105-01

GAF-13

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/sample)	Activity Uncertainty
CO-57	0.954	122.06	*	85.51	5.72E+03	7.35E+02
		136.48	*	10.60	6.78E+03	1.57E+03
CO-60	0.999	1173.22	*	100.00	1.10E+04	1.69E+03
		1332.49	*	100.00	1.12E+04	2.14E+03
Y-88	0.758	898.02	*	93.40	1.63E+04	1.22E+04
		1836.01	*	99.38	1.27E+04	8.97E+03
CD-109	0.982	88.03	*	3.72	2.25E+05	2.75E+04
SN-113	0.743	255.12		1.93		
		391.69	*	64.90	1.45E+04	4.31E+03
SN-126	0.940	87.57	*	37.00	6.98E+03	7.47E+02
CS-137	1.000	661.65	*	85.12	6.81E+03	1.06E+03
CE-139	0.842	165.85	*	80.35	7.47E+03	2.12E+03
AM-241	0.996	59.54	*	35.90	1.59E+04	1.22E+03

* = Energy line found in the spectrum.
- = Manually added nuclide.
? = Manually edited nuclide.
Energy Tolerance : 1.000 keV
Nuclide confidence index threshold = 0.30
Errors quoted at 2.000sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 8/27/2015 6:13:17PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

Analysis Report for 1508105-01

GAF-13

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	1	32.34	3.28546E+00	3.74		
	2	43.45	6.96757E-01	11.95		
	3	50.06	9.33676E-01	10.17	Tol.	TE-132 TH-227
	5	73.10	1.98079E-01	31.02	Tol.	PM-145
	6	77.34	2.17575E-01	29.09		
m	8	91.39	5.54171E-01	31.86	Tol.	ND-147
	9	103.08	7.97095E-02	59.96	Tol.	GD-153
	13	178.17	1.29170E-01	39.55		
	14	199.45	7.78912E-02	56.75		
	15	248.11	8.53031E-02	54.55		
M	16	388.93	6.65977E-02	17.22		
	18	541.88	8.15315E-02	45.19		
	19	643.55	5.21733E-02	55.06		
	21	872.47	5.05896E-02	60.20	Tol.	EU-154
	23	961.67	9.62031E-02	51.54		
	24	1042.98	7.08176E-02	49.95		
	25	1050.48	7.32910E-02	41.78		
	27	1226.63	2.86699E-02	62.49		
	28	1317.90	2.54146E-02	50.28		
	30	1523.21	1.84467E-02	63.25		
	31	1612.56	3.40684E-02	38.17		
	33	1927.67	2.01515E-02	58.55		
	34	1934.56	1.09028E-02	67.79		
	35	1964.43	4.68813E-02	41.78		
	36	1976.28	1.10354E-02	60.46		
	37	2089.60	1.44444E-02	34.99		
	38	2505.15	3.69241E-01	5.62	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/sample)	Activity Uncertainty

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Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/sample)	Activity Uncertainty
CO-57	0.95	122.06	*	85.51	5.72E+03	7.35E+02
		136.48	*	10.60	6.78E+03	1.57E+03
CO-60	0.99	1173.22	*	100.00	1.10E+04	1.69E+03
		1332.49	*	100.00	1.12E+04	2.14E+03
Y-88	0.75	898.02	*	93.40	1.63E+04	1.22E+04
		1836.01	*	99.38	1.27E+04	8.97E+03
CD-109	0.98	88.03	*	3.72	2.25E+05	2.75E+04
SN-113	0.74	255.12		1.93		
		391.69	*	64.90	1.45E+04	4.31E+03
SN-126	0.94	87.57	*	37.00	6.98E+03	7.47E+02
CS-137	1.00	661.65	*	85.12	6.81E+03	1.06E+03
CE-139	0.84	165.85	*	80.35	7.47E+03	2.12E+03
AM-241	0.99	59.54	*	35.90	1.59E+04	1.22E+03

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

INTERFERENCE CORRECTED REPORT

	Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/sample)	Wt mean Activity Uncertainty	Comments
	CO-57	0.954	5.91E+03	6.66E+02	
	CO-60	0.999	1.11E+04	1.33E+03	
	Y-88	0.758	1.39E+04	7.22E+03	
?	CD-109	0.982	2.25E+05	2.75E+04	
	SN-113	0.743	1.45E+04	4.31E+03	
?	SN-126	0.940	6.98E+03	7.47E+02	
	CS-137	1.000	6.81E+03	1.06E+03	
	CE-139	0.842	7.47E+03	2.12E+03	
	AM-241	0.996	1.59E+04	1.22E+03	

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

Errors quoted at 2.000sigma

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UNIDENTIFIED PEAKS

Peak Locate Performed on : 8/27/2015 6:13:17PM
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	32.34	3.28546E+00	3.74		
	2	43.45	6.96757E-01	11.95		
	3	50.06	9.33676E-01	10.17	Tol.	TE-132
						TH-227
	5	73.10	1.98079E-01	31.02	Tol.	PM-145
	6	77.34	2.17575E-01	29.09		
m	8	91.39	5.54171E-01	31.86	Tol.	ND-147
	9	103.08	7.97095E-02	59.96	Tol.	GD-153
	13	178.17	1.29170E-01	39.55		
	14	199.45	7.78912E-02	56.75		
	15	248.11	8.53031E-02	54.55		
M	16	388.93	6.65977E-02	17.22		
	18	541.88	8.15315E-02	45.19		
	19	643.55	5.21733E-02	55.06		
	21	872.47	5.05896E-02	60.20	Tol.	EU-154
	23	961.67	9.62031E-02	51.54		
	24	1042.98	7.08176E-02	49.95		
	25	1050.48	7.32910E-02	41.78		
	27	1226.63	2.86699E-02	62.49		
	28	1317.90	2.54146E-02	50.28		
	30	1523.21	1.84467E-02	63.25		
	31	1612.56	3.40684E-02	38.17		
	33	1927.67	2.01515E-02	58.55		
	34	1934.56	1.09028E-02	67.79		
	35	1964.43	4.68813E-02	41.78		
	36	1976.28	1.10354E-02	60.46		
	37	2089.60	1.44444E-02	34.99		
	38	2505.15	3.69241E-01	5.62	Sum	

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

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NUCLIDE MDA REPORT

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

		Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/sample)	Nuclide MDA (pCi/sample)	Line MDA (pCi/sample)
+		BE-7	477.59		10.42	-5.31E+05	1.32E+07	1.32E+07
+		NA-22	1274.54		99.94	-8.10E+01	8.49E+01	8.49E+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	-2.58E+01	4.37E+01	4.37E+01
+		K-40	1460.81		10.67	-5.53E+01	4.15E+02	4.15E+02
+	@	AR-41	1293.64		99.16	1.00E+26	1.00E+26	1.00E+26
+		TI-44	67.88		94.40	3.27E+00	2.05E+01	2.05E+01
			78.34		96.00	2.55E+01		2.26E+01
+		SC-46	889.25		99.98	-1.54E+04	5.42E+04	5.42E+04
			1120.51		99.99	2.00E+04		6.49E+04
+		V-48	983.52		99.98	-2.67E+16	3.70E+16	6.25E+16
			1312.10		97.50	1.08E+16		3.70E+16
+		CR-51	320.08		9.83	1.72E+10	1.00E+11	1.00E+11
+		MN-54	834.83		99.97	1.87E+02	4.14E+02	4.14E+02
+		CO-56	846.75		99.96	3.42E+04	2.57E+04	7.76E+04
			1037.75		14.03	-7.03E+04		6.42E+05
			1238.25		67.00	1.85E+03		7.70E+04
			1771.40		15.51	1.03E+05		3.29E+05
			2598.48		16.90	0.00E+00		2.57E+04
+		CO-57	122.06	*	85.51	5.72E+03	2.69E+02	2.69E+02
			136.48	*	10.60	6.78E+03		1.69E+03
+		CO-58	810.76		99.40	1.49E+04	1.50E+05	1.50E+05
+		FE-59	1099.22		56.50	2.03E+07	2.35E+07	3.68E+07
			1291.56		43.20	-5.79E+06		2.35E+07
+		CO-60	1173.22	*	100.00	1.10E+04	1.80E+02	2.13E+02
			1332.49	*	100.00	1.12E+04		1.80E+02
+		ZN-65	1115.52		50.75	7.86E+02	1.83E+03	1.83E+03
+	@	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	3.39E+05	3.77E+03	2.63E+04
			136.00		59.20	1.37E+04		3.77E+03
			264.65		59.80	-1.69E+03		3.85E+03
			279.53		25.20	1.43E+03		9.83E+03
			400.65		11.40	-5.38E+03		2.99E+04
+		RB-82	776.52		13.00	1.45E+11	8.66E+11	8.66E+11
+		RB-83	520.41		46.00	-1.83E+04	5.43E+04	5.43E+04
			529.64		30.30	-1.77E+04		8.12E+04
			552.65		16.40	-2.09E+04		1.45E+05

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	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/sample)	Nuclide MDA (pCi/sample)	Line MDA (pCi/sample)
+	KR-85	513.99		0.43	8.24E+03	1.24E+04	1.24E+04
+	SR-85	513.99		99.27	1.42E+05	2.14E+05	2.14E+05
+	Y-88	898.02	*	93.40	1.63E+04	1.40E+04	1.80E+04
		1836.01	*	99.38	1.27E+04		1.40E+04
+	NB-93M	16.57		9.43	-3.85E+06	2.22E+05	2.22E+05
+	NB-94	702.63		100.00	-3.74E+00	5.11E+01	5.11E+01
		871.10		100.00	-1.72E+01		7.98E+01
+	NB-95	765.79		99.81	-1.45E+07	3.48E+08	3.48E+08
+	@ NB-95M	235.69		25.00	1.00E+26	1.00E+26	1.00E+26
+	ZR-95	724.18		43.70	-2.35E+05	5.27E+05	6.34E+05
		756.72		55.30	-1.60E+05		5.27E+05
+	@ MO-99	181.06		6.20	1.00E+26	1.00E+26	1.00E+26
	@	739.58		12.80	1.00E+26		1.00E+26
	@	778.00		4.50	1.00E+26		1.00E+26
+	RU-103	497.08		89.00	-3.06E+07	5.27E+07	5.27E+07
+	RU-106	621.84		9.80	-6.41E+02	2.09E+03	2.09E+03
+	AG-108M	433.93		89.90	-1.47E+01	5.08E+01	5.08E+01
		614.37		90.40	-5.75E+00		5.16E+01
		722.95		90.50	-2.90E+01		6.16E+01
+	CD-109	88.03	*	3.72	2.25E+05	3.00E+03	3.00E+03
+	AG-110M	657.75		93.14	-1.16E+01	9.61E+02	1.47E+03
		677.61		10.53	-9.01E+02		4.41E+03
		706.67		16.46	1.21E+03		2.89E+03
		763.93		21.98	-2.60E+02		2.42E+03
		884.67		71.63	-2.77E+02		9.61E+02
		1384.27		23.94	-1.78E+01		1.82E+03
+	CD-113M	263.70		0.02	2.71E+04	1.19E+05	1.19E+05
+	SN-113	255.12		1.93	-5.95E+03	9.18E+03	1.49E+05
		391.69	*	64.90	1.45E+04		9.18E+03
+	TE123M	159.00		84.10	3.66E+02	1.95E+03	1.95E+03
+	SB-124	602.71		97.87	-1.53E+05	4.11E+05	4.11E+05
		645.85		7.26	-1.73E+06		5.64E+06
		722.78		11.10	-2.02E+06		4.29E+06
		1691.02		49.00	1.70E+05		8.98E+05
+	I-125	35.49		6.49	1.37E+07	1.05E+07	1.05E+07
+	SB-125	176.33		6.89	1.88E+02	2.66E+02	4.79E+02
		427.89		29.33	1.81E+02		2.66E+02
		463.38		10.35	-7.05E+01		8.52E+02
		600.56		17.80	8.92E+01		4.50E+02
		635.90		11.32	3.33E+02		7.06E+02
+	SB-126	414.70		83.30	-1.30E+20	6.59E+20	6.72E+20
		666.33		99.60	-3.77E+20		1.53E+21
		695.00		99.60	-1.99E+20		6.59E+20
		720.50		53.80	-1.74E+19		1.34E+21
+	SN-126	87.57	*	37.00	6.98E+03	9.32E+01	9.32E+01
+	@ 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

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	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/sample)	Nuclide MDA (pCi/sample)	Line MDA (pCi/sample)
+	I-129	29.78		57.00	-2.21E+03	3.49E+02	3.49E+02
		33.60		13.20	5.97E+03		9.05E+02
		39.58		7.52	-9.04E+02		6.20E+02
+	@ I-131	284.30		6.05	1.00E+26	1.00E+26	1.00E+26
	@	364.48		81.20	1.00E+26		1.00E+26
	@	636.97		7.26	1.00E+26		1.00E+26
	@	722.89		1.80	1.00E+26		1.00E+26
+	@ TE-132	49.72		13.10	1.00E+26	1.00E+26	1.00E+26
	@	228.16		88.00	1.00E+26		1.00E+26
+	BA-133	81.00		33.00	3.80E+01	5.94E+01	6.87E+01
		302.84		17.80	6.23E-01		1.72E+02
		356.01		60.00	-1.59E+01		5.94E+01
+	@ I-133	529.87		86.30	1.00E+26	1.00E+26	1.00E+26
+	@ XE-133	81.00		38.00	1.00E+26	1.00E+26	1.00E+26
+	CS-134	563.23		8.38	3.02E+02	9.95E+01	1.06E+03
		569.32		15.43	-3.23E+02		5.68E+02
		604.70		97.60	3.52E+01		9.95E+01
		795.84		85.40	1.72E+01		1.60E+02
		801.93		8.73	-2.89E+02		1.55E+03
+	CS-135	268.24		16.00	-1.27E+01	1.56E+02	1.56E+02
+	@ I-135	1131.51		22.50	1.00E+26	1.00E+26	1.00E+26
	@	1260.41		28.60	1.00E+26		1.00E+26
	@	1678.03		9.54	1.00E+26		1.00E+26
+	CS-136	153.22		7.46	2.30E+19	6.28E+19	2.29E+20
		163.89		4.61	-2.32E+20		5.27E+20
		176.55		13.56	5.70E+19		1.46E+20
		273.65		12.66	-2.28E+19		2.04E+20
		340.57		48.50	2.45E+18		6.28E+19
		818.50		99.70	3.98E+19		7.23E+19
		1048.07		79.60	-3.62E+19		1.15E+20
		1235.34		19.70	1.02E+20		2.59E+20
+	CS-137	661.65	*	85.12	6.81E+03	1.18E+02	1.18E+02
+	LA-138	788.74		34.00	-2.48E+01	7.40E+01	1.85E+02
		1435.80		66.00	1.15E+01		7.40E+01
+	CE-139	165.85	*	80.35	7.47E+03	1.74E+03	1.74E+03
+	BA-140	162.64		6.70	2.33E+19	5.93E+20	9.02E+20
		304.84		4.50	-7.60E+20		1.96E+21
		423.70		3.20	-3.87E+20		4.76E+21
		437.55		2.00	-1.40E+20		8.02E+21
		537.32		25.00	1.76E+19		5.93E+20
+	LA-140	328.77		20.50	-2.49E+20	1.97E+20	4.47E+20
		487.03		45.50	-8.45E+19		3.53E+20
		815.85		23.50	4.36E+19		9.81E+20
		1596.49		95.49	1.27E+20		1.97E+20
+	CE-141	145.44		48.40	2.95E+08	6.83E+08	6.83E+08
+	@ 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

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/sample)	Nuclide MDA (pCi/sample)	Line MDA (pCi/sample)
+	CE-144	133.54	10.80	-8.40E+03	1.09E+03	1.09E+03
+	PM-144	476.78	42.00	8.81E+00	2.09E+02	5.45E+02
		618.01	98.60	-6.69E+01		2.09E+02
		696.49	99.49	2.97E+01		2.30E+02
+	PM-145	36.85	21.70	7.34E+02	1.65E+02	3.25E+02
		37.36	39.70	2.83E+02		1.65E+02
		42.30	15.10	1.05E+03		3.00E+02
		72.40	2.31	1.29E+03		9.34E+02
+	PM-146	453.90	39.94	1.55E+02	1.67E+02	1.67E+02
		735.90	14.01	-5.83E+01		5.24E+02
		747.13	13.10	1.29E+02		5.91E+02
+	@ ND-147	91.11	28.90	1.00E+26	1.00E+26	1.00E+26
	@	531.02	13.10	1.00E+26		1.00E+26
+	@ PM-149	285.90	3.10	1.00E+26	1.00E+26	1.00E+26
+	EU-152	121.78	20.50	3.43E+03	1.71E+02	2.55E+02
		244.69	5.40	-3.83E+01		4.78E+02
		344.27	19.13	-6.31E+01		1.71E+02
		778.89	9.20	-1.09E+02		7.28E+02
		964.01	10.40	1.62E+01		1.09E+03
		1085.78	7.22	-5.65E+02		1.45E+03
		1112.02	9.60	5.57E+02		1.19E+03
		1407.95	14.94	9.86E+00		3.67E+02
+	GD-153	97.43	31.30	1.02E+02	4.61E+02	4.61E+02
		103.18	22.20	3.55E+02		6.66E+02
+	EU-154	123.07	40.50	1.82E+03	1.38E+02	1.38E+02
		723.30	19.70	-1.56E+02		3.31E+02
		873.19	11.50	1.30E+02		8.17E+02
		996.32	10.30	-7.66E+02		1.04E+03
		1004.76	17.90	-3.81E+02		5.88E+02
		1274.45	35.50	-1.52E+02		1.60E+02
+	EU-155	86.50	30.90	1.04E+04	9.97E+01	3.54E+02
		105.30	20.70	-8.88E+01		9.97E+01
+	EU-156	811.77	10.40	-9.43E+17	2.25E+18	2.58E+18
		1153.47	7.20	-3.83E+18		4.23E+18
		1230.71	8.90	-2.63E+17		2.25E+18
+	HO-166M	184.41	72.60	5.32E-01	2.62E+01	2.62E+01
		280.45	29.60	3.34E+01		8.83E+01
		410.94	11.10	-1.15E+02		3.82E+02
		711.69	54.10	1.54E+01		1.01E+02
+	TM-171	66.72	0.14	-1.10E+05	2.96E+04	2.96E+04
+	HF-172	81.75	4.52	5.37E+02	3.64E+02	9.42E+02
		125.81	11.30	-9.79E+03		3.64E+02
+	@ LU-172	181.53	20.60	1.00E+26	1.00E+26	1.00E+26
	@	810.06	16.63	1.00E+26		1.00E+26
	@	912.12	15.25	1.00E+26		1.00E+26
	@	1093.66	62.50	1.00E+26		1.00E+26
+	LU-173	100.72	5.24	1.82E+02	3.58E+02	8.64E+02
		272.11	21.20	5.44E+01		3.58E+02
+	HF-175	343.40	84.00	-2.08E+03	8.61E+04	8.61E+04

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/sample)	Nuclide MDA (pCi/sample)	Line MDA (pCi/sample)
+	LU-176	88.34	13.30	1.88E+04	2.65E+01	6.22E+02
		201.83	86.00	-4.35E+00		2.65E+01
		306.78	94.00	-3.04E+01		2.78E+01
+	TA-182	67.75	41.20	8.61E+02	5.42E+03	5.42E+03
		1121.30	34.90	1.58E+04		3.24E+04
		1189.05	16.23	-3.85E+04		5.38E+04
		1221.41	26.98	3.89E+03		2.21E+04
		1231.02	11.44	-6.00E+03		5.13E+04
+	IR-192	308.46	29.68	1.20E+05	1.54E+05	1.54E+05
		468.07	48.10	2.45E+04		1.75E+05
+	HG-203	279.19	77.30	1.37E+05	4.08E+06	4.08E+06
+	BI-207	569.67	97.72	-5.59E+00	4.59E+01	4.59E+01
		1063.62	74.90	2.82E+01		1.31E+02
+	TL-208	583.14	30.22	6.96E+00	4.04E+01	1.50E+02
		860.37	4.48	2.80E+02		1.75E+03
		2614.66	35.85	8.71E+00		4.04E+01
+	BI-210M	262.00	45.00	-2.13E+01	5.40E+01	5.40E+01
		300.00	23.00	5.78E+01		1.20E+02
+	PB-210	46.50	4.25	-6.88E+03	7.68E+02	7.68E+02
+	PB-211	404.84	2.90	4.39E+02	1.28E+03	1.28E+03
		831.96	2.90	4.11E+02		2.45E+03
+	BI-212	727.17	11.80	2.36E+02	4.89E+02	4.89E+02
		1620.62	2.75	7.28E+02		1.93E+03
+	PB-212	238.63	44.60	4.33E+00	5.46E+01	5.46E+01
		300.09	3.41	3.90E+02		8.09E+02
+	BI-214	609.31	46.30	7.78E+00	1.01E+02	1.01E+02
		1120.29	15.10	1.97E+02		6.39E+02
		1764.49	15.80	9.51E+01		3.03E+02
		2204.22	4.98	-2.57E+02		1.00E+03
+	PB-214	295.21	19.19	-8.41E+00	8.16E+01	1.41E+02
		351.92	37.19	-5.48E-01		8.16E+01
+	RN-219	401.80	6.50	-8.35E+01	5.56E+02	5.56E+02
+	RA-223	323.87	3.88	1.37E+02	7.15E+02	7.15E+02
+	RA-224	240.98	3.95	3.94E+02	6.21E+02	6.21E+02
+	RA-225	40.00	31.00	-2.21E+18	1.52E+18	1.52E+18
+	RA-226	186.21	3.28	-9.44E+01	5.94E+02	5.94E+02
+	TH-227	50.10	8.40	1.11E+03	2.08E+02	3.88E+02
		236.00	11.50	-5.51E+01		2.08E+02
		256.20	6.30	2.36E+02		4.06E+02
+	AC-228	338.32	11.40	-1.53E-01	2.57E+02	2.57E+02
		911.07	27.70	-1.59E+01		3.30E+02
		969.11	16.60	6.11E+01		5.76E+02
+	TH-230	48.44	16.90	3.13E+02	1.94E+02	1.94E+02
		62.85	4.60	6.60E+02		1.21E+03
		67.67	0.37	8.14E+02		5.12E+03
+	PA-231	283.67	1.60	-4.65E+02	1.15E+03	1.59E+03
		302.67	2.30	4.18E+00		1.15E+03
+	TH-231	25.64	14.70	-1.14E+06	3.47E+02	1.31E+04

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	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/sample)	Nuclide MDA (pCi/sample)	Line MDA (pCi/sample)
	TH-231	84.21		6.40	-4.05E+04	3.47E+02	3.47E+02
+	PA-233	311.98		38.60	2.63E+10	4.52E+10	4.52E+10
+	PA-234	131.20		20.40	-5.42E+00	7.45E+01	7.45E+01
		733.99		8.80	-1.70E+02		6.36E+02
		946.00		12.00	6.23E+01		8.35E+02
+	PA-234M	1001.03		0.92	6.67E+03	1.03E+04	1.03E+04
+	TH-234	63.29		3.80	1.81E+02	6.83E+02	6.83E+02
+	U-235	143.76		10.50	-3.80E+01	1.55E+02	1.55E+02
		163.35		4.70	-2.22E+02		5.03E+02
		205.31		4.70	1.32E+02		4.69E+02
+	NP-237	86.50		12.60	1.89E+04	6.43E+02	6.43E+02
+	@ NP-239	106.10		22.70	1.00E+26	1.00E+26	1.00E+26
	@	228.18		10.70	1.00E+26		1.00E+26
	@	277.60		14.10	1.00E+26		1.00E+26
+	AM-241	59.54	*	35.90	1.59E+04	1.22E+02	1.22E+02
+	AM-243	74.67		66.00	-3.67E+01	3.07E+01	3.07E+01
+	CM-243	209.75		3.29	-2.53E+02	1.93E+02	7.06E+02
		228.14		10.60	5.29E+01		2.37E+02
		277.60		14.00	-1.39E+01		1.93E+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
? = 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/sample)	Nuclide MDA (pCi/sample)	Activity (pCi/sample)	Dec. Level (pCi/sample)
BE-7	477.59	10.42	1.32E+07	1.32E+07	-5.31E+05	6.47E+06
NA-22	1274.54	99.94	8.49E+01	8.49E+01	-8.10E+01	3.96E+01

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	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/sample)	Nuclide MDA (pCi/sample)	Activity (pCi/sample)	Dec. Level (pCi/sample)
@	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	4.37E+01	4.37E+01	-2.58E+01	1.96E+01
	K-40	1460.81		10.67	4.15E+02	4.15E+02	-5.53E+01	1.90E+02
@	AR-41	1293.64		99.16	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	TI-44	67.88		94.40	2.05E+01	2.05E+01	3.27E+00	1.01E+01
		78.34		96.00	2.26E+01		2.55E+01	1.11E+01
	SC-46	889.25		99.98	5.42E+04	5.42E+04	-1.54E+04	2.64E+04
		1120.51		99.99	6.49E+04		2.00E+04	3.15E+04
	V-48	983.52		99.98	6.25E+16	3.70E+16	-2.67E+16	3.04E+16
		1312.10		97.50	3.70E+16		1.08E+16	1.73E+16
	CR-51	320.08		9.83	1.00E+11	1.00E+11	1.72E+10	4.86E+10
	MN-54	834.83		99.97	4.14E+02	4.14E+02	1.87E+02	2.01E+02
	CO-56	846.75		99.96	7.76E+04	2.57E+04	3.42E+04	3.78E+04
		1037.75		14.03	6.42E+05		-7.03E+04	3.12E+05
		1238.25		67.00	7.70E+04		1.85E+03	3.61E+04
		1771.40		15.51	3.29E+05		1.03E+05	1.50E+05
		2598.48		16.90	2.57E+04		0.00E+00	0.00E+00
+	CO-57	122.06	*	85.51	2.69E+02	2.69E+02	5.72E+03	1.33E+02
		136.48	*	10.60	1.69E+03		6.78E+03	8.30E+02
	CO-58	810.76		99.40	1.50E+05	1.50E+05	1.49E+04	7.28E+04
	FE-59	1099.22		56.50	3.68E+07	2.35E+07	2.03E+07	1.79E+07
		1291.56		43.20	2.35E+07		-5.79E+06	1.10E+07
+	CO-60	1173.22	*	100.00	2.13E+02	1.80E+02	1.10E+04	1.05E+02
		1332.49	*	100.00	1.80E+02		1.12E+04	8.76E+01
	ZN-65	1115.52		50.75	1.83E+03	1.83E+03	7.86E+02	8.92E+02
@	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	2.63E+04	3.77E+03	3.39E+05	1.30E+04
		136.00		59.20	3.77E+03		1.37E+04	1.85E+03
		264.65		59.80	3.85E+03		-1.69E+03	1.87E+03
		279.53		25.20	9.83E+03		1.43E+03	4.79E+03
		400.65		11.40	2.99E+04		-5.38E+03	1.46E+04
	RB-82	776.52		13.00	8.66E+11	8.66E+11	1.45E+11	4.20E+11
	RB-83	520.41		46.00	5.43E+04	5.43E+04	-1.83E+04	2.64E+04
		529.64		30.30	8.12E+04		-1.77E+04	3.95E+04
		552.65		16.40	1.45E+05		-2.09E+04	7.03E+04
	KR-85	513.99		0.43	1.24E+04	1.24E+04	8.24E+03	6.07E+03
	SR-85	513.99		99.27	2.14E+05	2.14E+05	1.42E+05	1.04E+05
+	Y-88	898.02	*	93.40	1.80E+04	1.40E+04	1.63E+04	8.81E+03
		1836.01	*	99.38	1.40E+04		1.27E+04	6.62E+03
	NB-93M	16.57		9.43	2.22E+05	2.22E+05	-3.85E+06	1.10E+05
	NB-94	702.63		100.00	5.11E+01	5.11E+01	-3.74E+00	2.47E+01
		871.10		100.00	7.98E+01		-1.72E+01	3.89E+01
	NB-95	765.79		99.81	3.48E+08	3.48E+08	-1.45E+07	1.69E+08
@	NB-95M	235.69		25.00	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	ZR-95	724.18		43.70	6.34E+05	5.27E+05	-2.35E+05	3.08E+05
		756.72		55.30	5.27E+05		-1.60E+05	2.56E+05
@	MO-99	181.06		6.20	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		739.58		12.80	1.00E+26		1.00E+26	1.00E+20
@		778.00		4.50	1.00E+26		1.00E+26	1.00E+20
	RU-103	497.08		89.00	5.27E+07	5.27E+07	-3.06E+07	2.57E+07

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	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/sample)	Nuclide MDA (pCi/sample)	Activity (pCi/sample)	Dec. Level (pCi/sample)
	RU-106	621.84		9.80	2.09E+03	2.09E+03	-6.41E+02	1.01E+03
	AG-108M	433.93		89.90	5.08E+01	5.08E+01	-1.47E+01	2.48E+01
		614.37		90.40	5.16E+01		-5.75E+00	2.50E+01
		722.95		90.50	6.16E+01		-2.90E+01	2.99E+01
+	CD-109	88.03	*	3.72	3.00E+03	3.00E+03	2.25E+05	1.49E+03
	AG-110M	657.75		93.14	1.47E+03	9.61E+02	-1.16E+01	7.28E+02
		677.61		10.53	4.41E+03		-9.01E+02	2.14E+03
		706.67		16.46	2.89E+03		1.21E+03	1.40E+03
		763.93		21.98	2.42E+03		-2.60E+02	1.17E+03
		884.67		71.63	9.61E+02		-2.77E+02	4.68E+02
		1384.27		23.94	1.82E+03		-1.78E+01	8.46E+02
	CD-113M	263.70		0.02	1.19E+05	1.19E+05	2.71E+04	5.82E+04
+	SN-113	255.12		1.93	1.49E+05	9.18E+03	-5.95E+03	7.28E+04
		391.69	*	64.90	9.18E+03		1.45E+04	4.51E+03
	TE123M	159.00		84.10	1.95E+03	1.95E+03	3.66E+02	9.49E+02
	SB-124	602.71		97.87	4.11E+05	4.11E+05	-1.53E+05	2.00E+05
		645.85		7.26	5.64E+06		-1.73E+06	2.73E+06
		722.78		11.10	4.29E+06		-2.02E+06	2.08E+06
		1691.02		49.00	8.98E+05		1.70E+05	4.11E+05
	I-125	35.49		6.49	1.05E+07	1.05E+07	1.37E+07	5.18E+06
	SB-125	176.33		6.89	4.79E+02	2.66E+02	1.88E+02	2.34E+02
		427.89		29.33	2.66E+02		1.81E+02	1.30E+02
		463.38		10.35	8.52E+02		-7.05E+01	4.17E+02
		600.56		17.80	4.50E+02		8.92E+01	2.19E+02
		635.90		11.32	7.06E+02		3.33E+02	3.42E+02
	SB-126	414.70		83.30	6.72E+20	6.59E+20	-1.30E+20	3.29E+20
		666.33		99.60	1.53E+21		-3.77E+20	7.57E+20
		695.00		99.60	6.59E+20		-1.99E+20	3.19E+20
		720.50		53.80	1.34E+21		-1.74E+19	6.50E+20
+	SN-126	87.57	*	37.00	9.32E+01	9.32E+01	6.98E+03	4.62E+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	3.49E+02	3.49E+02	-2.21E+03	1.73E+02
		33.60		13.20	9.05E+02		5.97E+03	4.49E+02
		39.58		7.52	6.20E+02		-9.04E+02	3.07E+02
@	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	6.87E+01	5.94E+01	3.80E+01	3.38E+01
		302.84		17.80	1.72E+02		6.23E-01	8.35E+01
		356.01		60.00	5.94E+01		-1.59E+01	2.89E+01
@	I-133	529.87		86.30	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	XE-133	81.00		38.00	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	CS-134	563.23		8.38	1.06E+03	9.95E+01	3.02E+02	5.16E+02
		569.32		15.43	5.68E+02		-3.23E+02	2.76E+02
		604.70		97.60	9.95E+01		3.52E+01	4.83E+01
		795.84		85.40	1.60E+02		1.72E+01	7.80E+01
		801.93		8.73	1.55E+03		-2.89E+02	7.51E+02
	CS-135	268.24		16.00	1.56E+02	1.56E+02	-1.27E+01	7.57E+01

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	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/sample)	Nuclide MDA (pCi/sample)	Activity (pCi/sample)	Dec. Level (pCi/sample)
@	I-135	1131.51		22.50	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@		1260.41		28.60	1.00E+26		1.00E+26	1.00E+20
@		1678.03		9.54	1.00E+26		1.00E+26	1.00E+20
	CS-136	153.22		7.46	2.29E+20	6.28E+19	2.30E+19	1.12E+20
		163.89		4.61	5.27E+20		-2.32E+20	2.58E+20
		176.55		13.56	1.46E+20		5.70E+19	7.10E+19
		273.65		12.66	2.04E+20		-2.28E+19	9.95E+19
		340.57		48.50	6.28E+19		2.45E+18	3.06E+19
		818.50		99.70	7.23E+19		3.98E+19	3.52E+19
		1048.07		79.60	1.15E+20		-3.62E+19	5.59E+19
		1235.34		19.70	2.59E+20		1.02E+20	1.21E+20
+	CS-137	661.65	*	85.12	1.18E+02	1.18E+02	6.81E+03	5.80E+01
	LA-138	788.74		34.00	1.85E+02	7.40E+01	-2.48E+01	8.98E+01
		1435.80		66.00	7.40E+01		1.15E+01	3.42E+01
+	CE-139	165.85	*	80.35	1.74E+03	1.74E+03	7.47E+03	8.53E+02
	BA-140	162.64		6.70	9.02E+20	5.93E+20	2.33E+19	4.39E+20
		304.84		4.50	1.96E+21		-7.60E+20	9.51E+20
		423.70		3.20	4.76E+21		-3.87E+20	2.33E+21
		437.55		2.00	8.02E+21		-1.40E+20	3.93E+21
		537.32		25.00	5.93E+20		1.76E+19	2.88E+20
	LA-140	328.77		20.50	4.47E+20	1.97E+20	-2.49E+20	2.17E+20
		487.03		45.50	3.53E+20		-8.45E+19	1.72E+20
		815.85		23.50	9.81E+20		4.36E+19	4.77E+20
		1596.49		95.49	1.97E+20		1.27E+20	9.14E+19
	CE-141	145.44		48.40	6.83E+08	6.83E+08	2.95E+08	3.33E+08
@	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	1.09E+03	1.09E+03	-8.40E+03	5.31E+02
	PM-144	476.78		42.00	5.45E+02	2.09E+02	8.81E+00	2.67E+02
		618.01		98.60	2.09E+02		-6.69E+01	1.01E+02
		696.49		99.49	2.30E+02		2.97E+01	1.11E+02
	PM-145	36.85		21.70	3.25E+02	1.65E+02	7.34E+02	1.61E+02
		37.36		39.70	1.65E+02		2.83E+02	8.17E+01
		42.30		15.10	3.00E+02		1.05E+03	1.48E+02
		72.40		2.31	9.34E+02		1.29E+03	4.60E+02
	PM-146	453.90		39.94	1.67E+02	1.67E+02	1.55E+02	8.18E+01
		735.90		14.01	5.24E+02		-5.83E+01	2.54E+02
		747.13		13.10	5.91E+02		1.29E+02	2.87E+02
@	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	2.55E+02	1.71E+02	3.43E+03	1.26E+02
		244.69		5.40	4.78E+02		-3.83E+01	2.33E+02
		344.27		19.13	1.71E+02		-6.31E+01	8.33E+01
		778.89		9.20	7.28E+02		-1.09E+02	3.53E+02
		964.01		10.40	1.09E+03		1.62E+01	5.32E+02
		1085.78		7.22	1.45E+03		-5.65E+02	7.02E+02
		1112.02		9.60	1.19E+03		5.57E+02	5.81E+02
		1407.95		14.94	3.67E+02		9.86E+00	1.70E+02
	GD-153	97.43		31.30	4.61E+02	4.61E+02	1.02E+02	2.26E+02
		103.18		22.20	6.66E+02		3.55E+02	3.26E+02
	EU-154	123.07		40.50	1.38E+02	1.38E+02	1.82E+03	6.85E+01

Analysis Report for 1508105-01

GAF-13

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/sample)	Nuclide MDA (pCi/sample)	Activity (pCi/sample)	Dec. Level (pCi/sample)
EU-154	723.30	19.70	3.31E+02	1.38E+02	-1.56E+02	1.61E+02
	873.19	11.50	8.17E+02		1.30E+02	3.98E+02
	996.32	10.30	1.04E+03		-7.66E+02	5.07E+02
	1004.76	17.90	5.88E+02		-3.81E+02	2.86E+02
	1274.45	35.50	1.60E+02		-1.52E+02	7.43E+01
EU-155	86.50	30.90	3.54E+02	9.97E+01	1.04E+04	1.77E+02
	105.30	20.70	9.97E+01		-8.88E+01	4.87E+01
EU-156	811.77	10.40	2.58E+18	2.25E+18	-9.43E+17	1.25E+18
	1153.47	7.20	4.23E+18		-3.83E+18	2.03E+18
	1230.71	8.90	2.25E+18		-2.63E+17	1.05E+18
HO-166M	184.41	72.60	2.62E+01	2.62E+01	5.32E-01	1.28E+01
	280.45	29.60	8.83E+01		3.34E+01	4.30E+01
	410.94	11.10	3.82E+02		-1.15E+02	1.87E+02
	711.69	54.10	1.01E+02		1.54E+01	4.90E+01
TM-171	66.72	0.14	2.96E+04	2.96E+04	-1.10E+05	1.46E+04
HF-172	81.75	4.52	9.42E+02	3.64E+02	5.37E+02	4.63E+02
	125.81	11.30	3.64E+02		-9.79E+03	1.78E+02
@ LU-172	181.53	20.60	1.00E+26	1.00E+26	1.00E+26	1.00E+20
@	810.06	16.63	1.00E+26		1.00E+26	1.00E+20
@	912.12	15.25	1.00E+26		1.00E+26	1.00E+20
@	1093.66	62.50	1.00E+26		1.00E+26	1.00E+20
LU-173	100.72	5.24	8.64E+02	3.58E+02	1.82E+02	4.22E+02
	272.11	21.20	3.58E+02		5.44E+01	1.74E+02
HF-175	343.40	84.00	8.61E+04	8.61E+04	-2.08E+03	4.19E+04
LU-176	88.34	13.30	6.22E+02	2.65E+01	1.88E+04	3.10E+02
	201.83	86.00	2.65E+01		-4.35E+00	1.30E+01
	306.78	94.00	2.78E+01		-3.04E+01	1.35E+01
TA-182	67.75	41.20	5.42E+03	5.42E+03	8.61E+02	2.67E+03
	1121.30	34.90	3.24E+04		1.58E+04	1.57E+04
	1189.05	16.23	5.38E+04		-3.85E+04	2.58E+04
	1221.41	26.98	2.21E+04		3.89E+03	1.04E+04
	1231.02	11.44	5.13E+04		-6.00E+03	2.40E+04
IR-192	308.46	29.68	1.54E+05	1.54E+05	1.20E+05	7.49E+04
	468.07	48.10	1.75E+05		2.45E+04	8.58E+04
HG-203	279.19	77.30	4.08E+06	4.08E+06	1.37E+05	1.99E+06
BI-207	569.67	97.72	4.59E+01	4.59E+01	-5.59E+00	2.23E+01
	1063.62	74.90	1.31E+02		2.82E+01	6.36E+01
TL-208	583.14	30.22	1.50E+02	4.04E+01	6.96E+00	7.27E+01
	860.37	4.48	1.75E+03		2.80E+02	8.55E+02
	2614.66	35.85	4.04E+01		8.71E+00	1.43E+01
BI-210M	262.00	45.00	5.40E+01	5.40E+01	-2.13E+01	2.63E+01
	300.00	23.00	1.20E+02		5.78E+01	5.84E+01
PB-210	46.50	4.25	7.68E+02	7.68E+02	-6.88E+03	3.79E+02
PB-211	404.84	2.90	1.28E+03	1.28E+03	4.39E+02	6.22E+02
	831.96	2.90	2.45E+03		4.11E+02	1.19E+03
BI-212	727.17	11.80	4.89E+02	4.89E+02	2.36E+02	2.38E+02
	1620.62	2.75	1.93E+03		7.28E+02	8.89E+02
PB-212	238.63	44.60	5.46E+01	5.46E+01	4.33E+00	2.66E+01
	300.09	3.41	8.09E+02		3.90E+02	3.94E+02
BI-214	609.31	46.30	1.01E+02	1.01E+02	7.78E+00	4.91E+01
	1120.29	15.10	6.39E+02		1.97E+02	3.10E+02
	1764.49	15.80	3.03E+02		9.51E+01	1.38E+02
	2204.22	4.98	1.00E+03		-2.57E+02	4.55E+02

Analysis Report for 1508105-01

GAF-13

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/sample)	Nuclide MDA (pCi/sample)	Activity (pCi/sample)	Dec. Level (pCi/sample)
	PB-214	295.21		19.19	1.41E+02	8.16E+01	-8.41E+00	6.86E+01
		351.92		37.19	8.16E+01		-5.48E-01	3.97E+01
	RN-219	401.80		6.50	5.56E+02	5.56E+02	-8.35E+01	2.71E+02
	RA-223	323.87		3.88	7.15E+02	7.15E+02	1.37E+02	3.48E+02
	RA-224	240.98		3.95	6.21E+02	6.21E+02	3.94E+02	3.03E+02
	RA-225	40.00		31.00	1.52E+18	1.52E+18	-2.21E+18	7.51E+17
	RA-226	186.21		3.28	5.94E+02	5.94E+02	-9.44E+01	2.89E+02
	TH-227	50.10		8.40	3.88E+02	2.08E+02	1.11E+03	1.92E+02
		236.00		11.50	2.08E+02		-5.51E+01	1.01E+02
		256.20		6.30	4.06E+02		2.36E+02	1.98E+02
	AC-228	338.32		11.40	2.57E+02	2.57E+02	-1.53E-01	1.25E+02
		911.07		27.70	3.30E+02		-1.59E+01	1.61E+02
		969.11		16.60	5.76E+02		6.11E+01	2.81E+02
	TH-230	48.44		16.90	1.94E+02	1.94E+02	3.13E+02	9.61E+01
		62.85		4.60	1.21E+03		6.60E+02	6.03E+02
		67.67		0.37	5.12E+03		8.14E+02	2.52E+03
	PA-231	283.67		1.60	1.59E+03	1.15E+03	-4.65E+02	7.72E+02
		302.67		2.30	1.15E+03		4.18E+00	5.60E+02
	TH-231	25.64		14.70	1.31E+04	3.47E+02	-1.14E+06	6.55E+03
		84.21		6.40	3.47E+02		-4.05E+04	1.71E+02
	PA-233	311.98		38.60	4.52E+10	4.52E+10	2.63E+10	2.20E+10
	PA-234	131.20		20.40	7.45E+01	7.45E+01	-5.42E+00	3.63E+01
		733.99		8.80	6.36E+02		-1.70E+02	3.09E+02
		946.00		12.00	8.35E+02		6.23E+01	4.08E+02
	PA-234M	1001.03		0.92	1.03E+04	1.03E+04	6.67E+03	5.00E+03
	TH-234	63.29		3.80	6.83E+02	6.83E+02	1.81E+02	3.38E+02
	U-235	143.76		10.50	1.55E+02	1.55E+02	-3.80E+01	7.53E+01
		163.35		4.70	5.03E+02		-2.22E+02	2.46E+02
		205.31		4.70	4.69E+02		1.32E+02	2.29E+02
	NP-237	86.50		12.60	6.43E+02	6.43E+02	1.89E+04	3.20E+02
@	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	1.22E+02	1.22E+02	1.59E+04	6.04E+01
	AM-243	74.67		66.00	3.07E+01	3.07E+01	-3.67E+01	1.51E+01
	CM-243	209.75		3.29	7.06E+02	1.93E+02	-2.53E+02	3.44E+02
		228.14		10.60	2.37E+02		5.29E+01	1.16E+02
		277.60		14.00	1.93E+02		-1.39E+01	9.37E+01

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

No Action Level results available for reporting purposes.

Analysis Report for 1508105-01

GAF-13

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: GAF-13

Elapsed Live time: 900
Elapsed Real Time: 916

Channel								
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	7	53	2536	6588	26234	223170	203448	18415
25:	60544	42743	6081	1724	1551	958	807	2134
33:	2178	1166	755	801	921	648	611	495
41:	518	519	635	794	492	355	414	371
49:	534	849	631	588	473	458	524	514
57:	595	857	5974	36463	9362	742	603	632
65:	256	257	291	303	242	242	265	286
73:	278	356	274	242	363	388	298	268
81:	294	301	202	219	264	290	727	10080
89:	11246	762	310	347	245	161	130	144
97:	121	144	144	122	115	107	174	151
105:	124	109	123	127	132	126	128	131
113:	112	97	102	116	101	96	101	125
121:	231	2162	2365	235	139	146	124	100
129:	121	103	87	99	88	94	110	203
137:	491	185	118	92	94	81	96	110
145:	95	92	104	101	88	98	93	83
153:	109	87	99	79	87	94	90	101
161:	87	94	85	79	128	464	316	101
169:	93	89	81	85	82	82	85	99
177:	100	112	105	99	92	90	76	105
185:	90	100	87	92	104	93	94	101
193:	100	106	101	109	89	94	133	147
201:	108	105	100	123	127	95	94	92
209:	100	108	102	111	122	93	99	133
217:	123	113	121	105	112	101	110	125
225:	88	107	110	103	110	103	91	106
233:	100	97	105	108	110	92	119	104
241:	98	98	103	98	70	89	93	110
249:	103	110	92	94	94	116	114	85
257:	96	110	105	75	97	98	87	95
265:	103	81	76	103	91	102	87	99
273:	90	94	91	84	94	93	92	98
281:	91	98	95	91	74	82	83	104
289:	86	97	99	95	81	101	96	93
297:	99	99	89	95	98	97	72	85
305:	82	79	88	91	74	98	144	89
313:	79	90	104	77	79	89	82	85
321:	82	87	93	75	80	94	82	80
329:	76	75	81	80	102	100	84	79
337:	92	90	84	92	90	109	81	89
345:	91	81	95	86	97	82	83	89
353:	106	91	88	91	100	90	104	91
361:	100	91	93	86	100	75	100	90

369:	114	83	99	96	90	99	93	115

Sample Title: GAF-13

Channel								
377:	93	99	88	103	91	93	105	89
385:	99	92	72	84	117	92	144	232
393:	126	98	102	102	102	95	96	112
401:	93	107	101	104	117	111	102	93
409:	105	100	97	107	87	99	99	104
417:	96	105	104	109	114	111	81	94
425:	122	105	96	114	93	98	109	94
433:	99	92	116	99	99	105	124	117
441:	98	132	105	122	103	115	110	90
449:	101	104	111	122	121	122	99	122
457:	136	91	108	116	120	121	115	119
465:	111	110	123	121	126	122	137	121
473:	119	114	138	117	126	93	82	91
481:	99	103	100	91	95	93	91	80
489:	94	81	82	93	93	83	80	56
497:	86	72	74	80	72	86	96	81
505:	64	78	83	76	62	80	96	84
513:	77	74	81	65	80	71	64	62
521:	76	85	64	62	75	76	68	63
529:	68	75	59	67	53	71	54	64
537:	69	54	60	56	75	77	66	53
545:	57	43	61	67	52	63	64	62
553:	57	41	47	52	54	57	58	48
561:	59	46	55	71	59	48	40	53
569:	61	65	43	56	55	56	56	36
577:	51	58	57	59	50	60	50	65
585:	52	59	67	42	59	56	51	47
593:	54	57	49	54	52	60	56	61
601:	57	51	58	53	52	57	70	55
609:	44	48	56	55	53	57	54	48
617:	45	54	47	63	45	55	55	55
625:	43	56	65	51	59	67	53	37
633:	56	54	44	50	41	45	57	44
641:	41	46	65	48	51	44	37	50
649:	50	54	64	54	55	59	56	58
657:	57	60	87	328	3023	5499	1416	170
665:	152	115	83	53	61	64	60	60
673:	57	66	60	66	53	60	42	47
681:	52	59	49	66	65	53	43	51
689:	57	46	44	61	45	45	55	48
697:	39	38	57	53	35	47	45	55
705:	49	48	50	48	48	62	51	41
713:	60	56	51	55	49	62	52	56
721:	56	45	41	57	44	63	54	63
729:	53	60	55	55	51	50	50	53
737:	47	57	51	53	49	51	54	52
745:	58	62	52	47	61	54	45	59
753:	57	42	48	57	55	47	54	56
761:	49	57	59	48	51	56	55	48
769:	62	57	55	37	46	51	54	62
777:	46	48	51	45	59	49	54	54
785:	56	55	50	46	47	69	59	58
793:	60	56	74	63	61	51	55	75

801:	42	50	58	54	66	59	66	56

Sample Title: GAF-13

Channel								
809:	52	69	53	69	57	51	53	52
817:	76	63	60	63	49	78	62	53
825:	69	53	62	55	61	59	58	64
833:	57	63	72	59	62	66	47	64
841:	58	56	55	73	62	63	61	79
849:	65	71	69	62	62	62	70	62
857:	74	74	73	64	58	79	67	64
865:	73	73	55	55	80	59	67	86
873:	72	70	64	61	51	79	53	73
881:	72	74	57	65	60	53	76	57
889:	60	67	77	84	75	85	83	71
897:	98	134	117	80	54	81	87	82
905:	83	75	92	81	94	71	77	85
913:	85	82	75	90	77	71	89	80
921:	92	99	92	77	78	79	81	103
929:	97	86	73	86	75	82	89	82
937:	94	86	79	82	92	84	95	98
945:	101	67	92	77	101	86	93	99
953:	84	102	91	100	87	79	84	100
961:	103	96	89	90	78	74	87	81
969:	75	71	74	77	71	67	56	73
977:	80	74	82	75	74	55	58	71
985:	65	70	65	61	72	75	63	86
993:	63	67	58	66	58	72	65	73
1001:	77	65	63	69	59	56	55	55
1009:	62	69	57	82	61	78	51	67
1017:	74	55	54	71	74	56	67	69
1025:	66	55	69	59	58	61	60	61
1033:	62	64	65	44	57	53	57	48
1041:	59	65	66	73	50	46	47	53
1049:	54	69	65	57	43	43	59	68
1057:	54	55	58	71	59	53	62	72
1065:	56	60	45	48	49	58	49	64
1073:	49	61	53	65	58	57	72	62
1081:	65	52	52	58	61	64	53	42
1089:	55	61	62	63	65	60	51	73
1097:	63	59	72	50	62	63	47	63
1105:	74	59	56	63	63	69	64	55
1113:	60	70	58	53	54	63	53	46
1121:	50	57	56	50	42	43	43	47
1129:	39	49	46	40	43	43	39	49
1137:	39	29	32	40	43	35	37	25
1145:	38	41	33	37	43	28	32	33
1153:	28	28	32	33	48	31	40	35
1161:	35	25	36	44	32	31	35	33
1169:	39	57	191	1428	3554	2069	359	113
1177:	90	59	35	33	41	32	27	42
1185:	31	30	30	25	31	25	27	21
1193:	28	36	32	23	20	27	18	27
1201:	21	25	17	31	21	17	13	17
1209:	20	14	11	22	20	12	15	13
1217:	19	15	13	9	15	11	8	8
1225:	17	21	12	15	14	9	11	8

1233:	12	6	13	7	14	14	3	10

Sample Title: GAF-13

Channel								
1241:	15	12	12	11	4	12	14	11
1249:	8	8	16	16	14	8	9	14
1257:	10	11	11	10	15	12	12	18
1265:	6	11	6	10	18	21	5	7
1273:	14	12	12	6	7	11	10	13
1281:	7	11	12	9	12	19	7	14
1289:	8	8	12	7	11	6	11	8
1297:	10	11	10	5	6	11	7	10
1305:	8	8	10	5	14	9	12	11
1313:	11	4	9	8	13	14	18	5
1321:	11	9	14	9	14	10	16	14
1329:	17	147	935	2800	2221	539	100	65
1337:	38	22	10	11	10	19	16	15
1345:	16	10	14	13	12	11	11	10
1353:	16	16	13	8	6	7	6	9
1361:	6	3	11	5	5	8	3	6
1369:	8	8	9	9	8	5	6	3
1377:	9	7	3	7	6	12	7	7
1385:	8	8	7	5	15	7	8	6
1393:	8	8	8	4	11	4	9	8
1401:	12	6	10	6	8	7	7	6
1409:	9	11	5	7	7	8	5	5
1417:	10	7	8	4	13	7	10	6
1425:	6	3	5	4	5	5	3	5
1433:	5	5	8	8	4	14	6	8
1441:	9	3	10	9	7	9	9	3
1449:	3	6	4	6	4	4	5	7
1457:	10	3	5	4	7	7	8	5
1465:	4	4	5	3	3	4	5	4
1473:	5	3	6	6	3	8	5	5
1481:	12	6	10	3	7	9	5	7
1489:	5	4	8	1	9	4	5	6
1497:	2	1	4	9	3	2	2	5
1505:	7	8	6	7	5	4	7	9
1513:	9	6	7	3	5	8	7	4
1521:	6	9	13	9	1	4	4	7
1529:	9	10	6	3	7	7	8	9
1537:	3	8	8	7	6	6	10	8
1545:	6	3	6	5	7	3	7	11
1553:	6	6	4	7	2	11	5	5
1561:	8	3	5	2	6	8	6	9
1569:	7	9	9	5	5	8	2	8
1577:	8	12	7	9	7	6	7	7
1585:	6	6	6	11	7	8	5	4
1593:	5	11	8	6	7	5	11	5
1601:	3	4	12	3	5	13	5	4
1609:	7	7	10	13	10	10	6	2
1617:	5	6	9	10	3	7	7	6
1625:	5	4	7	6	6	4	4	1
1633:	5	3	5	6	9	3	8	5
1641:	4	5	7	6	5	7	7	6
1649:	7	8	2	3	5	5	9	11
1657:	5	9	5	8	5	5	4	5

1665:	9	3	2	7	10	5	3	8

Sample Title: GAF-13

Channel								
1673:	10	3	5	3	5	3	3	9
1681:	3	9	7	3	3	3	3	11
1689:	2	5	6	6	6	4	5	7
1697:	6	5	4	3	6	3	6	5
1705:	7	7	6	8	5	9	4	5
1713:	6	3	5	4	6	5	5	7
1721:	7	4	4	2	3	6	11	7
1729:	3	7	3	12	2	4	2	1
1737:	4	5	8	2	8	4	7	4
1745:	7	6	3	4	5	5	8	4
1753:	4	4	4	10	5	8	4	1
1761:	7	2	5	6	6	3	4	3
1769:	5	5	5	7	7	4	2	6
1777:	10	2	7	10	6	7	2	10
1785:	5	4	7	4	3	7	6	6
1793:	2	5	6	2	5	6	5	3
1801:	7	5	5	5	6	4	3	3
1809:	4	3	3	6	7	5	6	4
1817:	1	3	5	5	5	2	3	4
1825:	5	4	1	3	5	4	4	6
1833:	1	8	22	40	14	7	5	7
1841:	11	4	4	5	5	5	5	7
1849:	4	15	10	9	5	4	7	6
1857:	5	4	3	7	4	6	3	4
1865:	5	7	5	4	4	7	4	7
1873:	6	5	7	7	6	7	8	4
1881:	6	8	5	8	3	2	4	6
1889:	7	2	5	5	5	4	4	1
1897:	2	8	8	8	3	4	3	8
1905:	1	2	3	3	3	8	10	1
1913:	2	4	5	7	2	5	3	2
1921:	5	3	4	4	4	8	3	11
1929:	4	3	3	0	4	10	4	5
1937:	1	5	3	7	0	8	5	2
1945:	11	7	6	7	6	5	3	3
1953:	6	12	1	7	4	8	6	9
1961:	5	4	2	5	3	4	5	5
1969:	8	3	4	5	1	2	5	8
1977:	6	1	5	4	2	7	5	2
1985:	5	6	5	6	10	6	5	1
1993:	7	8	5	10	6	2	7	4
2001:	6	6	6	4	5	5	2	3
2009:	5	8	7	3	4	7	4	6
2017:	2	3	3	1	3	8	4	0
2025:	3	6	2	0	1	5	5	6
2033:	4	4	5	5	3	5	7	4
2041:	1	2	3	4	2	3	5	4
2049:	8	7	7	6	5	8	1	4
2057:	7	2	2	8	5	8	5	7
2065:	2	5	5	8	4	6	1	4
2073:	7	5	10	6	5	6	1	6
2081:	4	7	5	4	5	2	1	4
2089:	5	6	0	0	2	4	5	7

2097:	5	7	5	4	5	2	3	5

Sample Title: GAF-13

Channel								
2105:	7	2	9	5	5	5	4	4
2113:	3	8	4	3	4	3	2	4
2121:	4	5	1	6	7	5	3	3
2129:	2	4	3	3	4	6	3	4
2137:	4	1	7	6	4	4	1	6
2145:	4	3	5	4	3	6	3	3
2153:	5	6	5	6	3	3	4	0
2161:	4	3	4	6	3	3	7	3
2169:	4	1	3	7	6	7	3	4
2177:	1	5	5	3	8	2	6	8
2185:	9	6	3	4	1	4	3	3
2193:	4	5	0	2	8	5	2	3
2201:	3	5	5	1	8	3	3	1
2209:	5	5	3	2	5	3	5	8
2217:	7	3	5	4	2	4	9	6
2225:	4	6	4	6	5	7	4	5
2233:	7	4	4	3	5	7	6	1
2241:	7	3	3	3	7	4	6	7
2249:	6	3	3	4	6	3	5	1
2257:	8	3	9	5	2	5	5	4
2265:	7	5	3	8	4	6	4	5
2273:	9	5	0	5	4	2	5	2
2281:	6	11	3	3	6	9	3	7
2289:	7	8	4	5	4	7	5	2
2297:	4	5	5	4	0	2	5	6
2305:	3	1	2	7	2	4	1	5
2313:	5	1	1	8	1	3	0	3
2321:	2	5	0	2	4	2	2	4
2329:	1	6	3	0	0	2	3	1
2337:	1	2	1	1	2	2	2	1
2345:	2	2	3	3	4	3	1	1
2353:	2	3	4	1	1	4	1	1
2361:	0	1	3	1	2	1	2	1
2369:	2	0	1	5	3	1	1	2
2377:	1	1	2	0	2	0	1	1
2385:	0	1	2	1	0	1	1	2
2393:	0	1	0	1	1	0	1	2
2401:	2	1	2	0	2	3	0	0
2409:	1	0	2	0	1	0	0	0
2417:	0	0	0	0	2	0	0	0
2425:	0	0	0	2	1	0	0	1
2433:	0	0	0	0	0	1	0	1
2441:	0	0	0	1	0	0	1	0
2449:	1	0	0	2	1	1	0	0
2457:	0	1	1	0	0	0	1	0
2465:	1	0	1	2	1	0	1	1
2473:	0	2	1	0	0	0	1	1
2481:	0	0	0	0	0	1	0	1
2489:	0	1	1	3	3	0	1	0
2497:	0	0	2	1	2	8	38	110
2505:	95	59	13	6	1	1	0	1
2513:	0	0	0	0	0	0	0	1
2521:	1	0	0	2	2	0	1	0

2529:	0	0	1	0	0	1	0	0

Sample Title: GAF-13

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

2961:	0	0	1	0	0	0	0	0

Sample Title: GAF-13

Channel								
2969:	0	0	0	0	0	0	0	0
2977:	0	0	1	0	0	0	1	1
2985:	0	0	0	0	0	0	0	0
2993:	0	0	0	0	1	0	0	0
3001:	0	0	0	0	0	0	1	0
3009:	0	0	0	0	0	0	0	0
3017:	0	0	0	0	0	0	0	0
3025:	0	1	0	0	0	0	0	1
3033:	0	0	0	0	0	0	1	0
3041:	0	0	0	0	0	0	0	0
3049:	0	0	0	0	1	0	0	0
3057:	0	0	0	0	0	0	0	0
3065:	0	0	0	0	0	0	0	0
3073:	0	0	0	0	0	0	0	0
3081:	0	0	0	0	0	0	0	1
3089:	0	0	0	0	0	0	0	0
3097:	0	0	0	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	0	0	0	1	0	0
3129:	0	1	0	0	1	0	0	0
3137:	1	0	0	0	0	0	0	0
3145:	0	0	0	1	0	0	0	0
3153:	0	0	0	0	1	0	0	0
3161:	0	0	0	1	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	0	0	0	0	0	0
3209:	0	0	0	0	0	0	0	0
3217:	0	0	0	0	0	0	0	0
3225:	0	0	0	0	0	0	0	0
3233:	0	0	0	0	0	0	0	0
3241:	0	0	0	0	0	0	0	0
3249:	0	0	0	0	0	0	0	0
3257:	1	0	0	0	0	0	0	0
3265:	0	0	0	0	0	1	0	0
3273:	0	0	0	0	0	0	0	0
3281:	0	0	0	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	1	0	0	0
3313:	0	0	0	1	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	0
3345:	0	0	0	0	1	0	0	0
3353:	0	0	0	0	0	0	0	0
3361:	0	0	0	0	0	0	0	0
3369:	0	0	0	0	0	0	1	0
3377:	0	0	0	0	0	0	0	0
3385:	0	0	0	0	0	0	0	0

3393:	0	0	0	0	0	0	0	0

Sample Title: GAF-13

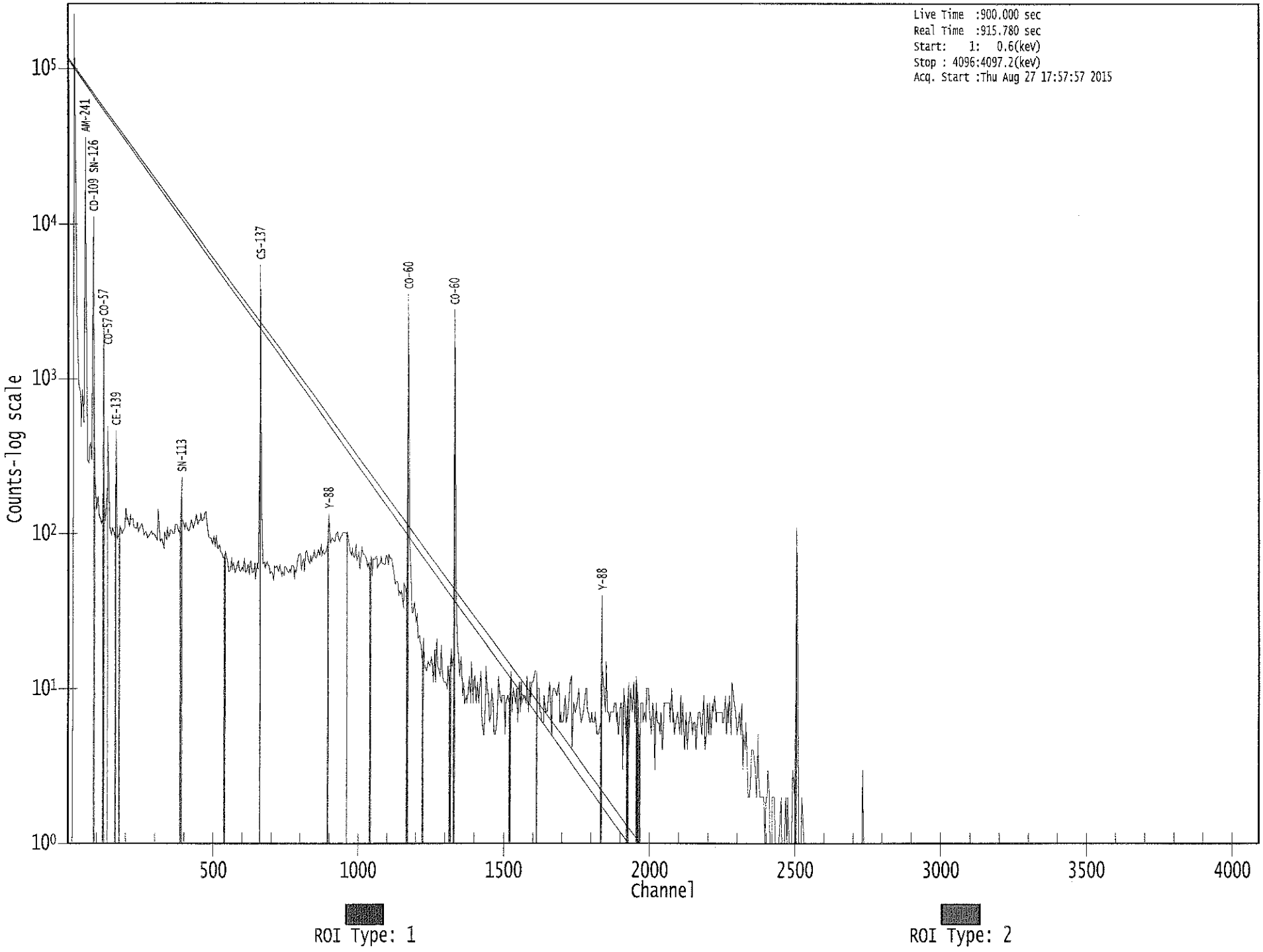
Channel								
3401:	0	0	0	0	0	0	0	0
3409:	1	0	0	0	0	0	1	0
3417:	1	0	0	0	0	0	0	0
3425:	1	0	0	0	0	0	0	0
3433:	0	0	0	1	0	0	0	0
3441:	0	0	0	0	0	0	0	0
3449:	0	0	0	0	0	0	0	0
3457:	0	0	0	0	0	0	0	0
3465:	0	0	0	0	0	0	0	0
3473:	0	0	0	0	0	0	0	0
3481:	0	0	0	0	0	0	0	0
3489:	0	0	0	0	0	0	0	0
3497:	0	0	1	0	0	0	0	0
3505:	0	0	0	0	0	0	0	0
3513:	0	0	0	0	0	0	0	0
3521:	0	0	0	0	0	0	0	0
3529:	0	0	0	0	0	0	1	0
3537:	0	0	0	0	0	0	0	0
3545:	0	0	0	0	0	0	0	0
3553:	0	0	1	0	0	0	0	0
3561:	0	0	0	0	0	0	0	0
3569:	0	0	0	0	0	0	0	0
3577:	0	0	0	0	0	0	0	0
3585:	0	0	0	0	0	0	0	0
3593:	0	0	0	0	0	1	0	0
3601:	0	0	0	0	0	0	0	0
3609:	0	0	0	0	0	0	0	0
3617:	0	0	0	0	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	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	0	0	0	0
3721:	0	0	0	1	0	0	0	0
3729:	0	0	0	1	0	0	0	0
3737:	0	0	0	0	0	0	0	0
3745:	0	0	0	0	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	1	0
3793:	0	0	0	0	0	0	0	0
3801:	0	0	0	0	0	0	0	0
3809:	1	0	0	0	0	1	0	0
3817:	0	0	0	0	0	0	0	1

3825:	0	0	0	0	0	0	0	0

Sample Title: GAF-13

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

0000026550.CNF



00031 4

Apex-Gamma

Analysis Report for 1508105-02
BLANK

8/28

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 1508105-02
Sample Description	: BLANK
Sample Type	: FILTER
Sample Size	: 1.000E+00 sample
Facility	: Countroom
Sample Taken On	: 8/27/2015 9:08:12AM
Acquisition Started	: 8/27/2015 6:07:09PM
Procedure	: GAF-14 pCi
Operator	: Administrator
Detector Name	: GE4
Geometry	: GAF-14
Live Time	: 14400.0 seconds
Real Time	: 14407.3 seconds
Dead Time	: 0.05 %
Peak Locate Threshold	: 2.50
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 15 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 10/25/2014
Efficiency Calibration Used Done On	: 10/25/2014
Efficiency Calibration Description	:
Sample Number	: 26551

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
8/31/15

Analysis Report for 1508105-02

BLANK

PEAK LOCATE REPORT

Peak Locate Performed on : 8/27/2015 10:07:15PM
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	35.36	34.61	0.0000	0.00
2	107.45	106.73	0.0000	0.00
3	201.77	201.09	0.0000	0.00
4	211.64	210.96	0.0000	0.00
5	233.01	232.34	0.0000	0.00
6	342.40	341.78	0.0000	0.00
7	660.41	659.94	0.0000	0.00
8	693.25	692.79	0.0000	0.00
9	996.03	995.74	0.0000	0.00
10	1053.60	1053.33	0.0000	0.00
11	1199.55	1199.37	0.0000	0.00
12	1212.31	1212.13	0.0000	0.00
13	1560.69	1560.73	0.0000	0.00
14	1665.48	1665.58	0.0000	0.00
15	1763.46	1763.62	0.0000	0.00
16	1793.92	1794.11	0.0000	0.00
17	2101.83	2102.22	0.0000	0.00
18	2414.38	2415.00	0.0000	0.00
19	2461.25	2461.90	0.0000	0.00
20	2603.77	2604.53	0.0000	0.00
21	2617.91	2618.69	0.0000	0.00
22	2649.66	2650.45	0.0000	0.00
23	2853.23	2854.19	0.0000	0.00
24	2882.12	2883.11	0.0000	0.00
25	3218.40	3219.67	0.0000	0.00
26	3915.65	3917.55	0.0000	0.00
27	4062.70	4064.75	0.0000	0.00
28	4069.95	4072.00	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1508105-02

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PEAK ANALYSIS REPORT

Peak Analysis Performed on : 8/27/2015 10:07:15PM

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	35.36	32 -	38	34.61	7.85E+01	67.28	7.59E+02	4.05
2	107.45	103 -	111	106.73	7.54E+01	67.05	6.49E+02	3.26
3	201.77	199 -	204	201.09	4.02E+01	40.21	2.92E+02	2.87
4	211.64	204 -	217	210.96	7.80E+01	81.31	7.00E+02	10.71
5	233.01	219 -	244	232.34	1.46E+02	138.24	1.24E+03	22.84
6	342.40	338 -	345	341.78	3.29E+01	40.45	2.48E+02	3.35
7	660.41	654 -	666	659.94	4.05E+01	37.84	1.49E+02	6.82
8	693.25	689 -	696	692.79	3.10E+01	25.53	8.80E+01	3.44
9	996.03	985 -	1006	995.74	7.92E+01	36.15	7.16E+01	18.52
10	1053.60	1049 -	1057	1053.33	1.66E+01	19.56	4.68E+01	3.11
11	1199.55	1196 -	1205	1199.37	1.20E+01	16.06	3.00E+01	3.58
12	1212.31	1206 -	1217	1212.13	1.84E+01	16.25	2.32E+01	7.08
13	1560.69	1557 -	1566	1560.73	1.12E+01	10.86	1.15E+01	5.93
14	1665.48	1660 -	1670	1665.58	1.90E+01	8.72	0.00E+00	7.10
15	1763.46	1759 -	1769	1763.62	9.27E+00	10.98	1.15E+01	2.80
16	1793.92	1790 -	1796	1794.11	6.71E+00	9.21	1.06E+01	1.14
17	2101.83	2098 -	2109	2102.22	8.33E+00	11.49	1.33E+01	5.81
18	2414.38	2411 -	2418	2415.00	6.13E+00	6.93	3.75E+00	1.11
19	2461.25	2457 -	2466	2461.90	9.63E+00	8.54	4.75E+00	7.82
20	2603.77	2601 -	2607	2604.53	4.33E+00	6.02	3.33E+00	1.64
21	2617.91	2614 -	2623	2618.69	1.60E+01	8.00	0.00E+00	2.97
22	2649.66	2647 -	2652	2650.45	4.33E+00	5.74	3.33E+00	1.66
23	2853.23	2849 -	2858	2854.19	6.72E+00	7.81	4.56E+00	2.85
24	2882.12	2879 -	2885	2883.11	5.07E+00	6.34	3.86E+00	1.69
25	3218.40	3216 -	3222	3219.67	9.00E+00	6.00	0.00E+00	1.45
26	3915.65	3914 -	3920	3917.55	5.00E+00	7.52	6.00E+00	2.11
27	4062.70	4059 -	4068	4064.75	1.13E+01	9.00	5.36E+00	4.60
28	4069.95	4069 -	4074	4072.00	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

Analysis Report for 1508105-02

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PEAK ANALYSIS REPORT

Peak Analysis Performed on : 8/27/2015 10:07:15PM

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	35.36	32 -	38	7.85E+01	67.28	7.59E+02	5.34E+01
2	107.45	103 -	111	7.54E+01	67.05	6.49E+02	5.32E+01
3	201.77	199 -	204	4.02E+01	40.21	2.92E+02	3.14E+01
4	211.64	204 -	217	7.80E+01	81.31	7.00E+02	6.52E+01
5	233.01	219 -	244	1.46E+02	138.24	1.24E+03	1.12E+02
6	342.40	338 -	345	3.29E+01	40.45	2.48E+02	3.19E+01
7	660.41	654 -	666	4.05E+01	37.84	1.49E+02	2.93E+01
8	693.25	689 -	696	3.10E+01	25.53	8.80E+01	1.89E+01
9	996.03	985 -	1006	7.92E+01	36.15	7.16E+01	2.59E+01
10	1053.60	1049 -	1057	1.66E+01	19.56	4.68E+01	1.46E+01
11	1199.55	1196 -	1205	1.20E+01	16.06	3.00E+01	1.19E+01
12	1212.31	1206 -	1217	1.84E+01	16.25	2.32E+01	1.13E+01
13	1560.69	1557 -	1566	1.12E+01	10.86	1.15E+01	7.03E+00
14	1665.48	1660 -	1670	1.90E+01	8.72	0.00E+00	0.00E+00
15	1763.46	1759 -	1769	9.27E+00	10.98	1.15E+01	7.51E+00
16	1793.92	1790 -	1796	6.71E+00	9.21	1.06E+01	6.26E+00
17	2101.83	2098 -	2109	8.33E+00	11.49	1.33E+01	8.17E+00
18	2414.38	2411 -	2418	6.13E+00	6.93	3.75E+00	3.98E+00
19	2461.25	2457 -	2466	9.63E+00	8.54	4.75E+00	4.83E+00
20	2603.77	2601 -	2607	4.33E+00	6.02	3.33E+00	3.58E+00
21	2617.91	2614 -	2623	1.60E+01	8.00	0.00E+00	0.00E+00
22	2649.66	2647 -	2652	4.33E+00	5.74	3.33E+00	3.25E+00
23	2853.23	2849 -	2858	6.72E+00	7.81	4.56E+00	4.80E+00
24	2882.12	2879 -	2885	5.07E+00	6.34	3.86E+00	3.67E+00
25	3218.40	3216 -	3222	9.00E+00	6.00	0.00E+00	0.00E+00
26	3915.65	3914 -	3920	5.00E+00	7.52	6.00E+00	4.97E+00
27	4062.70	4059 -	4068	1.13E+01	9.00	5.36E+00	4.91E+00
28	4069.95	4069 -	4074	5.00E+00	4.47	0.00E+00	0.00E+00

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

Analysis Report for 1508105-02

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PEAK WITH NID REPORT

Peak Analysis Performed on : 8/27/2015 10:07:15PM

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	35.36	32 -	38	34.61	7.85E+01	67.28	7.59E+02	I-125
2	107.45	103 -	111	106.73	7.54E+01	67.05	6.49E+02	.....
3	201.77	199 -	204	201.09	4.02E+01	40.21	2.92E+02	LU-176
4	211.64	204 -	217	210.96	7.80E+01	81.31	7.00E+02	.....
5	233.01	219 -	244	232.34	1.46E+02	138.24	1.24E+03	.....
6	342.40	338 -	345	341.78	3.29E+01	40.45	2.48E+02	.....
7	660.41	654 -	666	659.94	4.05E+01	37.84	1.49E+02	.....
8	693.25	689 -	696	692.79	3.10E+01	25.53	8.80E+01	.....
9	996.03	985 -	1006	995.74	7.92E+01	36.15	7.16E+01	EU-154
10	1053.60	1049 -	1057	1053.33	1.66E+01	19.56	4.68E+01	.....
11	1199.55	1196 -	1205	1199.37	1.20E+01	16.06	3.00E+01	.....
12	1212.31	1206 -	1217	1212.13	1.84E+01	16.25	2.32E+01	.....
13	1560.69	1557 -	1566	1560.73	1.12E+01	10.86	1.15E+01	.....
14	1665.48	1660 -	1670	1665.58	1.90E+01	8.72	0.00E+00	.....
15	1763.46	1759 -	1769	1763.62	9.27E+00	10.98	1.15E+01	.....
16	1793.92	1790 -	1796	1794.11	6.71E+00	9.21	1.06E+01	.....
17	2101.83	2098 -	2109	2102.22	8.33E+00	11.49	1.33E+01	.....
18	2414.38	2411 -	2418	2415.00	6.13E+00	6.93	3.75E+00	.....
19	2461.25	2457 -	2466	2461.90	9.63E+00	8.54	4.75E+00	.....
20	2603.77	2601 -	2607	2604.53	4.33E+00	6.02	3.33E+00	.....
21	2617.91	2614 -	2623	2618.69	1.60E+01	8.00	0.00E+00	.....
22	2649.66	2647 -	2652	2650.45	4.33E+00	5.74	3.33E+00	.....
23	2853.23	2849 -	2858	2854.19	6.72E+00	7.81	4.56E+00	.....
24	2882.12	2879 -	2885	2883.11	5.07E+00	6.34	3.86E+00	.....
25	3218.40	3216 -	3222	3219.67	9.00E+00	6.00	0.00E+00	.....
26	3915.65	3914 -	3920	3917.55	5.00E+00	7.52	6.00E+00	.....
27	4062.70	4059 -	4068	4064.75	1.13E+01	9.00	5.36E+00	.....
28	4069.95	4069 -	4074	4072.00	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

Analysis Report for 1508105-02

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PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 8/27/2015 10:07:15PM

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
1	35.36	7.85E+01	67.28	1.39E-01	1.59E-02
2	107.45	7.54E+01	67.05	2.02E-01	2.94E-02
3	201.77	4.02E+01	40.21	1.20E-01	2.43E-02
4	211.64	7.80E+01	81.31	1.14E-01	2.23E-02
5	233.01	1.46E+02	138.24	1.03E-01	1.79E-02
6	342.40	3.29E+01	40.45	6.51E-02	7.17E-03
7	660.41	4.05E+01	37.84	2.84E-02	5.48E-02
8	693.25	3.10E+01	25.53	2.67E-02	4.81E-02
9	996.03	7.92E+01	36.15	1.71E-02	2.67E-03
10	1053.60	1.66E+01	19.56	1.60E-02	2.39E-03
11	1199.55	1.20E+01	16.06	1.37E-02	1.94E-03
12	1212.31	1.84E+01	16.25	1.35E-02	1.99E-03
13	1560.69	1.12E+01	10.86	1.01E-02	1.71E-03
14	1665.48	1.90E+01	8.72	9.35E-03	1.33E-03
15	1763.46	9.27E+00	10.98	8.75E-03	9.83E-04
16	1793.92	6.71E+00	9.21	8.58E-03	8.74E-04
17	2101.83	8.33E+00	11.49	7.17E-03	7.23E-04
18	2414.38	6.13E+00	6.93	6.12E-03	7.23E-04
19	2461.25	9.63E+00	8.54	5.99E-03	7.23E-04
20	2603.77	4.33E+00	6.02	5.61E-03	7.23E-04
21	2617.91	1.60E+01	8.00	5.58E-03	7.23E-04
22	2649.66	4.33E+00	5.74	5.50E-03	7.23E-04
23	2853.23	6.72E+00	7.81	5.05E-03	7.23E-04
24	2882.12	5.07E+00	6.34	4.99E-03	7.23E-04
25	3218.40	9.00E+00	6.00	4.39E-03	7.23E-04
26	3915.65	5.00E+00	7.52	3.46E-03	7.23E-04
27	4062.70	1.13E+01	9.00	3.31E-03	7.23E-04
28	4069.95	5.00E+00	4.47	3.30E-03	7.23E-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 : 8/27/2015 10:07:15PM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000025969.CNF

Analysis Report for 1508105-02

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Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
1	35.36	7.85E+01	67.28			7.85E+01	6.73E+01
2	107.45	7.54E+01	67.05			7.54E+01	6.71E+01
3	201.77	4.02E+01	40.21			4.02E+01	4.02E+01
4	211.64	7.80E+01	81.31			7.80E+01	8.13E+01
5	233.01	1.46E+02	138.24			1.46E+02	1.38E+02
6	342.40	3.29E+01	40.45			3.29E+01	4.04E+01
7	660.41	4.05E+01	37.84			4.05E+01	3.78E+01
8	693.25	3.10E+01	25.53			3.10E+01	2.55E+01
9	996.03	7.92E+01	36.15			7.92E+01	3.62E+01
10	1053.60	1.66E+01	19.56	0.00E+00	0.00E+00	1.66E+01	1.96E+01
11	1199.55	1.20E+01	16.06			1.20E+01	1.61E+01
12	1212.31	1.84E+01	16.25			1.84E+01	1.62E+01
13	1560.69	1.12E+01	10.86			1.12E+01	1.09E+01
14	1665.48	1.90E+01	8.72			1.90E+01	8.72E+00
15	1763.46	9.27E+00	10.98	5.99E-01	3.99E+00	8.67E+00	1.17E+01
16	1793.92	6.71E+00	9.21			6.71E+00	9.21E+00
17	2101.83	8.33E+00	11.49			8.33E+00	1.15E+01
18	2414.38	6.13E+00	6.93			6.13E+00	6.93E+00
19	2461.25	9.63E+00	8.54			9.63E+00	8.54E+00
20	2603.77	4.33E+00	6.02			4.33E+00	6.02E+00
21	2617.91	1.60E+01	8.00			1.60E+01	8.00E+00
22	2649.66	4.33E+00	5.74			4.33E+00	5.74E+00
23	2853.23	6.72E+00	7.81			6.72E+00	7.81E+00
24	2882.12	5.07E+00	6.34			5.07E+00	6.34E+00
25	3218.40	9.00E+00	6.00			9.00E+00	6.00E+00
26	3915.65	5.00E+00	7.52			5.00E+00	7.52E+00
27	4062.70	1.13E+01	9.00			1.13E+01	9.00E+00
28	4069.95	5.00E+00	4.47			5.00E+00	4.47E+00

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

AREA CORRECTION REPORT
REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 8/27/2015 10:07:15PM

Ref. Peak Energy : 0.00 Reference Date :
Peak Ratio : 0.00 Uncertainty : 0.00
Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000025969.CNF

Corrected Area is: Original * Peak Ratio - Background

Analysis Report for 1508105-02

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Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
1	35.36	7.85E+01	67.28			7.85E+01	6.73E+01
2	107.45	7.54E+01	67.05			7.54E+01	6.71E+01
3	201.77	4.02E+01	40.21			4.02E+01	4.02E+01
4	211.64	7.80E+01	81.31			7.80E+01	8.13E+01
5	233.01	1.46E+02	138.24			1.46E+02	1.38E+02
6	342.40	3.29E+01	40.45			3.29E+01	4.04E+01
7	660.41	4.05E+01	37.84			4.05E+01	3.78E+01
8	693.25	3.10E+01	25.53			3.10E+01	2.55E+01
9	996.03	7.92E+01	36.15			7.92E+01	3.62E+01
10	1053.60	1.66E+01	19.56	0.00E+00	0.00E+00	1.66E+01	1.96E+01
11	1199.55	1.20E+01	16.06			1.20E+01	1.61E+01
12	1212.31	1.84E+01	16.25			1.84E+01	1.62E+01
13	1560.69	1.12E+01	10.86			1.12E+01	1.09E+01
14	1665.48	1.90E+01	8.72			1.90E+01	8.72E+00
15	1763.46	9.27E+00	10.98	5.99E-01	3.99E+00	8.67E+00	1.17E+01
16	1793.92	6.71E+00	9.21			6.71E+00	9.21E+00
17	2101.83	8.33E+00	11.49			8.33E+00	1.15E+01
18	2414.38	6.13E+00	6.93			6.13E+00	6.93E+00
19	2461.25	9.63E+00	8.54			9.63E+00	8.54E+00
20	2603.77	4.33E+00	6.02			4.33E+00	6.02E+00
21	2617.91	1.60E+01	8.00			1.60E+01	8.00E+00
22	2649.66	4.33E+00	5.74			4.33E+00	5.74E+00
23	2853.23	6.72E+00	7.81			6.72E+00	7.81E+00
24	2882.12	5.07E+00	6.34			5.07E+00	6.34E+00
25	3218.40	9.00E+00	6.00			9.00E+00	6.00E+00
26	3915.65	5.00E+00	7.52			5.00E+00	7.52E+00
27	4062.70	1.13E+01	9.00			1.13E+01	9.00E+00
28	4069.95	5.00E+00	4.47			5.00E+00	4.47E+00

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

NUCLIDE IDENTIFICATION REPORT

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

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/sample)	Activity Uncertainty
I-125	0.997	35.49	*	6.49	1.65E+01	1.42E+01

Analysis Report for 1508105-02

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* = Energy line found in the spectrum.
- = Manually added nuclide.
? = Manually edited nuclide.
Energy Tolerance : 1.000 keV
Nuclide confidence index threshold = 0.30
Errors quoted at 2.000sigma

UNIDENTIFIED PEAKS

Peak Locate Performed on : 8/27/2015 10:07:15PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
2	107.45	5.23655E-03	44.46		
3	201.77	2.79365E-03	49.98	Tol.	LU-176
4	211.64	5.41667E-03	52.12		
5	233.01	1.01556E-02	47.27		
6	342.40	2.28746E-03	61.40		
7	660.41	2.80978E-03	46.76		
8	693.25	2.15278E-03	41.18		
9	996.03	5.50121E-03	22.82	Tol.	EU-154
10	1053.60	1.15278E-03	58.93		
11	1199.55	8.33333E-04	66.93		
12	1212.31	1.27778E-03	44.15		
13	1560.69	7.80229E-04	48.34		
14	1665.48	1.31944E-03	22.94		
15	1763.46 *	6.01938E-04	67.37		
16	1793.92	4.65856E-04	68.62		
17	2101.83	5.78704E-04	68.93		
18	2414.38	4.25347E-04	56.56		
19	2461.25	6.68403E-04	44.38		
20	2603.77	3.00926E-04	69.47		
21	2617.91	1.11111E-03	25.00		
22	2649.66	3.00926E-04	66.28		
23	2853.23	4.66821E-04	58.09		
24	2882.12	3.52183E-04	62.55		
25	3218.40	6.25000E-04	33.33		
26	3915.65	3.47222E-04	75.17		
27	4062.70	7.86210E-04	39.75		
28	4069.95	3.47222E-04	44.72		

Analysis Report for 1508105-02

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

NUCLIDE IDENTIFICATION REPORT

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

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/sample)	Activity Uncertainty
I-125	0.99	35.49	*	6.49	1.65E+01	1.42E+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/sample)	Wt mean Activity Uncertainty	Comments
I-125	0.997	1.65E+01	1.42E+01	

Analysis Report for 1508105-02

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

Errors quoted at 2.000sigma

Analysis Report for 1508105-02

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UNIDENTIFIED PEAKS

Peak Locate Performed on : 8/27/2015 10:07:15PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
2	107.45	5.23655E-03	44.46		
3	201.77	2.79365E-03	49.98	Tol.	LU-176
4	211.64	5.41667E-03	52.12		
5	233.01	1.01556E-02	47.27		
6	342.40	2.28746E-03	61.40		
7	660.41	2.80978E-03	46.76		
8	693.25	2.15278E-03	41.18		
9	996.03	5.50121E-03	22.82	Tol.	EU-154
10	1053.60	1.15278E-03	58.93		
11	1199.55	8.33333E-04	66.93		
12	1212.31	1.27778E-03	44.15		
13	1560.69	7.80229E-04	48.34		
14	1665.48	1.31944E-03	22.94		
15	1763.46	6.01938E-04	67.37		
16	1793.92	4.65856E-04	68.62		
17	2101.83	5.78704E-04	68.93		
18	2414.38	4.25347E-04	56.56		
19	2461.25	6.68403E-04	44.38		
20	2603.77	3.00926E-04	69.47		
21	2617.91	1.11111E-03	25.00		
22	2649.66	3.00926E-04	66.28		
23	2853.23	4.66821E-04	58.09		
24	2882.12	3.52183E-04	62.55		
25	3218.40	6.25000E-04	33.33		
26	3915.65	3.47222E-04	75.17		
27	4062.70	7.86210E-04	39.75		
28	4069.95	3.47222E-04	44.72		

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

Analysis Report for 1508105-02

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NUCLIDE MDA REPORT

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

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/sample)	Nuclide MDA (pCi/sample)	Line MDA (pCi/sample)
+	BE-7	477.59	10.42	-8.31E+00	2.08E+01	2.08E+01
+	NA-22	1274.54	99.94	-1.13E+00	3.31E+00	3.31E+00
+	NA-24	1368.53	99.99	-7.01E-01	7.02E+00	7.02E+00
		2754.09	99.86	-2.41E+00		7.77E+00
+	AL-26	1808.65	99.76	-1.03E-01	3.85E+00	3.85E+00
+	K-40	1460.81	10.67	2.29E+01	4.28E+01	4.28E+01
+	AR-41	1293.64	99.16	-1.51E+02	1.73E+02	1.73E+02
+	TI-44	67.88	94.40	1.74E-01	9.29E-01	1.00E+00
		78.34	96.00	1.26E-03		9.29E-01
+	SC-46	889.25	99.98	-2.74E-01	3.57E+00	3.57E+00
		1120.51	99.99	-1.60E-01		3.88E+00
+	V-48	983.52	99.98	6.20E-01	3.78E+00	3.78E+00
		1312.10	97.50	2.72E-01		4.06E+00
+	CR-51	320.08	9.83	-1.98E+00	1.82E+01	1.82E+01
+	MN-54	834.83	99.97	-8.66E-01	3.32E+00	3.32E+00
+	CO-56	846.75	99.96	9.08E-01	3.19E+00	3.19E+00
		1037.75	14.03	1.37E-01		2.65E+01
		1238.25	67.00	-7.50E-01		5.73E+00
		1771.40	15.51	7.39E+00		2.53E+01
		2598.48	16.90	1.54E+00		2.79E+01
+	CO-57	122.06	85.51	-4.88E-01	1.07E+00	1.07E+00
		136.48	10.60	-1.41E+00		9.06E+00
+	CO-58	810.76	99.40	-1.47E+00	3.23E+00	3.23E+00
+	FE-59	1099.22	56.50	2.13E+00	6.99E+00	6.99E+00
		1291.56	43.20	1.43E+00		8.20E+00
+	CO-60	1173.22	100.00	1.44E-01	3.80E+00	3.98E+00
		1332.49	100.00	-2.11E-01		3.80E+00
+	ZN-65	1115.52	50.75	1.54E+00	8.50E+00	8.50E+00
+	GA-67	93.31	35.70	6.58E+00	3.22E+00	3.22E+00
		208.95	2.24	-1.95E+01		6.34E+01
		300.22	16.00	2.32E+00		1.11E+01
+	SE-75	121.11	16.70	-2.88E+00	1.63E+00	5.46E+00
		136.00	59.20	1.47E-01		1.63E+00
		264.65	59.80	-1.08E+00		2.47E+00
		279.53	25.20	-1.68E+00		6.33E+00
		400.65	11.40	-1.04E+01		1.78E+01
+	RB-82	776.52	13.00	5.43E+00	2.32E+01	2.32E+01
+	RB-83	520.41	46.00	-3.64E+00	5.07E+00	5.07E+00
		529.64	30.30	5.76E-01		7.63E+00
		552.65	16.40	-9.22E+00		1.53E+01

Analysis Report for 1508105-02

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	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/sample)	Nuclide MDA (pCi/sample)	Line MDA (pCi/sample)
+	KR-85	513.99		0.43	1.76E+03	8.53E+02	8.53E+02
+	SR-85	513.99		99.27	7.74E+00	3.75E+00	3.75E+00
+	Y-88	898.02		93.40	6.26E-02	3.59E+00	3.59E+00
		1836.01		99.38	1.21E+00		3.78E+00
+	NB-93M	16.57		9.43	3.76E+02	1.37E+02	1.37E+02
+	NB-94	702.63		100.00	8.24E-01	3.13E+00	3.13E+00
		871.10		100.00	-3.17E-01		3.58E+00
+	NB-95	765.79		99.81	4.93E-01	3.01E+00	3.01E+00
+	NB-95M	235.69		25.00	-5.49E-01	6.44E+00	6.44E+00
+	ZR-95	724.18		43.70	5.89E-01	5.34E+00	7.33E+00
		756.72		55.30	1.58E-01		5.34E+00
+	MO-99	181.06		6.20	-1.83E+01	2.19E+01	2.19E+01
		739.58		12.80	8.53E+00		2.78E+01
		778.00		4.50	8.01E-01		7.39E+01
+	RU-103	497.08		89.00	2.49E-02	2.59E+00	2.59E+00
+	RU-106	621.84		9.80	-4.55E-02	2.88E+01	2.88E+01
+	AG-108M	433.93		89.90	5.49E-01	2.36E+00	2.36E+00
		614.37		90.40	7.67E-01		3.34E+00
		722.95		90.50	1.68E+00		3.56E+00
+	CD-109	88.03		3.72	-3.23E+01	2.50E+01	2.50E+01
+	AG-110M	657.75		93.14	1.59E+00	3.22E+00	3.22E+00
		677.61		10.53	-5.95E+00		2.70E+01
		706.67		16.46	-6.40E+00		1.82E+01
		763.93		21.98	2.24E+00		1.37E+01
		884.67		71.63	1.78E-01		5.10E+00
		1384.27		23.94	5.94E+00		1.63E+01
+	CD-113M	263.70		0.02	-3.65E+03	6.40E+03	6.40E+03
+	SN-113	255.12		1.93	-5.11E+00	3.10E+00	7.78E+01
		391.69		64.90	-4.98E-01		3.10E+00
+	TE123M	159.00		84.10	-5.13E-01	1.24E+00	1.24E+00
+	SB-124	602.71		97.87	-9.95E-01	3.07E+00	3.07E+00
		645.85		7.26	1.19E+01		3.89E+01
		722.78		11.10	2.66E+01		3.04E+01
		1691.02		49.00	3.82E+00		1.07E+01
+	I-125	35.49	*	6.49	1.65E+01	2.29E+01	2.29E+01
+	SB-125	176.33		6.89	2.23E+00	7.27E+00	1.70E+01
		427.89		29.33	7.40E-01		7.27E+00
		463.38		10.35	-2.05E+00		2.13E+01
		600.56		17.80	1.71E+00		1.72E+01
		635.90		11.32	3.07E+00		2.48E+01
+	SB-126	414.70		83.30	-6.16E-01	2.51E+00	2.51E+00
		666.33		99.60	-7.06E-01		2.77E+00
		695.00		99.60	3.09E-01		3.45E+00
		720.50		53.80	-3.92E+00		5.61E+00
+	SN-126	87.57		37.00	-3.24E+00	2.51E+00	2.51E+00
+	SB-127	473.00		25.00	1.18E+00	8.40E+00	9.42E+00
		685.20		35.70	-6.88E-01		8.40E+00
		783.80		14.70	-6.04E-01		2.09E+01

Analysis Report for 1508105-02

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/sample)	Nuclide MDA (pCi/sample)	Line MDA (pCi/sample)
+	I-129	29.78	57.00	-3.13E+00	3.87E+00	3.87E+00
		33.60	13.20	-1.63E+00		1.31E+01
		39.58	7.52	-1.01E+01		1.70E+01
+	I-131	284.30	6.05	7.52E+00	2.40E+00	2.89E+01
		364.48	81.20	9.31E-01		2.40E+00
		636.97	7.26	2.48E+00		4.03E+01
		722.89	1.80	1.70E+02		1.94E+02
+	TE-132	49.72	13.10	6.79E+00	1.68E+00	9.12E+00
		228.16	88.00	-1.08E+00		1.68E+00
+	BA-133	81.00	33.00	9.87E-01	2.73E+00	2.73E+00
		302.84	17.80	-3.20E+00		8.80E+00
		356.01	60.00	4.35E-01		3.06E+00
+	I-133	529.87	86.30	2.90E-01	3.85E+00	3.85E+00
+	XE-133	81.00	38.00	9.10E-01	2.52E+00	2.52E+00
+	CS-134	563.23	8.38	-4.89E+00	3.08E+00	3.08E+01
		569.32	15.43	-3.93E+00		1.55E+01
		604.70	97.60	-1.17E+00		3.08E+00
		795.84	85.40	1.49E+00		3.93E+00
		801.93	8.73	-5.66E+00		3.90E+01
+	CS-135	268.24	16.00	1.31E+00	9.61E+00	9.61E+00
+	I-135	1131.51	22.50	-2.02E+00	4.14E+01	5.40E+01
		1260.41	28.60	-2.12E+01		4.14E+01
		1678.03	9.54	-1.93E+01		1.11E+02
+	CS-136	153.22	7.46	5.37E+00	3.21E+00	1.40E+01
		163.89	4.61	2.98E+00		2.46E+01
		176.55	13.56	1.16E+00		8.84E+00
		273.65	12.66	5.12E+00		1.31E+01
		340.57	48.50	2.84E-01		4.00E+00
		818.50	99.70	3.24E-02		3.21E+00
		1048.07	79.60	-9.64E-01		4.36E+00
		1235.34	19.70	-5.58E-01		1.95E+01
+	CS-137	661.65	85.12	2.57E+00	3.64E+00	3.64E+00
+	LA-138	788.74	34.00	-5.14E+00	6.89E+00	8.31E+00
		1435.80	66.00	1.98E+00		6.89E+00
+	CE-139	165.85	80.35	3.06E-02	1.39E+00	1.39E+00
+	BA-140	162.64	6.70	4.64E+00	9.62E+00	1.68E+01
		304.84	4.50	-6.05E-01		3.66E+01
		423.70	3.20	-1.34E+00		6.62E+01
		437.55	2.00	-4.42E+01		1.08E+02
		537.32	25.00	-5.93E-01		9.62E+00
+	LA-140	328.77	20.50	3.20E+00	5.14E+00	9.07E+00
		487.03	45.50	4.33E-01		5.25E+00
		815.85	23.50	3.49E+00		1.41E+01
		1596.49	95.49	1.39E+00		5.14E+00
+	CE-141	145.44	48.40	-8.43E-02	2.03E+00	2.03E+00
+	CE-143	57.36	11.80	-1.59E+01	4.89E+00	1.00E+01
		293.26	42.00	4.03E-01		4.89E+00
		664.55	5.20	-2.77E+00		7.06E+01
+	CE-144	133.54	10.80	-1.60E+00	8.74E+00	8.74E+00

Analysis Report for 1508105-02

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/sample)	Nuclide MDA (pCi/sample)	Line MDA (pCi/sample)
+	PM-144	476.78	42.00	-2.84E+00	2.96E+00	5.08E+00
		618.01	98.60	1.10E+00		2.96E+00
		696.49	99.49	5.84E-01		3.33E+00
+	PM-145	36.85	21.70	-3.14E-01	3.57E+00	6.68E+00
		37.36	39.70	-9.46E-02		3.57E+00
		42.30	15.10	2.43E+00		8.07E+00
		72.40	2.31	-1.49E+01		3.76E+01
+	PM-146	453.90	39.94	2.21E+00	5.86E+00	5.86E+00
		735.90	14.01	7.65E+00		2.29E+01
		747.13	13.10	-5.02E+00		2.13E+01
+	ND-147	91.11	28.90	4.41E+00	3.66E+00	3.66E+00
		531.02	13.10	3.57E+00		1.80E+01
+	PM-149	285.90	3.10	7.83E+00	6.26E+01	6.26E+01
+	EU-152	121.78	20.50	-2.03E+00	4.43E+00	4.43E+00
		244.69	5.40	4.08E-01		2.84E+01
		344.27	19.13	-1.33E+00		9.85E+00
		778.89	9.20	3.50E-01		3.23E+01
		964.01	10.40	3.37E+00		3.26E+01
		1085.78	7.22	-2.05E+01		4.38E+01
		1112.02	9.60	2.08E-01		4.47E+01
		1407.95	14.94	9.37E+00		2.93E+01
+	GD-153	97.43	31.30	-2.56E+00	2.86E+00	2.86E+00
		103.18	22.20	-1.16E+00		3.75E+00
+	EU-154	123.07	40.50	-3.52E-01	2.26E+00	2.26E+00
		723.30	19.70	7.72E+00		1.64E+01
		873.19	11.50	2.02E+00		3.22E+01
		996.32	10.30	-1.56E+01		3.69E+01
		1004.76	17.90	-2.06E+00		1.85E+01
		1274.45	35.50	-3.19E+00		9.31E+00
+	EU-155	86.50	30.90	-7.13E+00	2.87E+00	2.87E+00
		105.30	20.70	-7.67E-01		4.13E+00
+	EU-156	811.77	10.40	-1.04E+00	3.22E+01	3.22E+01
		1153.47	7.20	3.71E+00		6.03E+01
		1230.71	8.90	-6.48E+00		4.28E+01
+	HO-166M	184.41	72.60	1.43E+00	1.80E+00	1.80E+00
		280.45	29.60	-1.56E+00		5.39E+00
		410.94	11.10	4.41E+00		1.94E+01
		711.69	54.10	4.47E-01		5.80E+00
+	TM-171	66.72	0.14	5.27E+02	6.93E+02	6.93E+02
+	HF-172	81.75	4.52	1.05E+01	8.26E+00	2.00E+01
		125.81	11.30	7.42E-01		8.26E+00
+	LU-172	181.53	20.60	-1.44E+00	5.72E+00	6.30E+00
		810.06	16.63	-9.15E+00		2.02E+01
		912.12	15.25	5.49E+00		2.44E+01
		1093.66	62.50	-2.09E+00		5.72E+00
+	LU-173	100.72	5.24	-8.89E+00	7.48E+00	1.57E+01
		272.11	21.20	1.96E+00		7.48E+00
+	HF-175	343.40	84.00	-1.51E-01	2.21E+00	2.21E+00
+	LU-176	88.34	13.30	4.24E+00	1.48E+00	7.44E+00

Analysis Report for 1508105-02

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/sample)	Nuclide MDA (pCi/sample)	Line MDA (pCi/sample)
	LU-176	201.83	86.00	1.71E-01	1.48E+00	1.48E+00
		306.78	94.00	3.08E-03		1.74E+00
+	TA-182	67.75	41.20	3.99E-01	2.30E+00	2.30E+00
		1121.30	34.90	-4.38E+00		1.05E+01
		1189.05	16.23	-6.44E-02		2.21E+01
		1221.41	26.98	1.39E+00		1.33E+01
		1231.02	11.44	-4.95E+00		3.27E+01
+	IR-192	308.46	29.68	-3.94E+00	4.51E+00	5.53E+00
		468.07	48.10	-4.92E-01		4.51E+00
+	HG-203	279.19	77.30	-5.48E-01	2.07E+00	2.07E+00
+	BI-207	569.67	97.72	-6.21E-01	2.46E+00	2.46E+00
		1063.62	74.90	3.11E-03		4.73E+00
+	TL-208	583.14	30.22	5.67E-01	8.61E+00	8.61E+00
		860.37	4.48	6.58E+01		8.12E+01
		2614.66	35.85	1.72E+00		2.05E+01
+	BI-210M	262.00	45.00	-1.09E-01	3.29E+00	3.29E+00
		300.00	23.00	2.95E-01		6.94E+00
+	PB-210	46.50	4.25	1.94E+01	2.69E+01	2.69E+01
+	PB-211	404.84	2.90	2.30E+00	7.31E+01	7.31E+01
		831.96	2.90	-2.09E+00		1.19E+02
+	BI-212	727.17	11.80	1.97E+00	2.68E+01	2.68E+01
		1620.62	2.75	-8.00E+01		1.42E+02
+	PB-212	238.63	44.60	1.34E+00	3.44E+00	3.44E+00
		300.09	3.41	1.99E+00		4.68E+01
+	BI-214	609.31	46.30	1.77E+00	6.66E+00	6.66E+00
		1120.29	15.10	-1.05E+00		2.56E+01
		1764.49	15.80	1.49E+01		2.97E+01
		2204.22	4.98	1.80E+01		1.04E+02
+	PB-214	295.21	19.19	4.86E-01	5.11E+00	8.46E+00
		351.92	37.19	3.75E+00		5.11E+00
+	RN-219	401.80	6.50	-8.28E+00	3.20E+01	3.20E+01
+	RA-223	323.87	3.88	-1.18E+01	4.47E+01	4.47E+01
+	RA-224	240.98	3.95	4.35E+00	3.87E+01	3.87E+01
+	RA-225	40.00	31.00	-2.48E+00	4.17E+00	4.17E+00
+	RA-226	186.21	3.28	3.45E+01	4.02E+01	4.02E+01
+	TH-227	50.10	8.40	9.56E+00	1.28E+01	1.28E+01
		236.00	11.50	-1.10E+00		1.29E+01
		256.20	6.30	2.65E+00		2.36E+01
+	AC-228	338.32	11.40	1.44E+00	1.28E+01	1.63E+01
		911.07	27.70	3.79E+00		1.28E+01
		969.11	16.60	-3.96E+00		1.83E+01
+	TH-230	48.44	16.90	5.24E+00	6.57E+00	6.57E+00
		62.85	4.60	3.12E+01		2.21E+01
		67.67	0.37	4.43E+01		2.55E+02
+	PA-231	283.67	1.60	2.04E+00	6.81E+01	1.04E+02
		302.67	2.30	-2.47E+01		6.81E+01
+	TH-231	25.64	14.70	8.97E+00	1.39E+01	2.39E+01
		84.21	6.40	-9.85E-01		1.39E+01

Analysis Report for 1508105-02

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/sample)	Nuclide MDA (pCi/sample)	Line MDA (pCi/sample)
+	PA-233	311.98	38.60	2.29E+00	4.70E+00	4.70E+00
+	PA-234	131.20	20.40	9.84E-01	4.68E+00	4.68E+00
		733.99	8.80	2.28E+01		3.71E+01
		946.00	12.00	-8.59E-01		2.70E+01
+	PA-234M	1001.03	0.92	1.77E+02	4.07E+02	4.07E+02
+	TH-234	63.29	3.80	3.51E+01	2.65E+01	2.65E+01
+	U-235	143.76	10.50	2.49E-02	9.30E+00	9.30E+00
		163.35	4.70	2.85E+00		2.35E+01
		205.31	4.70	9.46E+00		2.76E+01
+	NP-237	86.50	12.60	-1.75E+01	7.04E+00	7.04E+00
+	NP-239	106.10	22.70	-8.03E-01	4.32E+00	4.32E+00
		228.18	10.70	-1.34E+01		1.39E+01
		277.60	14.10	7.31E-01		1.29E+01
+	AM-241	59.54	35.90	2.27E+00	2.82E+00	2.82E+00
+	AM-243	74.67	66.00	1.38E-01	1.33E+00	1.33E+00
+	CM-243	209.75	3.29	-5.50E+00	1.13E+01	3.97E+01
		228.14	10.60	-8.11E+00		1.26E+01
		277.60	14.00	6.43E-01		1.13E+01

+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction
? = CAUTION: MDA value is inconsistent with Currie MDA at 95% confidence level

NUCLIDE MDA REPORT

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

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/sample)	Nuclide MDA (pCi/sample)	Activity (pCi/sample)	Dec. Level (pCi/sample)
BE-7	477.59	10.42	2.08E+01	2.08E+01	-8.31E+00	9.84E+00
NA-22	1274.54	99.94	3.31E+00	3.31E+00	-1.13E+00	1.45E+00
NA-24	1368.53	99.99	7.02E+00	7.02E+00	-7.01E-01	3.15E+00
	2754.09	99.86	7.77E+00		-2.41E+00	3.08E+00

Analysis Report for 1508105-02

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/sample)	Nuclide MDA (pCi/sample)	Activity (pCi/sample)	Dec. Level (pCi/sample)
AL-26	1808.65	99.76	3.85E+00	3.85E+00	-1.03E-01	1.63E+00
K-40	1460.81	10.67	4.28E+01	4.28E+01	2.29E+01	1.92E+01
AR-41	1293.64	99.16	1.73E+02	1.73E+02	-1.51E+02	7.44E+01
TI-44	67.88	94.40	1.00E+00	9.29E-01	1.74E-01	4.88E-01
	78.34	96.00	9.29E-01		1.26E-03	4.53E-01
SC-46	889.25	99.98	3.57E+00	3.57E+00	-2.74E-01	1.66E+00
	1120.51	99.99	3.88E+00		-1.60E-01	1.77E+00
V-48	983.52	99.98	3.78E+00	3.78E+00	6.20E-01	1.74E+00
	1312.10	97.50	4.06E+00		2.72E-01	1.82E+00
CR-51	320.08	9.83	1.82E+01	1.82E+01	-1.98E+00	8.75E+00
MN-54	834.83	99.97	3.32E+00	3.32E+00	-8.66E-01	1.54E+00
CO-56	846.75	99.96	3.19E+00	3.19E+00	9.08E-01	1.47E+00
	1037.75	14.03	2.65E+01		1.37E-01	1.21E+01
	1238.25	67.00	5.73E+00		-7.50E-01	2.58E+00
	1771.40	15.51	2.53E+01		7.39E+00	1.08E+01
	2598.48	16.90	2.79E+01		1.54E+00	1.13E+01
CO-57	122.06	85.51	1.07E+00	1.07E+00	-4.88E-01	5.17E-01
	136.48	10.60	9.06E+00		-1.41E+00	4.39E+00
CO-58	810.76	99.40	3.23E+00	3.23E+00	-1.47E+00	1.50E+00
FE-59	1099.22	56.50	6.99E+00	6.99E+00	2.13E+00	3.20E+00
	1291.56	43.20	8.20E+00		1.43E+00	3.63E+00
CO-60	1173.22	100.00	3.98E+00	3.80E+00	1.44E-01	1.81E+00
	1332.49	100.00	3.80E+00		-2.11E-01	1.69E+00
ZN-65	1115.52	50.75	8.50E+00	8.50E+00	1.54E+00	3.91E+00
GA-67	93.31	35.70	3.22E+00	3.22E+00	6.58E+00	1.57E+00
	208.95	2.24	6.34E+01		-1.95E+01	3.06E+01
	300.22	16.00	1.11E+01		2.32E+00	5.32E+00
SE-75	121.11	16.70	5.46E+00	1.63E+00	-2.88E+00	2.65E+00
	136.00	59.20	1.63E+00		1.47E-01	7.88E-01
	264.65	59.80	2.47E+00		-1.08E+00	1.18E+00
	279.53	25.20	6.33E+00		-1.68E+00	3.04E+00
	400.65	11.40	1.78E+01		-1.04E+01	8.46E+00
RB-82	776.52	13.00	2.32E+01	2.32E+01	5.43E+00	1.08E+01
RB-83	520.41	46.00	5.07E+00	5.07E+00	-3.64E+00	2.39E+00
	529.64	30.30	7.63E+00		5.76E-01	3.59E+00
	552.65	16.40	1.53E+01		-9.22E+00	7.20E+00
KR-85	513.99	0.43	8.53E+02	8.53E+02	1.76E+03	4.12E+02
SR-85	513.99	99.27	3.75E+00	3.75E+00	7.74E+00	1.81E+00
Y-88	898.02	93.40	3.59E+00	3.59E+00	6.26E-02	1.66E+00
	1836.01	99.38	3.78E+00		1.21E+00	1.58E+00
NB-93M	16.57	9.43	1.37E+02	1.37E+02	3.76E+02	6.73E+01
NB-94	702.63	100.00	3.13E+00	3.13E+00	8.24E-01	1.47E+00
	871.10	100.00	3.58E+00		-3.17E-01	1.66E+00
NB-95	765.79	99.81	3.01E+00	3.01E+00	4.93E-01	1.40E+00
NB-95M	235.69	25.00	6.44E+00	6.44E+00	-5.49E-01	3.11E+00
ZR-95	724.18	43.70	7.33E+00	5.34E+00	5.89E-01	3.43E+00
	756.72	55.30	5.34E+00		1.58E-01	2.48E+00
MO-99	181.06	6.20	2.19E+01	2.19E+01	-1.83E+01	1.06E+01
	739.58	12.80	2.78E+01		8.53E+00	1.30E+01
	778.00	4.50	7.39E+01		8.01E-01	3.42E+01
RU-103	497.08	89.00	2.59E+00	2.59E+00	2.49E-02	1.23E+00
RU-106	621.84	9.80	2.88E+01	2.88E+01	-4.55E-02	1.36E+01
AG-108M	433.93	89.90	2.36E+00	2.36E+00	5.49E-01	1.12E+00

Analysis Report for 1508105-02

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	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/sample)	Nuclide MDA (pCi/sample)	Activity (pCi/sample)	Dec. Level (pCi/sample)
	AG-108M	614.37		90.40	3.34E+00	2.36E+00	7.67E-01	1.58E+00
		722.95		90.50	3.56E+00		1.68E+00	1.67E+00
	CD-109	88.03		3.72	2.50E+01	2.50E+01	-3.23E+01	1.22E+01
	AG-110M	657.75		93.14	3.22E+00	3.22E+00	1.59E+00	1.51E+00
		677.61		10.53	2.70E+01		-5.95E+00	1.26E+01
		706.67		16.46	1.82E+01		-6.40E+00	8.51E+00
		763.93		21.98	1.37E+01		2.24E+00	6.34E+00
		884.67		71.63	5.10E+00		1.78E-01	2.37E+00
		1384.27		23.94	1.63E+01		5.94E+00	7.23E+00
	CD-113M	263.70		0.02	6.40E+03	6.40E+03	-3.65E+03	3.07E+03
	SN-113	255.12		1.93	7.78E+01	3.10E+00	-5.11E+00	3.75E+01
		391.69		64.90	3.10E+00		-4.98E-01	1.48E+00
	TE123M	159.00		84.10	1.24E+00	1.24E+00	-5.13E-01	6.00E-01
	SB-124	602.71		97.87	3.07E+00	3.07E+00	-9.95E-01	1.45E+00
		645.85		7.26	3.89E+01		1.19E+01	1.83E+01
		722.78		11.10	3.04E+01		2.66E+01	1.43E+01
		1691.02		49.00	1.07E+01		3.82E+00	4.78E+00
+	I-125	35.49	*	6.49	2.29E+01	2.29E+01	1.65E+01	1.12E+01
	SB-125	176.33		6.89	1.70E+01	7.27E+00	2.23E+00	8.22E+00
		427.89		29.33	7.27E+00		7.40E-01	3.46E+00
		463.38		10.35	2.13E+01		-2.05E+00	1.01E+01
		600.56		17.80	1.72E+01		1.71E+00	8.17E+00
		635.90		11.32	2.48E+01		3.07E+00	1.16E+01
	SB-126	414.70		83.30	2.51E+00	2.51E+00	-6.16E-01	1.19E+00
		666.33		99.60	2.77E+00		-7.06E-01	1.29E+00
		695.00		99.60	3.45E+00		3.09E-01	1.63E+00
		720.50		53.80	5.61E+00		-3.92E+00	2.61E+00
	SN-126	87.57		37.00	2.51E+00	2.51E+00	-3.24E+00	1.22E+00
	SB-127	473.00		25.00	9.42E+00	8.40E+00	1.18E+00	4.46E+00
		685.20		35.70	8.40E+00		-6.88E-01	3.91E+00
		783.80		14.70	2.09E+01		-6.04E-01	9.63E+00
	I-129	29.78		57.00	3.87E+00	3.87E+00	-3.13E+00	1.89E+00
		33.60		13.20	1.31E+01		-1.63E+00	6.40E+00
		39.58		7.52	1.70E+01		-1.01E+01	8.30E+00
	I-131	284.30		6.05	2.89E+01	2.40E+00	7.52E+00	1.39E+01
		364.48		81.20	2.40E+00		9.31E-01	1.14E+00
		636.97		7.26	4.03E+01		2.48E+00	1.89E+01
		722.89		1.80	1.94E+02		1.70E+02	9.11E+01
	TE-132	49.72		13.10	9.12E+00	1.68E+00	6.79E+00	4.45E+00
		228.16		88.00	1.68E+00		-1.08E+00	8.08E-01
	BA-133	81.00		33.00	2.73E+00	2.73E+00	9.87E-01	1.33E+00
		302.84		17.80	8.80E+00		-3.20E+00	4.21E+00
		356.01		60.00	3.06E+00		4.35E-01	1.46E+00
	I-133	529.87		86.30	3.85E+00	3.85E+00	2.90E-01	1.81E+00
	XE-133	81.00		38.00	2.52E+00	2.52E+00	9.10E-01	1.23E+00
	CS-134	563.23		8.38	3.08E+01	3.08E+00	-4.89E+00	1.45E+01
		569.32		15.43	1.55E+01		-3.93E+00	7.29E+00
		604.70		97.60	3.08E+00		-1.17E+00	1.46E+00
		795.84		85.40	3.93E+00		1.49E+00	1.83E+00
		801.93		8.73	3.90E+01		-5.66E+00	1.82E+01
	CS-135	268.24		16.00	9.61E+00	9.61E+00	1.31E+00	4.63E+00
	I-135	1131.51		22.50	5.40E+01	4.14E+01	-2.02E+00	2.46E+01
		1260.41		28.60	4.14E+01		-2.12E+01	1.86E+01

Analysis Report for 1508105-02

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/sample)	Nuclide MDA (pCi/sample)	Activity (pCi/sample)	Dec. Level (pCi/sample)
I-135	1678.03	9.54	1.11E+02	4.14E+01	-1.93E+01	4.65E+01
CS-136	153.22	7.46	1.40E+01	3.21E+00	5.37E+00	6.78E+00
	163.89	4.61	2.46E+01		2.98E+00	1.19E+01
	176.55	13.56	8.84E+00		1.16E+00	4.28E+00
	273.65	12.66	1.31E+01		5.12E+00	6.30E+00
	340.57	48.50	4.00E+00		2.84E-01	1.92E+00
	818.50	99.70	3.21E+00		3.24E-02	1.49E+00
	1048.07	79.60	4.36E+00		-9.64E-01	1.98E+00
	1235.34	19.70	1.95E+01		-5.58E-01	8.75E+00
CS-137	661.65	85.12	3.64E+00	3.64E+00	2.57E+00	1.72E+00
LA-138	788.74	34.00	8.31E+00	6.89E+00	-5.14E+00	3.82E+00
	1435.80	66.00	6.89E+00		1.98E+00	3.10E+00
CE-139	165.85	80.35	1.39E+00	1.39E+00	3.06E-02	6.72E-01
BA-140	162.64	6.70	1.68E+01	9.62E+00	4.64E+00	8.11E+00
	304.84	4.50	3.66E+01		-6.05E-01	1.75E+01
	423.70	3.20	6.62E+01		-1.34E+00	3.15E+01
	437.55	2.00	1.08E+02		-4.42E+01	5.12E+01
	537.32	25.00	9.62E+00		-5.93E-01	4.53E+00
LA-140	328.77	20.50	9.07E+00	5.14E+00	3.20E+00	4.35E+00
	487.03	45.50	5.25E+00		4.33E-01	2.49E+00
	815.85	23.50	1.41E+01		3.49E+00	6.53E+00
	1596.49	95.49	5.14E+00		1.39E+00	2.29E+00
CE-141	145.44	48.40	2.03E+00	2.03E+00	-8.43E-02	9.83E-01
CE-143	57.36	11.80	1.00E+01	4.89E+00	-1.59E+01	4.88E+00
	293.26	42.00	4.89E+00		4.03E-01	2.35E+00
	664.55	5.20	7.06E+01		-2.77E+00	3.31E+01
CE-144	133.54	10.80	8.74E+00	8.74E+00	-1.60E+00	4.24E+00
PM-144	476.78	42.00	5.08E+00	2.96E+00	-2.84E+00	2.40E+00
	618.01	98.60	2.96E+00		1.10E+00	1.40E+00
	696.49	99.49	3.33E+00		5.84E-01	1.57E+00
PM-145	36.85	21.70	6.68E+00	3.57E+00	-3.14E-01	3.26E+00
	37.36	39.70	3.57E+00		-9.46E-02	1.74E+00
	42.30	15.10	8.07E+00		2.43E+00	3.94E+00
	72.40	2.31	3.76E+01		-1.49E+01	1.83E+01
PM-146	453.90	39.94	5.86E+00	5.86E+00	2.21E+00	2.79E+00
	735.90	14.01	2.29E+01		7.65E+00	1.07E+01
	747.13	13.10	2.13E+01		-5.02E+00	9.87E+00
ND-147	91.11	28.90	3.66E+00	3.66E+00	4.41E+00	1.79E+00
	531.02	13.10	1.80E+01		3.57E+00	8.44E+00
PM-149	285.90	3.10	6.26E+01	6.26E+01	7.83E+00	3.01E+01
EU-152	121.78	20.50	4.43E+00	4.43E+00	-2.03E+00	2.15E+00
	244.69	5.40	2.84E+01		4.08E-01	1.37E+01
	344.27	19.13	9.85E+00		-1.33E+00	4.72E+00
	778.89	9.20	3.23E+01		3.50E-01	1.49E+01
	964.01	10.40	3.26E+01		3.37E+00	1.49E+01
	1085.78	7.22	4.38E+01		-2.05E+01	1.96E+01
	1112.02	9.60	4.47E+01		2.08E-01	2.06E+01
	1407.95	14.94	2.93E+01		9.37E+00	1.31E+01
GD-153	97.43	31.30	2.86E+00	2.86E+00	-2.56E+00	1.39E+00
	103.18	22.20	3.75E+00		-1.16E+00	1.82E+00
EU-154	123.07	40.50	2.26E+00	2.26E+00	-3.52E-01	1.10E+00
	723.30	19.70	1.64E+01		7.72E+00	7.67E+00
	873.19	11.50	3.22E+01		2.02E+00	1.50E+01

Analysis Report for 1508105-02

BLANK

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/sample)	Nuclide MDA (pCi/sample)	Activity (pCi/sample)	Dec. Level (pCi/sample)
EU-154	996.32	10.30	3.69E+01	2.26E+00	-1.56E+01	1.70E+01
	1004.76	17.90	1.85E+01		-2.06E+00	8.40E+00
	1274.45	35.50	9.31E+00		-3.19E+00	4.09E+00
EU-155	86.50	30.90	2.87E+00	2.87E+00	-7.13E+00	1.40E+00
	105.30	20.70	4.13E+00		-7.67E-01	2.00E+00
EU-156	811.77	10.40	3.22E+01	3.22E+01	-1.04E+00	1.50E+01
	1153.47	7.20	6.03E+01		3.71E+00	2.76E+01
	1230.71	8.90	4.28E+01		-6.48E+00	1.92E+01
HO-166M	184.41	72.60	1.80E+00	1.80E+00	1.43E+00	8.74E-01
	280.45	29.60	5.39E+00		-1.56E+00	2.59E+00
	410.94	11.10	1.94E+01		4.41E+00	9.26E+00
	711.69	54.10	5.80E+00		4.47E-01	2.72E+00
TM-171	66.72	0.14	6.93E+02	6.93E+02	5.27E+02	3.38E+02
HF-172	81.75	4.52	2.00E+01	8.26E+00	1.05E+01	9.73E+00
	125.81	11.30	8.26E+00		7.42E-01	4.01E+00
LU-172	181.53	20.60	6.30E+00	5.72E+00	-1.44E+00	3.05E+00
	810.06	16.63	2.02E+01		-9.15E+00	9.35E+00
	912.12	15.25	2.44E+01		5.49E+00	1.13E+01
	1093.66	62.50	5.72E+00		-2.09E+00	2.58E+00
LU-173	100.72	5.24	1.57E+01	7.48E+00	-8.89E+00	7.61E+00
	272.11	21.20	7.48E+00		1.96E+00	3.60E+00
HF-175	343.40	84.00	2.21E+00	2.21E+00	-1.51E-01	1.06E+00
LU-176	88.34	13.30	7.44E+00	1.48E+00	4.24E+00	3.64E+00
	201.83	86.00	1.48E+00		1.71E-01	7.14E-01
	306.78	94.00	1.74E+00		3.08E-03	8.36E-01
TA-182	67.75	41.20	2.30E+00	2.30E+00	3.99E-01	1.12E+00
	1121.30	34.90	1.05E+01		-4.38E+00	4.78E+00
	1189.05	16.23	2.21E+01		-6.44E-02	9.94E+00
	1221.41	26.98	1.33E+01		1.39E+00	5.93E+00
	1231.02	11.44	3.27E+01		-4.95E+00	1.47E+01
IR-192	308.46	29.68	5.53E+00	4.51E+00	-3.94E+00	2.65E+00
	468.07	48.10	4.51E+00		-4.92E-01	2.13E+00
HG-203	279.19	77.30	2.07E+00	2.07E+00	-5.48E-01	9.94E-01
BI-207	569.67	97.72	2.46E+00	2.46E+00	-6.21E-01	1.15E+00
	1063.62	74.90	4.73E+00		3.11E-03	2.15E+00
TL-208	583.14	30.22	8.61E+00	8.61E+00	5.67E-01	4.05E+00
	860.37	4.48	8.12E+01		6.58E+01	3.78E+01
	2614.66	35.85	2.05E+01		1.72E+00	8.99E+00
BI-210M	262.00	45.00	3.29E+00	3.29E+00	-1.09E-01	1.58E+00
	300.00	23.00	6.94E+00		2.95E-01	3.33E+00
PB-210	46.50	4.25	2.69E+01	2.69E+01	1.94E+01	1.32E+01
PB-211	404.84	2.90	7.31E+01	7.31E+01	2.30E+00	3.49E+01
	831.96	2.90	1.19E+02		-2.09E+00	5.52E+01
BI-212	727.17	11.80	2.68E+01	2.68E+01	1.97E+00	1.25E+01
	1620.62	2.75	1.42E+02		-8.00E+01	6.16E+01
PB-212	238.63	44.60	3.44E+00	3.44E+00	1.34E+00	1.66E+00
	300.09	3.41	4.68E+01		1.99E+00	2.24E+01
BI-214	609.31	46.30	6.66E+00	6.66E+00	1.77E+00	3.16E+00
	1120.29	15.10	2.56E+01		-1.05E+00	1.17E+01
	1764.49	15.80	2.97E+01		1.49E+01	1.30E+01
	2204.22	4.98	1.04E+02		1.80E+01	4.47E+01
PB-214	295.21	19.19	8.46E+00	5.11E+00	4.86E-01	4.06E+00
	351.92	37.19	5.11E+00		3.75E+00	2.45E+00

Analysis Report for 1508105-02

BLANK

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/sample)	Nuclide MDA (pCi/sample)	Activity (pCi/sample)	Dec. Level (pCi/sample)
RN-219	401.80	6.50	3.20E+01	3.20E+01	-8.28E+00	1.53E+01
RA-223	323.87	3.88	4.47E+01	4.47E+01	-1.18E+01	2.14E+01
RA-224	240.98	3.95	3.87E+01	3.87E+01	4.35E+00	1.87E+01
RA-225	40.00	31.00	4.17E+00	4.17E+00	-2.48E+00	2.03E+00
RA-226	186.21	3.28	4.02E+01	4.02E+01	3.45E+01	1.95E+01
TH-227	50.10	8.40	1.28E+01	1.28E+01	9.56E+00	6.26E+00
	236.00	11.50	1.29E+01		-1.10E+00	6.21E+00
	256.20	6.30	2.36E+01		2.65E+00	1.14E+01
AC-228	338.32	11.40	1.63E+01	1.28E+01	1.44E+00	7.82E+00
	911.07	27.70	1.28E+01		3.79E+00	5.90E+00
	969.11	16.60	1.83E+01		-3.96E+00	8.28E+00
TH-230	48.44	16.90	6.57E+00	6.57E+00	5.24E+00	3.21E+00
	62.85	4.60	2.21E+01		3.12E+01	1.08E+01
	67.67	0.37	2.55E+02		4.43E+01	1.25E+02
PA-231	283.67	1.60	1.04E+02	6.81E+01	2.04E+00	4.99E+01
	302.67	2.30	6.81E+01		-2.47E+01	3.26E+01
TH-231	25.64	14.70	2.39E+01	1.39E+01	8.97E+00	1.17E+01
	84.21	6.40	1.39E+01		-9.85E-01	6.77E+00
PA-233	311.98	38.60	4.70E+00	4.70E+00	2.29E+00	2.26E+00
PA-234	131.20	20.40	4.68E+00	4.68E+00	9.84E-01	2.27E+00
	733.99	8.80	3.71E+01		2.28E+01	1.74E+01
	946.00	12.00	2.70E+01		-8.59E-01	1.23E+01
PA-234M	1001.03	0.92	4.07E+02	4.07E+02	1.77E+02	1.87E+02
TH-234	63.29	3.80	2.65E+01	2.65E+01	3.51E+01	1.29E+01
U-235	143.76	10.50	9.30E+00	9.30E+00	2.49E-02	4.50E+00
	163.35	4.70	2.35E+01		2.85E+00	1.14E+01
	205.31	4.70	2.76E+01		9.46E+00	1.34E+01
NP-237	86.50	12.60	7.04E+00	7.04E+00	-1.75E+01	3.43E+00
NP-239	106.10	22.70	4.32E+00	4.32E+00	-8.03E-01	2.10E+00
	228.18	10.70	1.39E+01		-1.34E+01	6.69E+00
	277.60	14.10	1.29E+01		7.31E-01	6.18E+00
AM-241	59.54	35.90	2.82E+00	2.82E+00	2.27E+00	1.38E+00
AM-243	74.67	66.00	1.33E+00	1.33E+00	1.38E-01	6.49E-01
CM-243	209.75	3.29	3.97E+01	1.13E+01	-5.50E+00	1.92E+01
	228.14	10.60	1.26E+01		-8.11E+00	6.08E+00
	277.60	14.00	1.13E+01		6.43E-01	5.44E+00

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

No Action Level results available for reporting purposes.

Analysis Report for 1508105-02

BLANK

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: 14400
Elapsed Real Time: 14407

Channel								
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	47	200
17:	146	138	144	122	141	147	94	107
25:	83	81	83	70	69	79	54	64
33:	71	74	76	69	60	44	58	52
41:	60	60	53	60	85	88	69	59
49:	60	56	62	53	53	50	59	53
57:	52	59	51	55	79	87	119	71
65:	61	59	46	51	54	46	58	48
73:	53	57	57	54	67	50	62	55
81:	50	49	66	55	52	47	49	40
89:	48	71	90	138	80	60	46	51
97:	49	35	49	41	34	30	35	39
105:	47	54	52	45	41	45	42	36
113:	48	57	49	42	45	38	34	38
121:	51	28	45	41	39	44	40	38
129:	36	37	42	45	42	33	26	39
137:	38	40	36	39	32	40	47	36
145:	30	30	32	31	36	33	26	40
153:	42	28	30	38	42	29	35	31
161:	34	40	42	39	38	39	33	29
169:	31	45	32	40	35	30	34	46
177:	38	34	28	35	31	33	35	44
185:	61	60	37	32	34	30	33	33
193:	31	41	39	38	47	28	20	39
201:	37	40	26	24	25	34	37	35
209:	31	28	23	36	30	30	36	36
217:	23	27	19	38	26	28	41	34
225:	23	22	20	23	31	24	24	27
233:	41	32	30	23	39	31	28	38
241:	34	35	32	21	28	23	30	31
249:	24	29	27	23	25	29	23	29
257:	24	26	24	27	25	20	24	27
265:	18	20	24	22	37	27	19	26
273:	26	23	22	24	28	20	25	24
281:	23	28	19	22	36	21	26	31
289:	20	25	23	27	22	22	13	24
297:	23	23	17	14	23	17	26	16
305:	16	17	23	23	21	21	13	26
313:	26	24	31	23	14	29	21	20
321:	18	23	11	19	22	18	24	20
329:	24	19	22	18	18	24	14	21
337:	19	16	14	22	29	23	25	17
345:	11	17	15	20	16	19	30	19
353:	16	14	23	15	11	13	14	16
361:	17	12	20	18	15	17	21	16

369:	14	22	11	17	21	11	14	15

Sample Title: BLANK

Channel								
377:	24	23	16	16	16	24	16	16
385:	20	24	11	12	18	14	18	11
393:	22	27	13	13	13	18	21	17
401:	15	11	15	16	21	17	16	22
409:	17	16	14	12	20	15	13	12
417:	15	12	16	11	15	13	16	14
425:	17	11	13	14	14	17	15	12
433:	17	15	10	11	14	11	8	18
441:	16	13	19	18	11	16	8	12
449:	18	16	11	19	8	12	16	15
457:	21	13	14	13	15	13	12	15
465:	10	13	9	15	8	10	16	10
473:	11	13	11	10	6	16	11	10
481:	12	17	19	7	7	17	8	15
489:	6	16	15	9	14	9	12	8
497:	10	16	15	7	11	6	9	14
505:	8	10	17	18	41	46	44	41
513:	25	16	17	14	11	6	11	9
521:	13	14	8	7	12	8	11	8
529:	10	15	8	8	7	10	8	9
537:	7	13	15	9	9	15	11	3
545:	13	12	12	11	9	4	9	14
553:	15	7	13	10	15	15	13	7
561:	10	14	8	12	9	9	12	13
569:	8	8	11	4	4	11	10	6
577:	9	5	10	6	14	9	9	5
585:	8	12	14	14	10	11	14	11
593:	11	11	10	18	17	11	13	12
601:	10	14	12	7	15	13	11	13
609:	14	17	12	7	9	10	9	13
617:	12	15	7	12	6	11	6	7
625:	11	6	12	9	7	7	7	9
633:	8	13	10	5	9	8	12	7
641:	11	9	10	14	6	8	7	6
649:	7	8	7	3	8	4	11	4
657:	8	9	14	12	15	9	9	6
665:	8	6	5	8	8	6	9	12
673:	12	10	6	6	8	10	6	6
681:	6	11	5	10	7	9	5	4
689:	7	4	12	9	17	12	10	4
697:	7	12	10	9	7	8	5	6
705:	12	9	7	10	6	7	14	7
713:	9	12	4	3	5	14	6	12
721:	7	6	7	4	19	9	7	4
729:	6	6	11	11	5	6	11	9
737:	9	8	3	7	6	9	8	10
745:	4	3	5	7	5	8	2	6
753:	9	4	4	6	8	5	8	6
761:	2	11	8	11	5	4	6	4
769:	5	6	3	6	5	8	7	7
777:	3	6	5	7	5	5	6	12
785:	2	5	0	7	5	4	4	7
793:	9	8	10	10	5	9	3	4

801:	5	8	14	11	6	6	12	5

Sample Title: BLANK

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

1233:	2	4	3	2	4	4	5	3

Sample Title: BLANK

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

1665:	0	2	2	3	4	0	0	0

Sample Title: BLANK

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

2097:	0	0	2	0	1	2	3	3

Sample Title: BLANK

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

2529:	1	0	2	0	0	0	1	0

Sample Title: BLANK

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

2961:	0	2	0	0	0	0	0	0

Sample Title: BLANK

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

3393:	0	0	1	0	0	0	0	1

Sample Title: BLANK

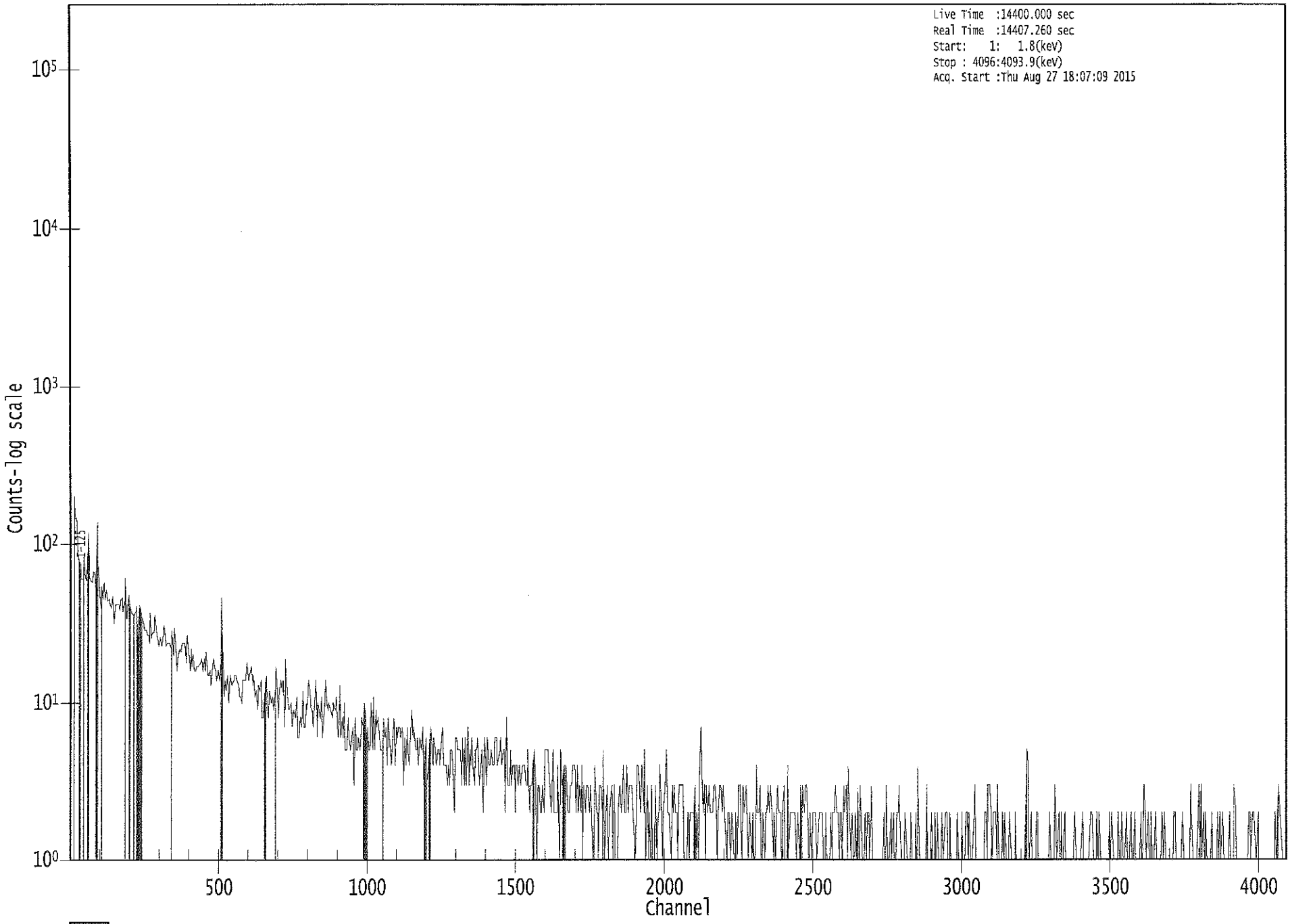
Channel								
3401:	1	0	1	0	0	1	2	2
3409:	0	0	0	0	1	0	0	1
3417:	0	1	0	1	0	1	1	0
3425:	0	0	0	1	1	0	0	0
3433:	1	2	0	0	1	0	2	0
3441:	1	0	0	1	1	0	0	0
3449:	0	0	0	1	0	1	2	0
3457:	0	0	1	0	0	0	2	1
3465:	0	0	1	1	1	1	0	0
3473:	0	0	0	0	0	1	0	0
3481:	1	1	1	0	0	0	1	0
3489:	0	1	0	0	0	0	0	1
3497:	2	0	0	0	1	0	0	0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

3825:	0	0	1	0	0	0	0	1

Sample Title: BLANK

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

0000026551.CNF



ROI Type: 1

Apex-Gamma

Analysis Report for 1508105-03
ENGWESA001

C
8/28

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 1508105-03
Sample Description	: ENGWESA001
Sample Type	: FILTER
Sample Size	: 5.900E-01 sample
Facility	: Countroom
Sample Taken On	: 6/24/2015 9:08:36AM
Acquisition Started	: 8/27/2015 6:14:44PM
Procedure	: GAF-14 pCi
Operator	: Administrator
Detector Name	: GE1
Geometry	: GAF-14
Live Time	: 14400.0 seconds
Real Time	: 14401.7 seconds
Dead Time	: 0.01 %
Peak Locate Threshold	: 2.50
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 19 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 10/25/2014
Efficiency Calibration Used Done On	: 10/25/2014
Efficiency Calibration Description	:
Sample Number	: 26552

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
8/31/15

Analysis Report for 1508105-03

ENGWESA001

PEAK LOCATE REPORT

Peak Locate Performed on : 8/27/2015 10:14:51PM
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	36.43	36.78	0.0000	0.00
2	46.76	47.12	0.0000	0.00
3	76.36	76.70	0.0000	0.00
4	113.98	114.31	0.0000	0.00
5	137.98	138.30	0.0000	0.00
6	276.04	276.32	0.0000	0.00
7	284.08	284.35	0.0000	0.00
8	357.88	358.12	0.0000	0.00
9	413.35	413.57	0.0000	0.00
10	477.70	477.90	0.0000	0.00
11	570.40	570.58	0.0000	0.00
12	583.71	583.88	0.0000	0.00
13	597.26	597.42	0.0000	0.00
14	664.43	664.57	0.0000	0.00
15	692.89	693.02	0.0000	0.00
16	742.96	743.07	0.0000	0.00
17	765.98	766.08	0.0000	0.00
18	936.95	937.00	0.0000	0.00
19	1112.37	1112.35	0.0000	0.00
20	1146.26	1146.24	0.0000	0.00
21	1478.75	1478.60	0.0000	0.00
22	1496.00	1495.85	0.0000	0.00
23	1545.74	1545.56	0.0000	0.00
24	1670.92	1670.70	0.0000	0.00
25	1765.06	1764.80	0.0000	0.00
26	2012.60	2012.25	0.0000	0.00
27	2088.10	2087.73	0.0000	0.00
28	2247.24	2246.80	0.0000	0.00
29	2261.73	2261.28	0.0000	0.00
30	2264.97	2264.52	0.0000	0.00
31	2275.35	2274.90	0.0000	0.00
32	2434.61	2434.10	0.0000	0.00
33	2534.92	2534.37	0.0000	0.00
34	2621.36	2620.78	0.0000	0.00
35	2628.58	2627.99	0.0000	0.00
36	2805.19	2804.53	0.0000	0.00
37	2849.14	2848.46	0.0000	0.00
38	2944.31	2943.60	0.0000	0.00
39	3165.86	3165.05	0.0000	0.00
40	3218.85	3218.02	0.0000	0.00
41	3390.59	3389.69	0.0000	0.00
42	3398.12	3397.22	0.0000	0.00

Analysis Report for 1508105-03

ENGWESA001

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1508105-03

ENGWESA001

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 8/27/2015 10:14:51PM

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	36.43	34 -	39	36.78	7.20E+01	67.35	8.46E+02	1.50
	2	46.76	44 -	50	47.12	1.36E+03	108.83	1.15E+03	1.28
	3	76.36	72 -	80	76.70	9.98E+01	95.74	1.35E+03	3.79
	4	113.98	110 -	119	114.31	1.43E+02	94.20	1.19E+03	2.18
M	5	137.98	136 -	147	138.30	5.02E+01	54.09	6.12E+02	1.71
	6	276.04	274 -	279	276.32	5.83E+01	51.58	4.89E+02	2.25
	7	284.08	281 -	288	284.35	6.41E+01	66.69	6.96E+02	2.27
	8	357.88	356 -	360	358.12	3.97E+01	34.75	2.31E+02	1.04
	9	413.35	408 -	420	413.57	9.45E+01	57.40	3.39E+02	9.64
	10	477.70	473 -	482	477.90	2.85E+03	118.56	3.81E+02	1.57
	11	570.40	566 -	574	570.58	3.38E+01	37.35	1.94E+02	2.12
	12	583.71	579 -	588	583.88	5.68E+01	39.42	1.88E+02	3.15
	13	597.26	595 -	600	597.42	3.09E+01	27.84	1.32E+02	3.73
	14	664.43	659 -	669	664.57	5.61E+01	39.73	1.78E+02	7.08
	15	692.89	690 -	695	693.02	2.14E+01	25.57	1.13E+02	1.58
	16	742.96	741 -	745	743.07	1.55E+01	18.17	5.89E+01	2.57
	17	765.98	763 -	769	766.08	2.45E+01	25.20	9.69E+01	2.35
	18	936.95	932 -	940	937.00	2.60E+01	23.92	7.20E+01	4.60
	19	1112.37	1110 -	1115	1112.35	1.94E+01	17.29	4.32E+01	3.34
	20	1146.26	1143 -	1149	1146.24	1.92E+01	18.64	4.96E+01	1.28
	21	1478.75	1476 -	1482	1478.60	8.94E+00	11.19	1.41E+01	1.31
	22	1496.00	1493 -	1499	1495.85	1.20E+01	11.18	1.40E+01	1.93
	23	1545.74	1541 -	1549	1545.56	2.28E+01	10.97	4.36E+00	3.33
	24	1670.92	1665 -	1675	1670.70	1.68E+01	13.81	1.64E+01	7.02
	25	1765.06	1761 -	1769	1764.80	2.10E+01	13.14	1.39E+01	2.30
	26	2012.60	2008 -	2016	2012.25	1.37E+01	9.18	4.63E+00	3.75
	27	2088.10	2083 -	2092	2087.73	1.97E+01	10.63	4.55E+00	1.21
	28	2247.24	2243 -	2249	2246.80	6.50E+00	8.03	7.00E+00	1.28
M	29	2261.73	2260 -	2270	2261.28	6.49E+00	4.24	3.60E+00	3.25
m	30	2264.97	2260 -	2270	2264.52	1.41E+01	10.61	9.30E+00	2.99
	31	2275.35	2272 -	2278	2274.90	1.00E+01	6.32	0.00E+00	3.16
	32	2434.61	2430 -	2437	2434.10	1.00E+01	8.00	4.00E+00	3.59
	33	2534.92	2531 -	2537	2534.37	6.38E+00	6.65	3.25E+00	1.28
	34	2621.36	2618 -	2623	2620.78	7.67E+00	6.71	2.67E+00	2.84
	35	2628.58	2624 -	2634	2627.99	1.07E+01	11.34	1.26E+01	1.24
	36	2805.19	2801 -	2806	2804.53	5.36E+00	6.08	3.29E+00	1.07
	37	2849.14	2846 -	2851	2848.46	6.00E+00	7.35	6.00E+00	1.45
	38	2944.31	2939 -	2946	2943.60	7.75E+00	7.48	4.50E+00	4.55
	39	3165.86	3161 -	3169	3165.05	8.00E+00	7.76	4.00E+00	2.87
	40	3218.85	3215 -	3220	3218.02	5.57E+00	6.08	2.86E+00	2.68

Analysis Report for 1508105-03

ENGWESA001

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
41	3390.59	3387 -	3392	3389.69	5.71E+00	6.08	2.57E+00	2.93
42	3398.12	3394 -	3400	3397.22	9.00E+00	6.00	0.00E+00	1.66

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

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 8/27/2015 10:14:51PM

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	36.43	34 -	39	7.20E+01	67.35	8.46E+02	5.36E+01
	2	46.76	44 -	50	1.36E+03	108.83	1.15E+03	6.58E+01
	3	76.36	72 -	80	9.98E+01	95.74	1.35E+03	7.70E+01
	4	113.98	110 -	119	1.43E+02	94.20	1.19E+03	7.49E+01
M	5	137.98	136 -	147	5.02E+01	54.09	6.12E+02	4.07E+01
	6	276.04	274 -	279	5.83E+01	51.58	4.89E+02	4.05E+01
	7	284.08	281 -	288	6.41E+01	66.69	6.96E+02	5.32E+01
	8	357.88	356 -	360	3.97E+01	34.75	2.31E+02	2.66E+01
	9	413.35	408 -	420	9.45E+01	57.40	3.39E+02	4.44E+01
	10	477.70	473 -	482	2.85E+03	118.56	3.81E+02	4.24E+01
	11	570.40	566 -	574	3.38E+01	37.35	1.94E+02	2.92E+01
	12	583.71	579 -	588	5.68E+01	39.42	1.88E+02	2.99E+01
	13	597.26	595 -	600	3.09E+01	27.84	1.32E+02	2.10E+01
	14	664.43	659 -	669	5.61E+01	39.73	1.78E+02	3.02E+01
	15	692.89	690 -	695	2.14E+01	25.57	1.13E+02	1.96E+01
	16	742.96	741 -	745	1.55E+01	18.17	5.89E+01	1.35E+01
	17	765.98	763 -	769	2.45E+01	25.20	9.69E+01	1.90E+01
	18	936.95	932 -	940	2.60E+01	23.92	7.20E+01	1.78E+01
	19	1112.37	1110 -	1115	1.94E+01	17.29	4.32E+01	1.22E+01
	20	1146.26	1143 -	1149	1.92E+01	18.64	4.96E+01	1.35E+01
	21	1478.75	1476 -	1482	8.94E+00	11.19	1.41E+01	7.78E+00
	22	1496.00	1493 -	1499	1.20E+01	11.18	1.40E+01	7.21E+00
	23	1545.74	1541 -	1549	2.28E+01	10.97	4.36E+00	4.42E+00
	24	1670.92	1665 -	1675	1.68E+01	13.81	1.64E+01	9.13E+00
	25	1765.06	1761 -	1769	2.10E+01	13.14	1.39E+01	7.74E+00

Analysis Report for 1508105-03

ENGWESA001

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	26	2012.60	2008 -	2016	1.37E+01	9.18	4.63E+00	4.46E+00
	27	2088.10	2083 -	2092	1.97E+01	10.63	4.55E+00	4.80E+00
	28	2247.24	2243 -	2249	6.50E+00	8.03	7.00E+00	5.10E+00
M	29	2261.73	2260 -	2270	6.49E+00	4.24	3.60E+00	3.12E+00
m	30	2264.97	2260 -	2270	1.41E+01	10.61	9.30E+00	5.01E+00
	31	2275.35	2272 -	2278	1.00E+01	6.32	0.00E+00	0.00E+00
	32	2434.61	2430 -	2437	1.00E+01	8.00	4.00E+00	4.03E+00
	33	2534.92	2531 -	2537	6.38E+00	6.65	3.25E+00	3.56E+00
	34	2621.36	2618 -	2623	7.67E+00	6.71	2.67E+00	3.11E+00
	35	2628.58	2624 -	2634	1.07E+01	11.34	1.26E+01	7.61E+00
	36	2805.19	2801 -	2806	5.36E+00	6.08	3.29E+00	3.24E+00
	37	2849.14	2846 -	2851	6.00E+00	7.35	6.00E+00	4.50E+00
	38	2944.31	2939 -	2946	7.75E+00	7.48	4.50E+00	4.11E+00
	39	3165.86	3161 -	3169	8.00E+00	7.76	4.00E+00	4.37E+00
	40	3218.85	3215 -	3220	5.57E+00	6.08	2.86E+00	3.15E+00
	41	3390.59	3387 -	3392	5.71E+00	6.08	2.57E+00	3.09E+00
	42	3398.12	3394 -	3400	9.00E+00	6.00	0.00E+00	0.00E+00

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

PEAK WITH NID REPORT

Peak Analysis Performed on : 8/27/2015 10:14:51PM

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	36.43	34 -	39	36.78	7.20E+01	67.35	8.46E+02	PM-145 I-125 PM-145
	2	46.76	44 -	50	47.12	1.36E+03	108.83	1.15E+03	PB-210
	3	76.36	72 -	80	76.70	9.98E+01	95.74	1.35E+03	.....
	4	113.98	110 -	119	114.31	1.43E+02	94.20	1.19E+03	.....
M	5	137.98	136 -	147	138.30	5.02E+01	54.09	6.12E+02	.....
	6	276.04	274 -	279	276.32	5.83E+01	51.58	4.89E+02	.....

Analysis Report for 1508105-03

ENGWESA001

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	7	284.08	281 -	288	284.35	6.41E+01	66.69	6.96E+02	I-131 PA-231
	8	357.88	356 -	360	358.12	3.97E+01	34.75	2.31E+02	.....
	9	413.35	408 -	420	413.57	9.45E+01	57.40	3.39E+02	.....
	10	477.70	473 -	482	477.90	2.85E+03	118.56	3.81E+02	BE-7 PM-144
	11	570.40	566 -	574	570.58	3.38E+01	37.35	1.94E+02	BI-207
	12	583.71	579 -	588	583.88	5.68E+01	39.42	1.88E+02	TL-208
	13	597.26	595 -	600	597.42	3.09E+01	27.84	1.32E+02	.....
	14	664.43	659 -	669	664.57	5.61E+01	39.73	1.78E+02	CE-143
	15	692.89	690 -	695	693.02	2.14E+01	25.57	1.13E+02	.....
	16	742.96	741 -	745	743.07	1.55E+01	18.17	5.89E+01	.....
	17	765.98	763 -	769	766.08	2.45E+01	25.20	9.69E+01	NB-95
	18	936.95	932 -	940	937.00	2.60E+01	23.92	7.20E+01	.....
	19	1112.37	1110 -	1115	1112.35	1.94E+01	17.29	4.32E+01	EU-152
	20	1146.26	1143 -	1149	1146.24	1.92E+01	18.64	4.96E+01	.....
	21	1478.75	1476 -	1482	1478.60	8.94E+00	11.19	1.41E+01	.....
	22	1496.00	1493 -	1499	1495.85	1.20E+01	11.18	1.40E+01	.....
	23	1545.74	1541 -	1549	1545.56	2.28E+01	10.97	4.36E+00	.....
	24	1670.92	1665 -	1675	1670.70	1.68E+01	13.81	1.64E+01	.....
	25	1765.06	1761 -	1769	1764.80	2.10E+01	13.14	1.39E+01	BI-214
	26	2012.60	2008 -	2016	2012.25	1.37E+01	9.18	4.63E+00	.....
	27	2088.10	2083 -	2092	2087.73	1.97E+01	10.63	4.55E+00	.....
	28	2247.24	2243 -	2249	2246.80	6.50E+00	8.03	7.00E+00	.....
M	29	2261.73	2260 -	2270	2261.28	6.49E+00	4.24	3.60E+00	.....
m	30	2264.97	2260 -	2270	2264.52	1.41E+01	10.61	9.30E+00	.....
	31	2275.35	2272 -	2278	2274.90	1.00E+01	6.32	0.00E+00	.....
	32	2434.61	2430 -	2437	2434.10	1.00E+01	8.00	4.00E+00	.....
	33	2534.92	2531 -	2537	2534.37	6.38E+00	6.65	3.25E+00	.....
	34	2621.36	2618 -	2623	2620.78	7.67E+00	6.71	2.67E+00	.....
	35	2628.58	2624 -	2634	2627.99	1.07E+01	11.34	1.26E+01	.....
	36	2805.19	2801 -	2806	2804.53	5.36E+00	6.08	3.29E+00	.....
	37	2849.14	2846 -	2851	2848.46	6.00E+00	7.35	6.00E+00	.....
	38	2944.31	2939 -	2946	2943.60	7.75E+00	7.48	4.50E+00	.....
	39	3165.86	3161 -	3169	3165.05	8.00E+00	7.76	4.00E+00	.....
	40	3218.85	3215 -	3220	3218.02	5.57E+00	6.08	2.86E+00	.....
	41	3390.59	3387 -	3392	3389.69	5.71E+00	6.08	2.57E+00	.....
	42	3398.12	3394 -	3400	3397.22	9.00E+00	6.00	0.00E+00	.....

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

Analysis Report for 1508105-03

ENGWESA001

PEAK EFFICIENCY REPORT

Peak Analysis Performed on : 8/27/2015 10:14:51PM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	36.43	7.20E+01	67.35	1.29E-01	2.02E-02
	2	46.76	1.36E+03	108.83	2.18E-01	2.02E-02
	3	76.36	9.98E+01	95.74	2.71E-01	2.45E-02
	4	113.98	1.43E+02	94.20	2.25E-01	2.63E-02
M	5	137.98	5.02E+01	54.09	1.98E-01	3.14E-02
	6	276.04	5.83E+01	51.58	1.21E-01	2.46E-02
	7	284.08	6.41E+01	66.69	1.18E-01	2.34E-02
	8	357.88	3.97E+01	34.75	9.92E-02	1.25E-02
	9	413.35	9.45E+01	57.40	8.79E-02	7.62E-03
	10	477.70	2.85E+03	118.56	7.72E-02	7.84E-03
	11	570.40	3.38E+01	37.35	6.47E-02	8.16E-03
	12	583.71	5.68E+01	39.42	6.32E-02	8.21E-03
	13	597.26	3.09E+01	27.84	6.16E-02	8.25E-03
	14	664.43	5.61E+01	39.73	5.48E-02	8.51E-03
	15	692.89	2.14E+01	25.57	5.23E-02	8.89E-03
	16	742.96	1.55E+01	18.17	4.82E-02	9.55E-03
	17	765.98	2.45E+01	25.20	4.65E-02	9.85E-03
	18	936.95	2.60E+01	23.92	3.63E-02	1.05E-02
	19	1112.37	1.94E+01	17.29	2.93E-02	5.82E-03
	20	1146.26	1.92E+01	18.64	2.82E-02	4.91E-03
	21	1478.75	8.94E+00	11.19	2.13E-02	3.68E-03
	22	1496.00	1.20E+01	11.18	2.10E-02	3.58E-03
	23	1545.74	2.28E+01	10.97	2.04E-02	3.31E-03
	24	1670.92	1.68E+01	13.81	1.91E-02	2.62E-03
	25	1765.06	2.10E+01	13.14	1.85E-02	2.11E-03
	26	2012.60	1.37E+01	9.18	1.75E-02	1.72E-03
	27	2088.10	1.97E+01	10.63	1.74E-02	1.72E-03
	28	2247.24	6.50E+00	8.03	1.75E-02	1.72E-03
M	29	2261.73	6.49E+00	4.24	1.75E-02	1.72E-03
m	30	2264.97	1.41E+01	10.61	1.75E-02	1.72E-03
	31	2275.35	1.00E+01	6.32	1.76E-02	1.72E-03
	32	2434.61	1.00E+01	8.00	1.81E-02	1.72E-03
	33	2534.92	6.38E+00	6.65	1.87E-02	1.72E-03
	34	2621.36	7.67E+00	6.71	1.93E-02	1.72E-03
	35	2628.58	1.07E+01	11.34	1.93E-02	1.72E-03
	36	2805.19	5.36E+00	6.08	2.10E-02	1.72E-03
	37	2849.14	6.00E+00	7.35	2.15E-02	1.72E-03
	38	2944.31	7.75E+00	7.48	2.27E-02	1.72E-03
	39	3165.86	8.00E+00	7.76	2.65E-02	1.72E-03
	40	3218.85	5.57E+00	6.08	2.76E-02	1.72E-03
	41	3390.59	5.71E+00	6.08	3.18E-02	1.72E-03
	42	3398.12	9.00E+00	6.00	3.20E-02	1.72E-03

Analysis Report for 1508105-03

ENGWESA001

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 : 8/27/2015 10:14:51PM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000025966.CNF

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	1	36.43	7.20E+01	67.35			7.20E+01	6.73E+01
	2	46.76	1.36E+03	108.83	1.61E+02	3.37E+01	1.20E+03	1.14E+02
	3	76.36	9.98E+01	95.74			9.98E+01	9.57E+01
	4	113.98	1.43E+02	94.20			1.43E+02	9.42E+01
M	5	137.98	5.02E+01	54.09			5.02E+01	5.41E+01
	6	276.04	5.83E+01	51.58			5.83E+01	5.16E+01
	7	284.08	6.41E+01	66.69			6.41E+01	6.67E+01
	8	357.88	3.97E+01	34.75			3.97E+01	3.47E+01
	9	413.35	9.45E+01	57.40			9.45E+01	5.74E+01
	10	477.70	2.85E+03	118.56			2.85E+03	1.19E+02
	11	570.40	3.38E+01	37.35			3.38E+01	3.73E+01
	12	583.71	5.68E+01	39.42	1.81E+01	1.33E+01	3.87E+01	4.16E+01
	13	597.26	3.09E+01	27.84			3.09E+01	2.78E+01
	14	664.43	5.61E+01	39.73			5.61E+01	3.97E+01
	15	692.89	2.14E+01	25.57			2.14E+01	2.56E+01
	16	742.96	1.55E+01	18.17			1.55E+01	1.82E+01
	17	765.98	2.45E+01	25.20			2.45E+01	2.52E+01
	18	936.95	2.60E+01	23.92			2.60E+01	2.39E+01
	19	1112.37	1.94E+01	17.29			1.94E+01	1.73E+01
	20	1146.26	1.92E+01	18.64			1.92E+01	1.86E+01
	21	1478.75	8.94E+00	11.19			8.94E+00	1.12E+01
	22	1496.00	1.20E+01	11.18			1.20E+01	1.12E+01
	23	1545.74	2.28E+01	10.97			2.28E+01	1.10E+01
	24	1670.92	1.68E+01	13.81			1.68E+01	1.38E+01
	25	1765.06	2.10E+01	13.14			2.10E+01	1.31E+01
	26	2012.60	1.37E+01	9.18			1.37E+01	9.18E+00
	27	2088.10	1.97E+01	10.63			1.97E+01	1.06E+01
	28	2247.24	6.50E+00	8.03			6.50E+00	8.03E+00
M	29	2261.73	6.49E+00	4.24			6.49E+00	4.24E+00
m	30	2264.97	1.41E+01	10.61			1.41E+01	1.06E+01
	31	2275.35	1.00E+01	6.32			1.00E+01	6.32E+00
	32	2434.61	1.00E+01	8.00			1.00E+01	8.00E+00
	33	2534.92	6.38E+00	6.65			6.38E+00	6.65E+00
	34	2621.36	7.67E+00	6.71			7.67E+00	6.71E+00
	35	2628.58	1.07E+01	11.34			1.07E+01	1.13E+01

Analysis Report for 1508105-03

ENGWESA001

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
36	2805.19	5.36E+00	6.08			5.36E+00	6.08E+00
37	2849.14	6.00E+00	7.35			6.00E+00	7.35E+00
38	2944.31	7.75E+00	7.48			7.75E+00	7.48E+00
39	3165.86	8.00E+00	7.76			8.00E+00	7.76E+00
40	3218.85	5.57E+00	6.08			5.57E+00	6.08E+00
41	3390.59	5.71E+00	6.08			5.71E+00	6.08E+00
42	3398.12	9.00E+00	6.00			9.00E+00	6.00E+00

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

AREA CORRECTION REPORT
REFERENCE PEAK / BKG. SUBTRACT

Peak Analysis Performed on : 8/27/2015 10:14:51PM

Ref. Peak Energy : 0.00 Reference Date :
Peak Ratio : 0.00 Uncertainty : 0.00
Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000025966.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	36.43	7.20E+01	67.35			7.20E+01	6.73E+01
	2	46.76	1.36E+03	108.83	1.61E+02	3.37E+01	1.20E+03	1.14E+02
	3	76.36	9.98E+01	95.74			9.98E+01	9.57E+01
	4	113.98	1.43E+02	94.20			1.43E+02	9.42E+01
M	5	137.98	5.02E+01	54.09			5.02E+01	5.41E+01
	6	276.04	5.83E+01	51.58			5.83E+01	5.16E+01
	7	284.08	6.41E+01	66.69			6.41E+01	6.67E+01
	8	357.88	3.97E+01	34.75			3.97E+01	3.47E+01
	9	413.35	9.45E+01	57.40			9.45E+01	5.74E+01
	10	477.70	2.85E+03	118.56			2.85E+03	1.19E+02
	11	570.40	3.38E+01	37.35			3.38E+01	3.73E+01
	12	583.71	5.68E+01	39.42	1.81E+01	1.33E+01	3.87E+01	4.16E+01
	13	597.26	3.09E+01	27.84			3.09E+01	2.78E+01
	14	664.43	5.61E+01	39.73			5.61E+01	3.97E+01
	15	692.89	2.14E+01	25.57			2.14E+01	2.56E+01
	16	742.96	1.55E+01	18.17			1.55E+01	1.82E+01
	17	765.98	2.45E+01	25.20			2.45E+01	2.52E+01
	18	936.95	2.60E+01	23.92			2.60E+01	2.39E+01
	19	1112.37	1.94E+01	17.29			1.94E+01	1.73E+01
	20	1146.26	1.92E+01	18.64			1.92E+01	1.86E+01
	21	1478.75	8.94E+00	11.19			8.94E+00	1.12E+01

Analysis Report for 1508105-03

ENGWESA001

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	22	1496.00	1.20E+01	11.18			1.20E+01	1.12E+01
	23	1545.74	2.28E+01	10.97			2.28E+01	1.10E+01
	24	1670.92	1.68E+01	13.81			1.68E+01	1.38E+01
	25	1765.06	2.10E+01	13.14			2.10E+01	1.31E+01
	26	2012.60	1.37E+01	9.18			1.37E+01	9.18E+00
	27	2088.10	1.97E+01	10.63			1.97E+01	1.06E+01
	28	2247.24	6.50E+00	8.03			6.50E+00	8.03E+00
M	29	2261.73	6.49E+00	4.24			6.49E+00	4.24E+00
m	30	2264.97	1.41E+01	10.61			1.41E+01	1.06E+01
	31	2275.35	1.00E+01	6.32			1.00E+01	6.32E+00
	32	2434.61	1.00E+01	8.00			1.00E+01	8.00E+00
	33	2534.92	6.38E+00	6.65			6.38E+00	6.65E+00
	34	2621.36	7.67E+00	6.71			7.67E+00	6.71E+00
	35	2628.58	1.07E+01	11.34			1.07E+01	1.13E+01
	36	2805.19	5.36E+00	6.08			5.36E+00	6.08E+00
	37	2849.14	6.00E+00	7.35			6.00E+00	7.35E+00
	38	2944.31	7.75E+00	7.48			7.75E+00	7.48E+00
	39	3165.86	8.00E+00	7.76			8.00E+00	7.76E+00
	40	3218.85	5.57E+00	6.08			5.57E+00	6.08E+00
	41	3390.59	5.71E+00	6.08			5.71E+00	6.08E+00
	42	3398.12	9.00E+00	6.00			9.00E+00	6.00E+00

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

NUCLIDE IDENTIFICATION REPORT

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

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/sample)	Activity Uncertainty
BE-7	0.991	477.59	*	10.42	2.60E+03	2.86E+02
NB-95	0.978	765.79	*	99.81	6.02E+00	6.31E+00
I-125	0.865	35.49	*	6.49	5.77E+01	5.47E+01
BI-207	0.398	569.67	*	97.72	1.71E+00	1.90E+00
		1063.62		74.90		
PB-210	0.989	46.50	*	4.25	4.15E+02	5.52E+01

Analysis Report for 1508105-03

ENGWESA001

* = 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 : 8/27/2015 10:14:51PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	3	76.36	6.93079E-03	47.97		
	4	113.98	9.94638E-03	32.88		
M	5	137.98	3.48669E-03	53.87		
	6	276.04	4.04566E-03	44.27		
	7	284.08	4.45481E-03	51.98	Tol.	I-131 PA-231
	8	357.88	2.75739E-03	43.76		
	9	413.35	6.56303E-03	30.37		
	12	583.71	2.68878E-03	53.75	Tol.	TL-208
	13	597.26	2.14741E-03	45.01		
	14	664.43	3.89727E-03	35.39	Tol.	CE-143
	15	692.89	1.48949E-03	59.62		
	16	742.96	1.07948E-03	58.43		
	18	936.95	1.80556E-03	45.99		
	19	1112.37	1.34824E-03	44.53	Tol.	EU-152
	20	1146.26	1.33365E-03	48.53		
	21	1478.75	6.20660E-04	62.61		
	22	1496.00	8.33333E-04	46.58		
	23	1545.74	1.58472E-03	24.03		
	24	1670.92	1.16806E-03	41.06		
	25	1765.06	1.46081E-03	31.24	Tol.	BI-214
	26	2012.60	9.50521E-04	33.53		
	27	2088.10	1.36995E-03	26.94		
	28	2247.24	4.51389E-04	61.78		
M	29	2261.73	4.50558E-04	32.70		
m	30	2264.97	9.79955E-04	37.58		
	31	2275.35	6.94444E-04	31.62		
	32	2434.61	6.94444E-04	40.00		
	33	2534.92	4.42708E-04	52.17		
	34	2621.36	5.32407E-04	43.75		
	35	2628.58	7.43464E-04	52.94		
	36	2805.19	3.72024E-04	56.77		
	37	2849.14	4.16667E-04	61.24		
	38	2944.31	5.38194E-04	48.28		

Analysis Report for 1508105-03

ENGWESA001

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
39	3165.86	5.55556E-04	48.51		
40	3218.85	3.86905E-04	54.59		
41	3390.59	3.96825E-04	53.22		
42	3398.12	6.25000E-04	33.33		

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

NUCLIDE IDENTIFICATION REPORT

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

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/sample)	Activity Uncertainty
BE-7	0.99	477.59	*	10.42	2.60E+03	2.86E+02
NB-95	0.97	765.79	*	99.81	6.02E+00	6.31E+00
I-125	0.86	35.49	*	6.49	5.77E+01	5.47E+01
BI-207	0.39	569.67	*	97.72	1.71E+00	1.90E+00
		1063.62		74.90		
PB-210	0.98	46.50	*	4.25	4.15E+02	5.52E+01

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

INTERFERENCE CORRECTED REPORT

Analysis Report for 1508105-03

ENGWESA001

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/sample)	Wt mean Activity Uncertainty	Comments
BE-7	0.991	2.60E+03	2.86E+02	
NB-95	0.978	6.02E+00	6.31E+00	
I-125	0.865	5.77E+01	5.47E+01	
BI-207	0.398	1.71E+00	1.90E+00	
PB-210	0.989	4.15E+02	5.52E+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 1508105-03

ENGWESA001

UNIDENTIFIED PEAKS

Peak Locate Performed on : 8/27/2015 10:14:51PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	3	76.36	6.93079E-03	47.97		
	4	113.98	9.94638E-03	32.88		
M	5	137.98	3.48669E-03	53.87		
	6	276.04	4.04566E-03	44.27		
	7	284.08	4.45481E-03	51.98	Tol.	I-131 PA-231
	8	357.88	2.75739E-03	43.76		
	9	413.35	6.56303E-03	30.37		
	12	583.71	2.68878E-03	53.75	Tol.	TL-208
	13	597.26	2.14741E-03	45.01		
	14	664.43	3.89727E-03	35.39	Tol.	CE-143
	15	692.89	1.48949E-03	59.62		
	16	742.96	1.07948E-03	58.43		
	18	936.95	1.80556E-03	45.99		
	19	1112.37	1.34824E-03	44.53	Tol.	EU-152
	20	1146.26	1.33365E-03	48.53		
	21	1478.75	6.20660E-04	62.61		
	22	1496.00	8.33333E-04	46.58		
	23	1545.74	1.58472E-03	24.03		
	24	1670.92	1.16806E-03	41.06		
	25	1765.06	1.46081E-03	31.24	Tol.	BI-214
	26	2012.60	9.50521E-04	33.53		
	27	2088.10	1.36995E-03	26.94		
	28	2247.24	4.51389E-04	61.78		
M	29	2261.73	4.50558E-04	32.70		
m	30	2264.97	9.79955E-04	37.58		
	31	2275.35	6.94444E-04	31.62		
	32	2434.61	6.94444E-04	40.00		
	33	2534.92	4.42708E-04	52.17		
	34	2621.36	5.32407E-04	43.75		
	35	2628.58	7.43464E-04	52.94		
	36	2805.19	3.72024E-04	56.77		
	37	2849.14	4.16667E-04	61.24		
	38	2944.31	5.38194E-04	48.28		
	39	3165.86	5.55556E-04	48.51		

Analysis Report for 1508105-03

ENGWESA001

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
40	3218.85	3.86905E-04	54.59		
41	3390.59	3.96825E-04	53.22		
42	3398.12	6.25000E-04	33.33		

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

NUCLIDE MDA REPORT

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

		Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/sample)	Nuclide MDA (pCi/sample)	Line MDA (pCi/sample)
+		BE-7	477.59	*	10.42	2.60E+03	8.00E+01	8.00E+01
+		NA-22	1274.54		99.94	-6.67E-01	3.22E+00	3.22E+00
+	@	NA-24	1368.53		99.99	1.00E+26	1.00E+26	1.00E+26
	@		2754.09		99.86	1.00E+26		1.00E+26
+		AL-26	1808.65		99.76	1.91E+00	3.84E+00	3.84E+00
+		K-40	1460.81		10.67	3.98E+01	4.84E+01	4.84E+01
+	@	AR-41	1293.64		99.16	1.00E+26	1.00E+26	1.00E+26
+		TI-44	67.88		94.40	-3.62E-01	1.22E+00	1.22E+00
			78.34		96.00	3.30E-01		1.24E+00
+		SC-46	889.25		99.98	3.71E+00	5.47E+00	5.47E+00
			1120.51		99.99	3.71E+00		6.33E+00
+		V-48	983.52		99.98	1.22E+01	5.29E+01	5.29E+01
			1312.10		97.50	1.48E+01		6.07E+01
+		CR-51	320.08		9.83	-7.38E+01	9.79E+01	9.79E+01
+		MN-54	834.83		99.97	6.58E-01	3.40E+00	3.40E+00
+		CO-56	846.75		99.96	1.36E+00	5.56E+00	5.56E+00
			1037.75		14.03	1.35E+01		4.07E+01
			1238.25		67.00	2.03E+00		1.06E+01
			1771.40		15.51	5.28E+00		3.70E+01
			2598.48		16.90	1.04E+01		2.89E+01
+		CO-57	122.06		85.51	-8.12E-01	1.77E+00	1.77E+00
			136.48		10.60	-1.15E+01		1.56E+01
+		CO-58	810.76		99.40	-1.67E+00	4.89E+00	4.89E+00
+		FE-59	1099.22		56.50	-3.06E+00	1.62E+01	1.62E+01
			1291.56		43.20	-4.08E+00		2.04E+01
+		CO-60	1173.22		100.00	3.09E+00	3.63E+00	4.10E+00

Analysis Report for 1508105-03

ENGWESA001

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/sample)	Nuclide MDA (pCi/sample)	Line MDA (pCi/sample)
	CO-60	1332.49		100.00	1.08E+00	3.63E+00	3.63E+00
+	ZN-65	1115.52		50.75	-2.34E+00	7.99E+00	7.99E+00
+	GA-67	93.31		35.70	1.99E+07	4.68E+06	4.68E+06
		208.95		2.24	-3.00E+07		7.03E+07
		300.22		16.00	-1.88E+06		1.21E+07
+	SE-75	121.11		16.70	-1.77E+00	3.47E+00	1.12E+01
		136.00		59.20	5.69E-01		3.47E+00
		264.65		59.80	-2.98E+00		4.70E+00
		279.53		25.20	-7.49E+00		1.14E+01
		400.65		11.40	-1.94E+00		2.35E+01
+	RB-82	776.52		13.00	-6.54E+00	1.19E+02	1.19E+02
+	RB-83	520.41		46.00	-1.96E+00	7.78E+00	7.78E+00
		529.64		30.30	1.61E+00		1.25E+01
		552.65		16.40	3.88E+00		2.45E+01
+	KR-85	513.99		0.43	2.10E+03	9.54E+02	9.54E+02
+	SR-85	513.99		99.27	1.81E+01	8.22E+00	8.22E+00
+	Y-88	898.02		93.40	2.30E+00	4.87E+00	4.87E+00
		1836.01		99.38	2.85E+00		5.42E+00
+	NB-93M	16.57		9.43	-2.59E+03	4.54E+03	4.54E+03
+	NB-94	702.63		100.00	2.31E-01	2.63E+00	2.88E+00
		871.10		100.00	-8.68E-01		2.63E+00
+	NB-95	765.79	*	99.81	6.02E+00	1.00E+01	1.00E+01
+	NB-95M	235.69		25.00	-1.60E+06	1.75E+06	1.75E+06
+	ZR-95	724.18		43.70	1.56E-01	9.35E+00	1.34E+01
		756.72		55.30	-2.58E+00		9.35E+00
+	MO-99	181.06		6.20	-1.42E+08	2.35E+08	2.94E+08
		739.58		12.80	1.29E+07		2.35E+08
		778.00		4.50	8.49E+07		6.80E+08
+	RU-103	497.08		89.00	3.54E+00	7.85E+00	7.85E+00
+	RU-106	621.84		9.80	1.24E+00	2.95E+01	2.95E+01
+	AG-108M	433.93		89.90	-9.87E-01	2.39E+00	2.39E+00
		614.37		90.40	1.46E-01		3.09E+00
		722.95		90.50	-2.25E+00		2.96E+00
+	CD-109	88.03		3.72	-3.47E+01	3.56E+01	3.56E+01
+	AG-110M	657.75		93.14	-6.59E-02	3.17E+00	3.17E+00
		677.61		10.53	-8.42E+00		2.84E+01
		706.67		16.46	-4.14E+00		1.93E+01
		763.93		21.98	-6.19E-02		1.59E+01
		884.67		71.63	-3.48E-01		5.11E+00
		1384.27		23.94	-1.57E+00		1.78E+01
+	CD-113M	263.70		0.02	2.25E+02	8.77E+03	8.77E+03
+	SN-113	255.12		1.93	1.75E+00	4.08E+00	1.49E+02
		391.69		64.90	1.08E+00		4.08E+00
+	TE123M	159.00		84.10	-8.68E-01	2.53E+00	2.53E+00
+	SB-124	602.71		97.87	-4.21E-02	5.86E+00	5.86E+00
		645.85		7.26	1.38E+01		6.99E+01
		722.78		11.10	-3.84E+01		5.07E+01
		1691.02		49.00	-7.63E-01		1.53E+01

Analysis Report for 1508105-03

ENGWESA001

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/sample)	Nuclide MDA (pCi/sample)	Line MDA (pCi/sample)
+	I-125	35.49	*	6.49	5.77E+01	8.81E+01	8.81E+01
+	SB-125	176.33		6.89	7.19E+00	7.93E+00	2.49E+01
		427.89		29.33	1.27E+00		7.93E+00
		463.38		10.35	-3.01E+00		2.17E+01
		600.56		17.80	3.53E+00		1.67E+01
		635.90		11.32	-1.21E+01		2.08E+01
+	SB-126	414.70		83.30	3.18E+01	9.55E+01	9.55E+01
		666.33		99.60	3.87E+00		1.02E+02
		695.00		99.60	-1.40E+01		1.07E+02
		720.50		53.80	3.02E+01		1.90E+02
+	SN-126	87.57		37.00	-3.16E+00	3.25E+00	3.25E+00
+	SB-127	473.00		25.00	4.99E+05	7.04E+05	1.19E+06
		685.20		35.70	-2.73E+05		7.04E+05
		783.80		14.70	1.94E+05		2.16E+06
+	I-129	29.78		57.00	3.06E+00	9.43E+00	9.43E+00
		33.60		13.20	-5.44E+00		2.27E+01
		39.58		7.52	-6.84E+00		2.51E+01
+	I-131	284.30		6.05	6.16E+03	6.36E+02	9.23E+03
		364.48		81.20	2.86E+02		6.36E+02
		636.97		7.26	-9.45E+02		8.17E+03
		722.89		1.80	-2.93E+04		3.86E+04
+	TE-132	49.72		13.10	-4.35E+04	1.78E+06	1.13E+07
		228.16		88.00	-1.48E+05		1.78E+06
+	BA-133	81.00		33.00	-6.42E-01	2.99E+00	3.44E+00
		302.84		17.80	3.76E+00		1.23E+01
		356.01		60.00	-1.30E+00		2.99E+00
+	@ I-133	529.87		86.30	1.00E+26	1.00E+26	1.00E+26
+	XE-133	81.00		38.00	-2.77E+03	1.48E+04	1.48E+04
+	CS-134	563.23		8.38	8.20E+00	3.09E+00	2.94E+01
		569.32		15.43	3.77E+00		1.69E+01
		604.70		97.60	-2.47E+00		3.09E+00
		795.84		85.40	8.96E-01		3.53E+00
		801.93		8.73	-4.72E-01		3.61E+01
+	CS-135	268.24		16.00	2.25E+00	1.25E+01	1.25E+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	3.27E+02	8.86E+01	5.88E+02
		163.89		4.61	-1.63E+02		1.02E+03
		176.55		13.56	1.04E+02		3.61E+02
		273.65		12.66	3.95E+01		4.69E+02
		340.57		48.50	4.82E+01		1.22E+02
		818.50		99.70	-1.42E+00		8.86E+01
		1048.07		79.60	3.02E+01		1.19E+02
		1235.34		19.70	8.49E+01		5.85E+02
+	CS-137	661.65		85.12	3.95E-01	3.26E+00	3.26E+00
+	LA-138	788.74		34.00	-4.04E-01	5.29E+00	8.21E+00
		1435.80		66.00	-2.00E+00		5.29E+00
+	CE-139	165.85		80.35	2.89E+00	2.75E+00	2.75E+00

Analysis Report for 1508105-03

ENGWESA001

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/sample)	Nuclide MDA (pCi/sample)	Line MDA (pCi/sample)
+	BA-140	162.64	6.70	4.43E+02	2.91E+02	7.87E+02
		304.84	4.50	-5.79E+02		1.55E+03
		423.70	3.20	1.00E+02		2.09E+03
		437.55	2.00	-3.04E+02		3.45E+03
		537.32	25.00	4.31E+00		2.91E+02
+	LA-140	328.77	20.50	-1.67E+02	1.24E+02	3.11E+02
		487.03	45.50	-1.09E+02		1.50E+02
		815.85	23.50	1.01E+02		3.98E+02
		1596.49	95.49	-3.81E+01		1.24E+02
+	CE-141	145.44	48.40	1.20E+01	1.28E+01	1.28E+01
+	CE-143	57.36	11.80	-1.59E+13	7.14E+14	1.17E+15
		293.26	42.00	7.38E+13		7.14E+14
		664.55	5.20	7.24E+15		7.35E+15
+	CE-144	133.54	10.80	2.48E+00	1.49E+01	1.49E+01
+	PM-144	476.78	42.00	3.08E+02	3.02E+00	2.83E+01
		618.01	98.60	-1.09E+00		3.02E+00
		696.49	99.49	3.00E-01		3.36E+00
+	PM-145	36.85	21.70	5.69E+00	5.70E+00	1.09E+01
		37.36	39.70	2.55E-02		5.70E+00
		42.30	15.10	5.23E+00		1.16E+01
		72.40	2.31	8.31E-01		4.94E+01
+	PM-146	453.90	39.94	-4.57E+00	5.44E+00	5.44E+00
		735.90	14.01	1.66E+01		2.15E+01
		747.13	13.10	-5.65E+00		1.98E+01
+	ND-147	91.11	28.90	3.48E+02	3.48E+02	3.48E+02
		531.02	13.10	1.80E+02		1.00E+03
+	PM-149	285.90	3.10	9.83E+09	4.03E+10	4.03E+10
+	EU-152	121.78	20.50	-2.89E+00	6.31E+00	6.31E+00
		244.69	5.40	1.22E+01		3.79E+01
		344.27	19.13	-3.04E+00		9.63E+00
		778.89	9.20	-4.14E+00		2.90E+01
		964.01	10.40	-1.13E+01		2.83E+01
		1085.78	7.22	-9.22E+00		4.34E+01
		1112.02	9.60	5.26E+00		3.95E+01
		1407.95	14.94	1.66E-01		2.54E+01
+	GD-153	97.43	31.30	-5.68E-01	4.65E+00	4.65E+00
		103.18	22.20	1.72E+00		6.34E+00
+	EU-154	123.07	40.50	2.40E+00	3.35E+00	3.35E+00
		723.30	19.70	-1.05E+01		1.38E+01
		873.19	11.50	2.12E+00		2.40E+01
		996.32	10.30	-3.48E+01		2.93E+01
		1004.76	17.90	-5.02E-02		2.00E+01
		1274.45	35.50	-1.82E+00		8.76E+00
+	EU-155	86.50	30.90	-1.27E+00	4.06E+00	4.06E+00
		105.30	20.70	1.61E+00		5.85E+00
+	EU-156	811.77	10.40	-1.64E+02	4.58E+02	4.58E+02
		1153.47	7.20	1.32E+01		9.03E+02
		1230.71	8.90	-6.04E+01		7.58E+02
+	HO-166M	184.41	72.60	6.66E+00	3.08E+00	3.08E+00

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	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/sample)	Nuclide MDA (pCi/sample)	Line MDA (pCi/sample)
	HO-166M	280.45		29.60	-4.99E+00	3.08E+00	6.71E+00
		410.94		11.10	4.79E+00		1.94E+01
		711.69		54.10	1.47E+00		5.29E+00
+	TM-171	66.72		0.14	-3.63E+03	9.04E+02	9.04E+02
+	HF-172	81.75		4.52	-9.90E+00	1.27E+01	2.71E+01
		125.81		11.30	6.64E-03		1.27E+01
+	LU-172	181.53		20.60	-6.82E+03	4.16E+03	6.19E+03
		810.06		16.63	-3.13E+03		1.27E+04
		912.12		15.25	5.10E+03		1.66E+04
		1093.66		62.50	-9.83E+02		4.16E+03
+	LU-173	100.72		5.24	4.32E+00	9.91E+00	2.48E+01
		272.11		21.20	6.41E-01		9.91E+00
+	HF-175	343.40		84.00	-2.59E+00	4.07E+00	4.07E+00
+	LU-176	88.34		13.30	-1.24E+01	1.88E+00	9.24E+00
		201.83		86.00	-8.81E-01		1.88E+00
		306.78		94.00	1.03E+00		2.32E+00
+	TA-182	67.75		41.20	-1.22E+00	4.13E+00	4.13E+00
		1121.30		34.90	5.59E+00		1.54E+01
		1189.05		16.23	6.83E+00		2.68E+01
		1221.41		26.98	-1.26E-01		2.06E+01
		1231.02		11.44	-3.66E+00		4.60E+01
+	IR-192	308.46		29.68	4.29E+00	8.79E+00	1.31E+01
		468.07		48.10	3.53E+00		8.79E+00
+	HG-203	279.19		77.30	-2.54E+00	6.72E+00	6.72E+00
+	BI-207	569.67	*	97.72	1.71E+00	3.08E+00	3.08E+00
		1063.62		74.90	-1.26E+00		4.52E+00
+	TL-208	583.14		30.22	8.07E+00	9.01E+00	9.01E+00
		860.37		4.48	3.06E+01		7.18E+01
		2614.66		35.85	1.07E+01		1.39E+01
+	BI-210M	262.00		45.00	1.40E+00	4.54E+00	4.54E+00
		300.00		23.00	-1.47E+00		9.40E+00
+	PB-210	46.50	*	4.25	4.15E+02	5.24E+01	5.24E+01
+	PB-211	404.84		2.90	-8.94E+00	5.86E+01	5.86E+01
		831.96		2.90	-7.85E+01		9.46E+01
+	BI-212	727.17		11.80	2.87E+00	2.37E+01	2.37E+01
		1620.62		2.75	-4.72E+01		1.11E+02
+	PB-212	238.63		44.60	1.08E+00	4.61E+00	4.61E+00
		300.09		3.41	-9.90E+00		6.34E+01
+	BI-214	609.31		46.30	-8.00E-01	6.37E+00	6.37E+00
		1120.29		15.10	1.44E+01		2.46E+01
		1764.49		15.80	1.28E+01		2.78E+01
		2204.22		4.98	2.56E+01		7.81E+01
+	PB-214	295.21		19.19	2.59E+00	5.14E+00	1.21E+01
		351.92		37.19	1.04E+00		5.14E+00
+	RN-219	401.80		6.50	3.24E+00	2.81E+01	2.81E+01
+	RA-223	323.87		3.88	2.48E+01	5.44E+01	5.44E+01
+	RA-224	240.98		3.95	4.76E+01	5.46E+01	5.46E+01
+	RA-225	40.00		31.00	-3.31E+01	1.21E+02	1.21E+02

Analysis Report for 1508105-03

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	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/sample)	Nuclide MDA (pCi/sample)	Line MDA (pCi/sample)
+	RA-226	186.21	3.28	1.43E+02	6.94E+01	6.94E+01
+	TH-227	50.10	8.40	-7.45E-02	1.61E+01	1.94E+01
		236.00	11.50	-1.46E+01		1.61E+01
		256.20	6.30	2.54E+01		3.24E+01
+	AC-228	338.32	11.40	3.63E+00	1.17E+01	1.78E+01
		911.07	27.70	5.00E+00		1.17E+01
		969.11	16.60	-4.57E+00		1.91E+01
+	TH-230	48.44	16.90	9.99E+01	1.58E+01	1.58E+01
		62.85	4.60	8.54E+01		3.23E+01
		67.67	0.37	-9.21E+01		3.11E+02
+	PA-231	283.67	1.60	9.54E+01	9.39E+01	1.34E+02
		302.67	2.30	2.88E+01		9.39E+01
+	TH-231	25.64	14.70	-1.37E+02	1.91E+01	1.15E+02
		84.21	6.40	5.84E+00		1.91E+01
+	PA-233	311.98	38.60	-2.21E+00	2.72E+01	2.72E+01
+	PA-234	131.20	20.40	1.20E+00	6.81E+00	6.81E+00
		733.99	8.80	1.16E+01		3.26E+01
		946.00	12.00	1.74E+01		2.75E+01
+	PA-234M	1001.03	0.92	3.15E+02	4.37E+02	4.37E+02
+	TH-234	63.29	3.80	7.91E+01	3.91E+01	3.91E+01
+	U-235	143.76	10.50	1.67E+01	1.49E+01	1.49E+01
		163.35	4.70	-5.35E+00		3.36E+01
		205.31	4.70	9.97E+00		3.64E+01
+	NP-237	86.50	12.60	-3.05E+00	9.71E+00	9.71E+00
+	NP-239	106.10	22.70	2.51E+08	9.08E+08	9.08E+08
		228.18	10.70	-2.34E+08		2.81E+09
		277.60	14.10	6.23E+08		2.51E+09
+	AM-241	59.54	35.90	-4.51E+00	2.99E+00	2.99E+00
+	AM-243	74.67	66.00	-6.13E-01	1.79E+00	1.79E+00
+	CM-243	209.75	3.29	-2.48E+00	1.46E+01	5.49E+01
		228.14	10.60	-1.37E+00		1.64E+01
		277.60	14.00	3.63E+00		1.46E+01

+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction
? = CAUTION: MDA value is inconsistent with Currie MDA at 95% confidence level

Analysis Report for 1508105-03

ENGWESA001

NUCLIDE MDA REPORT

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

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/sample)	Nuclide MDA (pCi/sample)	Activity (pCi/sample)	Dec. Level (pCi/sample)
+	BE-7	477.59	*	10.42	8.00E+01	8.00E+01	2.60E+03	3.87E+01
	NA-22	1274.54		99.94	3.22E+00	3.22E+00	-6.67E-01	1.43E+00
@	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	3.84E+00	3.84E+00	1.91E+00	1.68E+00
	K-40	1460.81		10.67	4.84E+01	4.84E+01	3.98E+01	2.23E+01
@	AR-41	1293.64		99.16	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	TI-44	67.88		94.40	1.22E+00	1.22E+00	-3.62E-01	5.95E-01
		78.34		96.00	1.24E+00		3.30E-01	6.01E-01
	SC-46	889.25		99.98	5.47E+00	5.47E+00	3.71E+00	2.54E+00
		1120.51		99.99	6.33E+00		3.71E+00	2.91E+00
	V-48	983.52		99.98	5.29E+01	5.29E+01	1.22E+01	2.44E+01
		1312.10		97.50	6.07E+01		1.48E+01	2.73E+01
	CR-51	320.08		9.83	9.79E+01	9.79E+01	-7.38E+01	4.69E+01
	MN-54	834.83		99.97	3.40E+00	3.40E+00	6.58E-01	1.58E+00
	CO-56	846.75		99.96	5.56E+00	5.56E+00	1.36E+00	2.60E+00
		1037.75		14.03	4.07E+01		1.35E+01	1.87E+01
		1238.25		67.00	1.06E+01		2.03E+00	4.84E+00
		1771.40		15.51	3.70E+01		5.28E+00	1.58E+01
		2598.48		16.90	2.89E+01		1.04E+01	1.21E+01
	CO-57	122.06		85.51	1.77E+00	1.77E+00	-8.12E-01	8.58E-01
		136.48		10.60	1.56E+01		-1.15E+01	7.57E+00
	CO-58	810.76		99.40	4.89E+00	4.89E+00	-1.67E+00	2.26E+00
	FE-59	1099.22		56.50	1.62E+01	1.62E+01	-3.06E+00	7.39E+00
		1291.56		43.20	2.04E+01		-4.08E+00	9.11E+00
	CO-60	1173.22		100.00	4.10E+00	3.63E+00	3.09E+00	1.89E+00
		1332.49		100.00	3.63E+00		1.08E+00	1.63E+00
	ZN-65	1115.52		50.75	7.99E+00	7.99E+00	-2.34E+00	3.65E+00
	GA-67	93.31		35.70	4.68E+06	4.68E+06	1.99E+07	2.30E+06
		208.95		2.24	7.03E+07		-3.00E+07	3.40E+07
		300.22		16.00	1.21E+07		-1.88E+06	5.82E+06
	SE-75	121.11		16.70	1.12E+01	3.47E+00	-1.77E+00	5.43E+00
		136.00		59.20	3.47E+00		5.69E-01	1.68E+00
		264.65		59.80	4.70E+00		-2.98E+00	2.27E+00
		279.53		25.20	1.14E+01		-7.49E+00	5.49E+00
		400.65		11.40	2.35E+01		-1.94E+00	1.11E+01
	RB-82	776.52		13.00	1.19E+02	1.19E+02	-6.54E+00	5.54E+01
	RB-83	520.41		46.00	7.78E+00	7.78E+00	-1.96E+00	3.67E+00
		529.64		30.30	1.25E+01		1.61E+00	5.90E+00
		552.65		16.40	2.45E+01		3.88E+00	1.16E+01
	KR-85	513.99		0.43	9.54E+02	9.54E+02	2.10E+03	4.63E+02
	SR-85	513.99		99.27	8.22E+00	8.22E+00	1.81E+01	3.99E+00
	Y-88	898.02		93.40	4.87E+00	4.87E+00	2.30E+00	2.25E+00
		1836.01		99.38	5.42E+00		2.85E+00	2.35E+00
	NB-93M	16.57		9.43	4.54E+03	4.54E+03	-2.59E+03	2.15E+03

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	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/sample)	Nuclide MDA (pCi/sample)	Activity (pCi/sample)	Dec. Level (pCi/sample)
	NB-94	702.63		100.00	2.88E+00	2.63E+00	2.31E-01	1.36E+00
		871.10		100.00	2.63E+00		-8.68E-01	1.21E+00
+	NB-95	765.79	*	99.81	1.00E+01	1.00E+01	6.02E+00	4.68E+00
	NB-95M	235.69		25.00	1.75E+06	1.75E+06	-1.60E+06	8.46E+05
	ZR-95	724.18		43.70	1.34E+01	9.35E+00	1.56E-01	6.28E+00
		756.72		55.30	9.35E+00		-2.58E+00	4.34E+00
	MO-99	181.06		6.20	2.94E+08	2.35E+08	-1.42E+08	1.42E+08
		739.58		12.80	2.35E+08		1.29E+07	1.10E+08
		778.00		4.50	6.80E+08		8.49E+07	3.16E+08
	RU-103	497.08		89.00	7.85E+00	7.85E+00	3.54E+00	3.72E+00
	RU-106	621.84		9.80	2.95E+01	2.95E+01	1.24E+00	1.39E+01
	AG-108M	433.93		89.90	2.39E+00	2.39E+00	-9.87E-01	1.14E+00
		614.37		90.40	3.09E+00		1.46E-01	1.46E+00
		722.95		90.50	2.96E+00		-2.25E+00	1.39E+00
	CD-109	88.03		3.72	3.56E+01	3.56E+01	-3.47E+01	1.73E+01
	AG-110M	657.75		93.14	3.17E+00	3.17E+00	-6.59E-02	1.48E+00
		677.61		10.53	2.84E+01		-8.42E+00	1.33E+01
		706.67		16.46	1.93E+01		-4.14E+00	9.05E+00
		763.93		21.98	1.59E+01		-6.19E-02	7.43E+00
		884.67		71.63	5.11E+00		-3.48E-01	2.37E+00
		1384.27		23.94	1.78E+01		-1.57E+00	7.97E+00
	CD-113M	263.70		0.02	8.77E+03	8.77E+03	2.25E+02	4.23E+03
	SN-113	255.12		1.93	1.49E+02	4.08E+00	1.75E+00	7.20E+01
		391.69		64.90	4.08E+00		1.08E+00	1.93E+00
	TE123M	159.00		84.10	2.53E+00	2.53E+00	-8.68E-01	1.22E+00
	SB-124	602.71		97.87	5.86E+00	5.86E+00	-4.21E-02	2.78E+00
		645.85		7.26	6.99E+01		1.38E+01	3.28E+01
		722.78		11.10	5.07E+01		-3.84E+01	2.37E+01
		1691.02		49.00	1.53E+01		-7.63E-01	6.69E+00
+	I-125	35.49	*	6.49	8.81E+01	8.81E+01	5.77E+01	4.30E+01
	SB-125	176.33		6.89	2.49E+01	7.93E+00	7.19E+00	1.20E+01
		427.89		29.33	7.93E+00		1.27E+00	3.79E+00
		463.38		10.35	2.17E+01		-3.01E+00	1.03E+01
		600.56		17.80	1.67E+01		3.53E+00	7.93E+00
		635.90		11.32	2.08E+01		-1.21E+01	9.71E+00
	SB-126	414.70		83.30	9.55E+01	9.55E+01	3.18E+01	4.56E+01
		666.33		99.60	1.02E+02		3.87E+00	4.79E+01
		695.00		99.60	1.07E+02		-1.40E+01	5.02E+01
		720.50		53.80	1.90E+02		3.02E+01	8.93E+01
	SN-126	87.57		37.00	3.25E+00	3.25E+00	-3.16E+00	1.58E+00
	SB-127	473.00		25.00	1.19E+06	7.04E+05	4.99E+05	5.72E+05
		685.20		35.70	7.04E+05		-2.73E+05	3.27E+05
		783.80		14.70	2.16E+06		1.94E+05	1.01E+06
	I-129	29.78		57.00	9.43E+00	9.43E+00	3.06E+00	4.59E+00
		33.60		13.20	2.27E+01		-5.44E+00	1.10E+01
		39.58		7.52	2.51E+01		-6.84E+00	1.22E+01
	I-131	284.30		6.05	9.23E+03	6.36E+02	6.16E+03	4.46E+03
		364.48		81.20	6.36E+02		2.86E+02	3.04E+02
		636.97		7.26	8.17E+03		-9.45E+02	3.82E+03
		722.89		1.80	3.86E+04		-2.93E+04	1.80E+04
	TE-132	49.72		13.10	1.13E+07	1.78E+06	-4.35E+04	5.53E+06
		228.16		88.00	1.78E+06		-1.48E+05	8.56E+05
	BA-133	81.00		33.00	3.44E+00	2.99E+00	-6.42E-01	1.67E+00

Analysis Report for 1508105-03

ENGWESA001

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/sample)	Nuclide MDA (pCi/sample)	Activity (pCi/sample)	Dec. Level (pCi/sample)
BA-133	302.84	17.80	1.23E+01	2.99E+00	3.76E+00	5.92E+00
	356.01	60.00	2.99E+00		-1.30E+00	1.42E+00
@ I-133	529.87	86.30	1.00E+26	1.00E+26	1.00E+26	1.00E+20
XE-133	81.00	38.00	1.48E+04	1.48E+04	-2.77E+03	7.20E+03
CS-134	563.23	8.38	2.94E+01	3.09E+00	8.20E+00	1.39E+01
	569.32	15.43	1.69E+01		3.77E+00	8.00E+00
	604.70	97.60	3.09E+00		-2.47E+00	1.47E+00
	795.84	85.40	3.53E+00		8.96E-01	1.64E+00
	801.93	8.73	3.61E+01		-4.72E-01	1.69E+01
CS-135	268.24	16.00	1.25E+01	1.25E+01	2.25E+00	6.03E+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	5.88E+02	8.86E+01	3.27E+02	2.85E+02
	163.89	4.61	1.02E+03		-1.63E+02	4.96E+02
	176.55	13.56	3.61E+02		1.04E+02	1.75E+02
	273.65	12.66	4.69E+02		3.95E+01	2.26E+02
	340.57	48.50	1.22E+02		4.82E+01	5.82E+01
	818.50	99.70	8.86E+01		-1.42E+00	4.13E+01
	1048.07	79.60	1.19E+02		3.02E+01	5.42E+01
	1235.34	19.70	5.85E+02		8.49E+01	2.67E+02
CS-137	661.65	85.12	3.26E+00	3.26E+00	3.95E-01	1.54E+00
LA-138	788.74	34.00	8.21E+00	5.29E+00	-4.04E-01	3.82E+00
	1435.80	66.00	5.29E+00		-2.00E+00	2.35E+00
CE-139	165.85	80.35	2.75E+00	2.75E+00	2.89E+00	1.33E+00
BA-140	162.64	6.70	7.87E+02	2.91E+02	4.43E+02	3.82E+02
	304.84	4.50	1.55E+03		-5.79E+02	7.46E+02
	423.70	3.20	2.09E+03		1.00E+02	9.93E+02
	437.55	2.00	3.45E+03		-3.04E+02	1.64E+03
	537.32	25.00	2.91E+02		4.31E+00	1.37E+02
LA-140	328.77	20.50	3.11E+02	1.24E+02	-1.67E+02	1.49E+02
	487.03	45.50	1.50E+02		-1.09E+02	7.10E+01
	815.85	23.50	3.98E+02		1.01E+02	1.85E+02
	1596.49	95.49	1.24E+02		-3.81E+01	5.45E+01
CE-141	145.44	48.40	1.28E+01	1.28E+01	1.20E+01	6.22E+00
CE-143	57.36	11.80	1.17E+15	7.14E+14	-1.59E+13	5.69E+14
	293.26	42.00	7.14E+14		7.38E+13	3.45E+14
	664.55	5.20	7.35E+15		7.24E+15	3.48E+15
CE-144	133.54	10.80	1.49E+01	1.49E+01	2.48E+00	7.24E+00
PM-144	476.78	42.00	2.83E+01	3.02E+00	3.08E+02	1.40E+01
	618.01	98.60	3.02E+00		-1.09E+00	1.43E+00
	696.49	99.49	3.36E+00		3.00E-01	1.59E+00
PM-145	36.85	21.70	1.09E+01	5.70E+00	5.69E+00	5.28E+00
	37.36	39.70	5.70E+00		2.55E-02	2.77E+00
	42.30	15.10	1.16E+01		5.23E+00	5.65E+00
	72.40	2.31	4.94E+01		8.31E-01	2.40E+01
PM-146	453.90	39.94	5.44E+00	5.44E+00	-4.57E+00	2.59E+00
	735.90	14.01	2.15E+01		1.66E+01	1.01E+01
	747.13	13.10	1.98E+01		-5.65E+00	9.19E+00
ND-147	91.11	28.90	3.48E+02	3.48E+02	3.48E+02	1.70E+02
	531.02	13.10	1.00E+03		1.80E+02	4.75E+02
PM-149	285.90	3.10	4.03E+10	4.03E+10	9.83E+09	1.94E+10
EU-152	121.78	20.50	6.31E+00	6.31E+00	-2.89E+00	3.06E+00

Analysis Report for 1508105-03

ENGWESA001

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/sample)	Nuclide MDA (pCi/sample)	Activity (pCi/sample)	Dec. Level (pCi/sample)
	EU-152	244.69		5.40	3.79E+01	6.31E+00	1.22E+01	1.84E+01
		344.27		19.13	9.63E+00		-3.04E+00	4.60E+00
		778.89		9.20	2.90E+01		-4.14E+00	1.35E+01
		964.01		10.40	2.83E+01		-1.13E+01	1.30E+01
		1085.78		7.22	4.34E+01		-9.22E+00	1.97E+01
		1112.02		9.60	3.95E+01		5.26E+00	1.82E+01
		1407.95		14.94	2.54E+01		1.66E-01	1.14E+01
	GD-153	97.43		31.30	4.65E+00	4.65E+00	-5.68E-01	2.26E+00
		103.18		22.20	6.34E+00		1.72E+00	3.07E+00
	EU-154	123.07		40.50	3.35E+00	3.35E+00	2.40E+00	1.62E+00
		723.30		19.70	1.38E+01		-1.05E+01	6.45E+00
		873.19		11.50	2.40E+01		2.12E+00	1.11E+01
		996.32		10.30	2.93E+01		-3.48E+01	1.34E+01
		1004.76		17.90	2.00E+01		-5.02E-02	9.27E+00
		1274.45		35.50	8.76E+00		-1.82E+00	3.89E+00
	EU-155	86.50		30.90	4.06E+00	4.06E+00	-1.27E+00	1.97E+00
		105.30		20.70	5.85E+00		1.61E+00	2.83E+00
	EU-156	811.77		10.40	4.58E+02	4.58E+02	-1.64E+02	2.11E+02
		1153.47		7.20	9.03E+02		1.32E+01	4.11E+02
		1230.71		8.90	7.58E+02		-6.04E+01	3.44E+02
	HO-166M	184.41		72.60	3.08E+00	3.08E+00	6.66E+00	1.51E+00
		280.45		29.60	6.71E+00		-4.99E+00	3.23E+00
		410.94		11.10	1.94E+01		4.79E+00	9.27E+00
		711.69		54.10	5.29E+00		1.47E+00	2.49E+00
	TM-171	66.72		0.14	9.04E+02	9.04E+02	-3.63E+03	4.40E+02
	HF-172	81.75		4.52	2.71E+01	1.27E+01	-9.90E+00	1.32E+01
		125.81		11.30	1.27E+01		6.64E-03	6.16E+00
	LU-172	181.53		20.60	6.19E+03	4.16E+03	-6.82E+03	2.99E+03
		810.06		16.63	1.27E+04		-3.13E+03	5.87E+03
		912.12		15.25	1.66E+04		5.10E+03	7.69E+03
		1093.66		62.50	4.16E+03		-9.83E+02	1.90E+03
	LU-173	100.72		5.24	2.48E+01	9.91E+00	4.32E+00	1.20E+01
		272.11		21.20	9.91E+00		6.41E-01	4.78E+00
	HF-175	343.40		84.00	4.07E+00	4.07E+00	-2.59E+00	1.94E+00
	LU-176	88.34		13.30	9.24E+00	1.88E+00	-1.24E+01	4.49E+00
		201.83		86.00	1.88E+00		-8.81E-01	9.07E-01
		306.78		94.00	2.32E+00		1.03E+00	1.12E+00
	TA-182	67.75		41.20	4.13E+00	4.13E+00	-1.22E+00	2.01E+00
		1121.30		34.90	1.54E+01		5.59E+00	7.08E+00
		1189.05		16.23	2.68E+01		6.83E+00	1.20E+01
		1221.41		26.98	2.06E+01		-1.26E-01	9.42E+00
		1231.02		11.44	4.60E+01		-3.66E+00	2.09E+01
	IR-192	308.46		29.68	1.31E+01	8.79E+00	4.29E+00	6.30E+00
		468.07		48.10	8.79E+00		3.53E+00	4.19E+00
	HG-203	279.19		77.30	6.72E+00	6.72E+00	-2.54E+00	3.24E+00
+	BI-207	569.67	*	97.72	3.08E+00	3.08E+00	1.71E+00	1.47E+00
		1063.62		74.90	4.52E+00		-1.26E+00	2.08E+00
	TL-208	583.14		30.22	9.01E+00	9.01E+00	8.07E+00	4.28E+00
		860.37		4.48	7.18E+01		3.06E+01	3.35E+01
		2614.66		35.85	1.39E+01		1.07E+01	6.35E+00
	BI-210M	262.00		45.00	4.54E+00	4.54E+00	1.40E+00	2.19E+00
		300.00		23.00	9.40E+00		-1.47E+00	4.54E+00
+	PB-210	46.50	*	4.25	5.24E+01	5.24E+01	4.15E+02	2.57E+01

Analysis Report for 1508105-03

ENGWESA001

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/sample)	Nuclide MDA (pCi/sample)	Activity (pCi/sample)	Dec. Level (pCi/sample)
PB-211	404.84	2.90	5.86E+01	5.86E+01	-8.94E+00	2.76E+01
	831.96	2.90	9.46E+01		-7.85E+01	4.38E+01
BI-212	727.17	11.80	2.37E+01	2.37E+01	2.87E+00	1.11E+01
	1620.62	2.75	1.11E+02		-4.72E+01	4.76E+01
PB-212	238.63	44.60	4.61E+00	4.61E+00	1.08E+00	2.23E+00
	300.09	3.41	6.34E+01		-9.90E+00	3.06E+01
BI-214	609.31	46.30	6.37E+00	6.37E+00	-8.00E-01	3.03E+00
	1120.29	15.10	2.46E+01		1.44E+01	1.13E+01
	1764.49	15.80	2.78E+01		1.28E+01	1.24E+01
	2204.22	4.98	7.81E+01		2.56E+01	3.41E+01
PB-214	295.21	19.19	1.21E+01	5.14E+00	2.59E+00	5.86E+00
	351.92	37.19	5.14E+00		1.04E+00	2.46E+00
RN-219	401.80	6.50	2.81E+01	2.81E+01	3.24E+00	1.33E+01
RA-223	323.87	3.88	5.44E+01	5.44E+01	2.48E+01	2.62E+01
RA-224	240.98	3.95	5.46E+01	5.46E+01	4.76E+01	2.65E+01
RA-225	40.00	31.00	1.21E+02	1.21E+02	-3.31E+01	5.90E+01
RA-226	186.21	3.28	6.94E+01	6.94E+01	1.43E+02	3.39E+01
TH-227	50.10	8.40	1.94E+01	1.61E+01	-7.45E-02	9.47E+00
	236.00	11.50	1.61E+01		-1.46E+01	7.76E+00
	256.20	6.30	3.24E+01		2.54E+01	1.57E+01
AC-228	338.32	11.40	1.78E+01	1.17E+01	3.63E+00	8.56E+00
	911.07	27.70	1.17E+01		5.00E+00	5.42E+00
	969.11	16.60	1.91E+01		-4.57E+00	8.79E+00
TH-230	48.44	16.90	1.58E+01	1.58E+01	9.99E+01	7.78E+00
	62.85	4.60	3.23E+01		8.54E+01	1.58E+01
	67.67	0.37	3.11E+02		-9.21E+01	1.51E+02
PA-231	283.67	1.60	1.34E+02	9.39E+01	9.54E+01	6.49E+01
	302.67	2.30	9.39E+01		2.88E+01	4.53E+01
TH-231	25.64	14.70	1.15E+02	1.91E+01	-1.37E+02	5.64E+01
	84.21	6.40	1.91E+01		5.84E+00	9.27E+00
PA-233	311.98	38.60	2.72E+01	2.72E+01	-2.21E+00	1.31E+01
PA-234	131.20	20.40	6.81E+00	6.81E+00	1.20E+00	3.30E+00
	733.99	8.80	3.26E+01		1.16E+01	1.53E+01
	946.00	12.00	2.75E+01		1.74E+01	1.28E+01
PA-234M	1001.03	0.92	4.37E+02	4.37E+02	3.15E+02	2.04E+02
TH-234	63.29	3.80	3.91E+01	3.91E+01	7.91E+01	1.92E+01
U-235	143.76	10.50	1.49E+01	1.49E+01	1.67E+01	7.25E+00
	163.35	4.70	3.36E+01		-5.35E+00	1.63E+01
	205.31	4.70	3.64E+01		9.97E+00	1.76E+01
NP-237	86.50	12.60	9.71E+00	9.71E+00	-3.05E+00	4.72E+00
NP-239	106.10	22.70	9.08E+08	9.08E+08	2.51E+08	4.40E+08
	228.18	10.70	2.81E+09		-2.34E+08	1.36E+09
	277.60	14.10	2.51E+09		6.23E+08	1.21E+09
AM-241	59.54	35.90	2.99E+00	2.99E+00	-4.51E+00	1.45E+00
AM-243	74.67	66.00	1.79E+00	1.79E+00	-6.13E-01	8.70E-01
CM-243	209.75	3.29	5.49E+01	1.46E+01	-2.48E+00	2.66E+01
	228.14	10.60	1.64E+01		-1.37E+00	7.91E+00
	277.60	14.00	1.46E+01		3.63E+00	7.05E+00

Analysis Report for 1508105-03

ENGWESA001

+ = 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: ENGWESA001

Elapsed Live time: 14400
Elapsed Real Time: 14402

Channel								
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	107	136	222	634	539	408
25:	122	127	104	94	93	91	97	73
33:	70	78	71	86	112	82	66	70
41:	90	84	103	81	88	212	1055	360
49:	69	73	77	67	72	77	58	73
57:	60	71	64	69	74	75	124	329
65:	106	80	103	94	74	79	83	71
73:	80	79	101	85	100	114	79	64
81:	82	81	78	97	112	80	78	84
89:	84	92	96	138	428	216	96	98
97:	57	77	82	68	68	59	78	62
105:	66	69	58	77	50	66	71	69
113:	81	95	74	72	68	69	72	49
121:	66	75	70	66	74	63	84	57
129:	68	62	75	60	75	75	65	59
137:	56	87	69	84	64	63	60	111
145:	95	62	52	65	59	62	55	74
153:	58	65	57	59	52	47	65	61
161:	70	69	55	87	62	57	68	58
169:	44	52	66	68	65	63	55	79
177:	52	69	64	56	54	58	64	66
185:	88	228	122	71	71	70	55	57
193:	46	60	58	61	63	65	71	45
201:	47	58	49	56	49	65	55	54
209:	53	60	68	65	65	59	55	63
217:	45	48	51	57	53	51	58	66
225:	47	48	40	43	52	62	46	45
233:	43	57	50	53	62	45	97	69
241:	54	71	65	60	53	58	71	58
249:	45	60	52	50	43	52	56	60
257:	55	68	41	48	65	62	48	58
265:	47	51	44	57	56	50	52	59
273:	39	34	55	63	53	52	46	42
281:	49	49	53	61	66	48	49	37
289:	47	47	60	64	61	52	63	66
297:	64	63	46	39	52	57	57	36
305:	51	49	47	59	47	42	42	42
313:	34	47	35	36	46	33	42	29
321:	40	37	48	51	43	38	33	44
329:	35	33	32	41	46	26	44	35
337:	36	40	37	36	38	28	35	19
345:	30	30	31	39	26	22	29	47
353:	33	23	18	33	28	27	48	19
361:	24	27	33	24	34	35	32	22

369:	31	30	24	19	29	21	36	24

Sample Title: ENGWESA001

Channel								
377:	24	16	16	26	25	26	26	20
385:	27	10	24	18	19	22	21	16
393:	30	23	20	21	28	18	29	27
401:	22	25	11	26	22	17	18	12
409:	24	23	28	24	26	14	19	23
417:	22	22	15	12	11	21	19	19
425:	18	19	19	19	23	25	27	19
433:	23	18	12	17	20	23	21	18
441:	16	17	18	25	19	22	20	17
449:	20	29	11	22	24	19	13	19
457:	14	25	22	19	19	17	22	9
465:	17	14	22	15	18	26	25	19
473:	15	11	28	64	740	1626	431	53
481:	43	28	14	21	13	13	9	14
489:	12	19	21	16	11	20	14	15
497:	18	16	20	11	12	13	17	12
505:	21	20	16	23	35	75	134	117
513:	48	28	16	17	13	17	16	13
521:	8	15	11	13	20	10	13	14
529:	19	20	12	10	13	12	13	15
537:	12	12	9	14	19	14	14	15
545:	15	13	12	18	12	18	10	18
553:	16	12	11	20	9	17	9	18
561:	13	13	14	16	10	10	12	11
569:	14	23	21	13	17	10	13	12
577:	9	13	8	11	13	16	28	19
585:	21	14	13	8	9	10	14	7
593:	15	9	8	19	17	21	19	13
601:	13	21	19	19	17	12	20	15
609:	27	35	11	11	24	18	16	19
617:	12	14	14	8	17	16	12	15
625:	11	16	10	17	13	17	16	13
633:	11	13	11	9	5	11	7	13
641:	11	8	11	11	13	8	9	13
649:	10	11	8	16	17	8	8	12
657:	14	9	11	9	12	21	15	16
665:	10	14	13	18	6	7	14	10
673:	15	12	14	8	10	10	8	6
681:	16	9	13	7	4	9	8	8
689:	10	10	14	11	16	20	7	11
697:	11	16	16	15	14	11	15	10
705:	8	16	4	15	10	11	10	12
713:	21	10	11	14	8	9	17	4
721:	11	15	13	9	12	7	17	15
729:	11	6	8	7	15	16	9	11
737:	13	11	8	6	7	10	11	12
745:	5	6	5	9	12	9	11	13
753:	13	10	9	7	7	9	7	9
761:	10	5	10	5	11	17	16	9
769:	5	8	10	8	8	10	12	6
777:	6	6	11	9	10	9	5	9
785:	13	12	10	9	8	9	8	6
793:	9	7	9	11	9	9	9	7

801:	9	8	13	8	14	11	10	10

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

1233:	5	6	2	6	7	8	6	6

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

1665:	0	1	2	5	3	1	2	2

Sample Title: ENGWESA001

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

2097:	1	2	2	3	3	0	2	4

Sample Title: ENGWESA001

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

2529:	1	1	0	2	0	1	4	1

Sample Title: ENGWESA001

Channel								
2537:	0	0	0	2	0	0	0	1
2545:	2	0	0	2	0	1	1	0
2553:	1	0	2	0	1	0	1	0
2561:	1	1	2	0	2	1	0	1
2569:	1	3	1	2	1	1	5	5
2577:	0	1	1	1	2	2	4	1
2585:	2	2	1	1	1	1	0	0
2593:	1	1	0	0	1	1	1	0
2601:	0	5	0	1	0	2	0	4
2609:	1	2	3	7	10	4	6	2
2617:	1	0	1	3	3	2	0	0
2625:	0	5	2	2	2	1	2	1
2633:	2	0	2	0	0	0	2	1
2641:	1	0	1	2	0	1	3	0
2649:	1	3	0	0	0	1	0	0
2657:	0	0	1	0	2	0	2	1
2665:	1	1	0	0	0	1	1	0
2673:	1	2	1	2	3	2	0	2
2681:	0	0	0	0	2	0	1	1
2689:	0	2	1	1	1	0	1	1
2697:	1	0	0	0	2	1	2	1
2705:	0	1	2	0	0	1	0	0
2713:	0	0	1	1	0	1	2	0
2721:	0	1	0	0	0	1	0	3
2729:	0	3	1	0	2	1	0	1
2737:	1	0	0	1	1	0	1	3
2745:	0	0	0	2	3	0	2	1
2753:	1	0	1	1	2	1	0	1
2761:	1	1	0	3	1	0	2	0
2769:	1	1	2	0	0	2	0	2
2777:	0	0	1	0	0	1	1	4
2785:	0	1	2	1	1	0	1	2
2793:	2	0	2	1	2	0	1	0
2801:	1	0	0	1	5	0	0	0
2809:	1	2	1	3	0	1	2	2
2817:	1	0	0	0	1	1	1	1
2825:	0	0	1	2	0	0	1	0
2833:	0	0	1	1	0	2	0	1
2841:	0	1	3	0	0	1	1	2
2849:	4	1	0	1	1	1	2	3
2857:	1	0	1	2	1	1	0	1
2865:	2	1	1	1	1	1	0	0
2873:	2	0	2	0	1	1	2	1
2881:	0	0	0	0	0	0	1	2
2889:	2	0	2	1	0	0	1	0
2897:	0	2	1	1	1	1	1	0
2905:	0	1	0	0	1	1	0	1
2913:	0	1	2	0	1	0	0	1
2921:	1	0	0	3	0	1	1	3
2929:	2	0	0	2	1	1	1	1
2937:	0	1	0	0	3	0	1	1
2945:	5	0	0	0	2	1	0	0
2953:	2	2	1	0	1	2	1	1

2961:	0	3	1	2	1	1	1	3

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

3393:	0	0	2	0	2	4	1	0

Sample Title: ENGWESA001

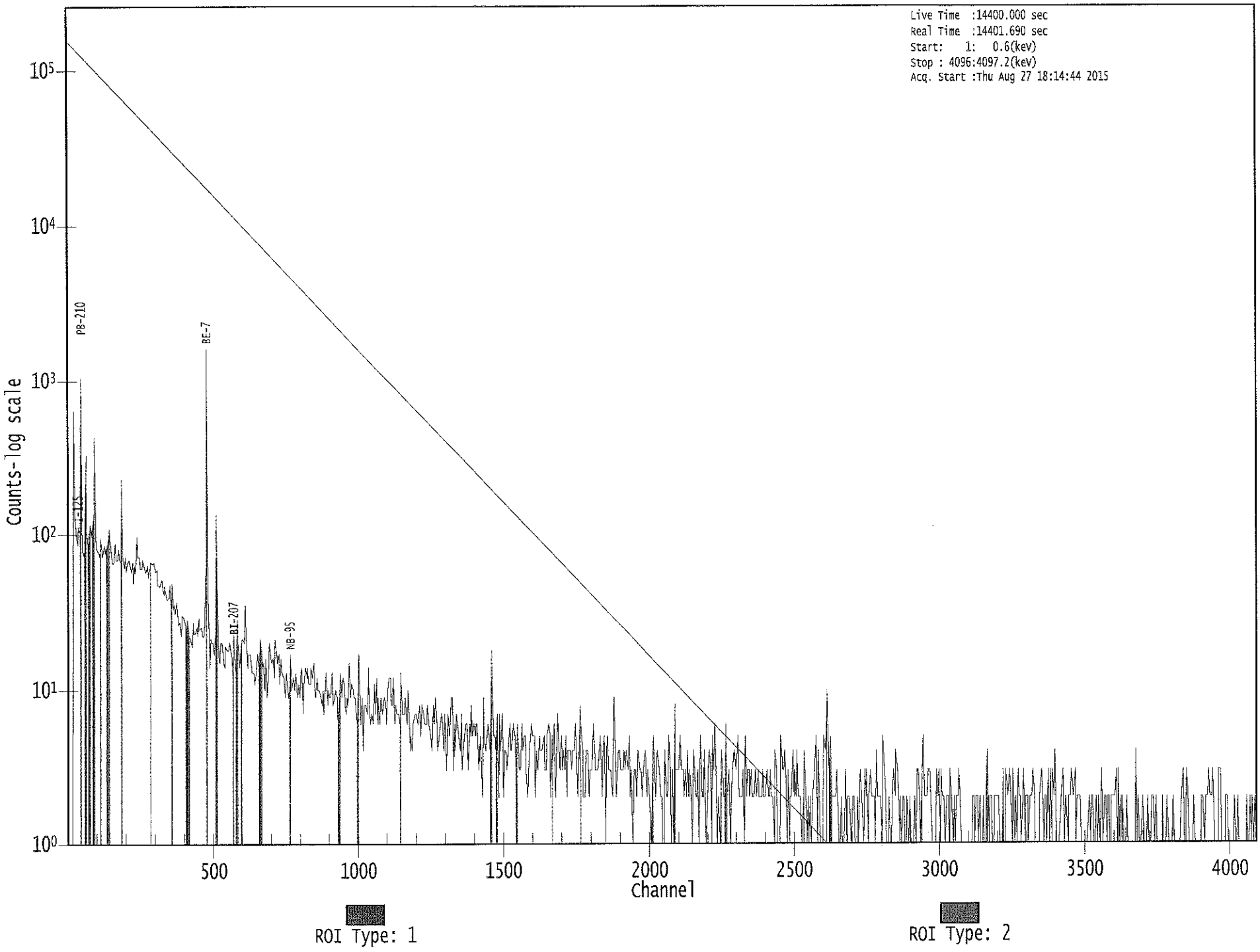
Channel								
3401:	0	1	1	0	1	1	1	0
3409:	0	1	1	1	0	1	0	0
3417:	0	0	1	2	1	2	0	0
3425:	1	3	0	0	0	1	0	0
3433:	0	2	0	0	2	1	1	1
3441:	0	0	0	1	2	0	0	1
3449:	1	2	1	1	2	3	1	1
3457:	0	1	2	2	1	1	2	1
3465:	1	0	1	3	1	0	0	0
3473:	1	0	2	0	0	1	2	0
3481:	1	0	0	2	1	1	0	1
3489:	0	0	0	0	0	0	1	0
3497:	0	0	1	0	0	0	1	0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

3825:	0	1	1	0	0	0	1	2

Sample Title: ENGWESA001

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

0000026552.CNF



Apex-Gamma

Analysis Report for 1508105-04
ENGWESA001

8/28

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 1508105-04
Sample Description	: ENGWESA001
Sample Type	: FILTER
Sample Size	: 5.900E-01 sample
Facility	: Countroom
Sample Taken On	: 6/24/2015 9:09:05AM
Acquisition Started	: 8/28/2015 6:10:26AM
Procedure	: GAF-14 pCi
Operator	: Administrator
Detector Name	: GE1
Geometry	: GAF-14
Live Time	: 14400.0 seconds
Real Time	: 14401.7 seconds
Dead Time	: 0.01 %
Peak Locate Threshold	: 2.50
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 18 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 10/25/2014
Efficiency Calibration Used Done On	: 10/25/2014
Efficiency Calibration Description	:
Sample Number	: 26566

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
8/31/15

Analysis Report for 1508105-04

ENGWESA001

PEAK LOCATE REPORT

Peak Locate Performed on : 8/28/2015 10:10:32AM
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	46.68	47.03	0.0000	0.00
2	76.55	76.89	0.0000	0.00
3	351.64	351.89	0.0000	0.00
4	360.39	360.64	0.0000	0.00
5	477.67	477.88	0.0000	0.00
6	511.10	511.29	0.0000	0.00
7	519.78	519.98	0.0000	0.00
8	696.58	696.71	0.0000	0.00
9	767.91	768.01	0.0000	0.00
10	989.23	989.26	0.0000	0.00
11	1000.90	1000.92	0.0000	0.00
12	1103.34	1103.32	0.0000	0.00
13	1151.72	1151.69	0.0000	0.00
14	1220.79	1220.74	0.0000	0.00
15	1241.11	1241.04	0.0000	0.00
16	1474.15	1474.00	0.0000	0.00
17	1623.50	1623.30	0.0000	0.00
18	1632.12	1631.92	0.0000	0.00
19	1679.97	1679.75	0.0000	0.00
20	1741.48	1741.23	0.0000	0.00
21	1744.48	1744.23	0.0000	0.00
22	1755.55	1755.30	0.0000	0.00
23	1763.37	1763.11	0.0000	0.00
24	1782.18	1781.92	0.0000	0.00
25	1935.84	1935.52	0.0000	0.00
26	2004.14	2003.79	0.0000	0.00
27	2039.49	2039.13	0.0000	0.00
28	2070.39	2070.02	0.0000	0.00
29	2080.16	2079.79	0.0000	0.00
30	2086.08	2085.71	0.0000	0.00
31	2089.72	2089.34	0.0000	0.00
32	2164.54	2164.13	0.0000	0.00
33	2289.54	2289.08	0.0000	0.00
34	2296.65	2296.19	0.0000	0.00
35	2420.75	2420.25	0.0000	0.00
36	2500.36	2499.82	0.0000	0.00
37	2509.83	2509.29	0.0000	0.00
38	2546.29	2545.73	0.0000	0.00
39	2724.29	2723.67	0.0000	0.00
40	2730.96	2730.33	0.0000	0.00
41	2929.21	2928.50	0.0000	0.00
42	3436.52	3435.60	0.0000	0.00

Analysis Report for 1508105-04

ENGWESA001

Peak No.	Energy (keV)	Centroid Channel	Centroid Uncertainty	Peak Significance
43	3631.40	3630.40	0.0000	0.00
44	3698.98	3697.95	0.0000	0.00
45	3886.91	3885.80	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1508105-04

ENGWESA001

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 8/28/2015 10:10:32AM

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	46.68	44 -	50	47.03	1.26E+03	104.38	1.06E+03	1.27
	2	76.55	73 -	80	76.89	9.16E+01	88.90	1.26E+03	3.77
	3	351.64	347 -	355	351.89	1.02E+02	55.63	4.13E+02	1.91
	4	360.39	358 -	362	360.64	2.71E+01	34.23	2.32E+02	1.52
	5	477.67	473 -	482	477.88	2.51E+03	110.46	3.10E+02	1.52
M	6	511.10	505 -	523	511.29	3.88E+02	54.18	2.00E+02	3.08
m	7	519.78	505 -	523	519.98	2.60E+01	38.04	1.83E+02	3.09
	8	696.58	688 -	705	696.71	8.00E+01	65.42	3.60E+02	11.00
	9	767.91	764 -	772	768.01	3.09E+01	33.77	1.54E+02	1.54
	10	989.23	986 -	993	989.26	3.15E+01	21.54	5.69E+01	2.26
	11	1000.90	995 -	1005	1000.92	5.86E+01	28.49	7.67E+01	4.24
	12	1103.34	1099 -	1108	1103.32	2.33E+01	21.89	5.55E+01	4.80
	13	1151.72	1149 -	1154	1151.69	1.55E+01	14.93	3.11E+01	1.37
	14	1220.79	1219 -	1223	1220.74	1.82E+01	13.51	2.35E+01	2.80
	15	1241.11	1236 -	1246	1241.04	2.50E+01	25.91	7.40E+01	1.81
m	16	1474.15	1456 -	1479	1474.00	1.17E+01	13.00	1.40E+01	2.20
	17	1623.50	1621 -	1627	1623.30	1.45E+01	9.82	7.00E+00	3.04
	18	1632.12	1628 -	1636	1631.92	9.50E+00	12.53	1.90E+01	1.88
	19	1679.97	1676 -	1683	1679.75	1.20E+01	12.00	1.60E+01	1.24
M	20	1741.48	1737 -	1750	1741.23	1.96E+01	10.95	4.29E+00	2.53
m	21	1744.48	1737 -	1750	1744.23	7.99E+00	12.17	8.74E+00	2.53
	22	1755.55	1751 -	1759	1755.30	1.50E+01	10.79	8.00E+00	4.01
	23	1763.37	1760 -	1768	1763.11	1.87E+01	18.50	4.25E+01	2.70
	24	1782.18	1780 -	1784	1781.92	8.06E+00	6.50	1.89E+00	2.79
	25	1935.84	1932 -	1939	1935.52	9.83E+00	8.00	4.33E+00	1.36
	26	2004.14	2002 -	2006	2003.79	8.11E+00	6.50	1.78E+00	2.65
	27	2039.49	2032 -	2044	2039.13	1.30E+01	16.28	2.20E+01	1.19
	28	2070.39	2067 -	2072	2070.02	5.95E+00	8.19	8.10E+00	2.67
	29	2080.16	2076 -	2083	2079.79	1.05E+01	9.38	7.00E+00	1.28
M	30	2086.08	2084 -	2091	2085.71	8.29E+00	5.12	6.15E-01	2.49
m	31	2089.72	2084 -	2091	2089.34	6.07E+00	5.85	4.23E+00	3.14
	32	2164.54	2162 -	2167	2164.13	7.00E+00	7.62	6.00E+00	2.69
	33	2289.54	2285 -	2292	2289.08	9.23E+00	9.17	7.54E+00	2.84
	34	2296.65	2293 -	2299	2296.19	9.14E+00	7.50	3.73E+00	3.22
	35	2420.75	2416 -	2423	2420.25	1.30E+01	8.72	4.07E+00	2.97
	36	2500.36	2495 -	2506	2499.82	1.56E+01	10.58	6.84E+00	5.93
	37	2509.83	2507 -	2511	2509.29	5.93E+00	5.85	2.14E+00	1.80
	38	2546.29	2542 -	2548	2545.73	8.89E+00	9.63	1.02E+01	2.60
	39	2724.29	2720 -	2726	2723.67	9.00E+00	6.00	0.00E+00	1.77
	40	2730.96	2727 -	2734	2730.33	9.00E+00	6.00	0.00E+00	1.16

Analysis Report for 1508105-04

ENGWESA001

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
41	2929.21	2924 -	2932	2928.50	1.20E+01	6.93	0.00E+00	1.92
42	3436.52	3431 -	3438	3435.60	5.00E+00	4.47	0.00E+00	1.70
43	3631.40	3627 -	3634	3630.40	6.00E+00	8.49	8.00E+00	4.28
44	3698.98	3692 -	3701	3697.95	7.17E+00	9.90	9.67E+00	3.26
45	3886.91	3883 -	3888	3885.80	5.00E+00	4.47	0.00E+00	2.41

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

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 8/28/2015 10:10:32AM

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	46.68	44 -	50	1.26E+03	104.38	1.06E+03	6.29E+01
	2	76.55	73 -	80	9.16E+01	88.90	1.26E+03	4.11E+01
	3	351.64	347 -	355	1.02E+02	55.63	4.13E+02	4.26E+01
	4	360.39	358 -	362	2.71E+01	34.23	2.32E+02	2.68E+01
	5	477.67	473 -	482	2.51E+03	110.46	3.10E+02	3.83E+01
M	6	511.10	505 -	523	3.88E+02	54.18	2.00E+02	2.32E+01
m	7	519.78	505 -	523	2.60E+01	38.04	1.83E+02	2.23E+01
	8	696.58	688 -	705	8.00E+01	65.42	3.60E+02	5.17E+01
	9	767.91	764 -	772	3.09E+01	33.77	1.54E+02	2.62E+01
	10	989.23	986 -	993	3.15E+01	21.54	5.69E+01	1.51E+01
	11	1000.90	995 -	1005	5.86E+01	28.49	7.67E+01	1.97E+01
	12	1103.34	1099 -	1108	2.33E+01	21.89	5.55E+01	1.61E+01
	13	1151.72	1149 -	1154	1.55E+01	14.93	3.11E+01	1.04E+01
	14	1220.79	1219 -	1223	1.82E+01	13.51	2.35E+01	8.60E+00
	15	1241.11	1236 -	1246	2.50E+01	25.91	7.40E+01	1.96E+01
m	16	1474.15	1456 -	1479	1.17E+01	13.00	1.40E+01	6.15E+00
	17	1623.50	1621 -	1627	1.45E+01	9.82	7.00E+00	5.10E+00
	18	1632.12	1628 -	1636	9.50E+00	12.53	1.90E+01	8.97E+00
	19	1679.97	1676 -	1683	1.20E+01	12.00	1.60E+01	8.05E+00
M	20	1741.48	1737 -	1750	1.96E+01	10.95	4.29E+00	3.40E+00
m	21	1744.48	1737 -	1750	7.99E+00	12.17	8.74E+00	4.86E+00
	22	1755.55	1751 -	1759	1.50E+01	10.79	8.00E+00	6.18E+00

Analysis Report for 1508105-04

ENGWESA001

	Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
	23	1763.37	1760 -	1768	1.87E+01	18.50	4.25E+01	1.34E+01
	24	1782.18	1780 -	1784	8.06E+00	6.50	1.89E+00	2.60E+00
	25	1935.84	1932 -	1939	9.83E+00	8.00	4.33E+00	4.08E+00
	26	2004.14	2002 -	2006	8.11E+00	6.50	1.78E+00	2.57E+00
	27	2039.49	2032 -	2044	1.30E+01	16.28	2.20E+01	1.20E+01
	28	2070.39	2067 -	2072	5.95E+00	8.19	8.10E+00	5.40E+00
	29	2080.16	2076 -	2083	1.05E+01	9.38	7.00E+00	5.58E+00
M	30	2086.08	2084 -	2091	8.29E+00	5.12	6.15E-01	1.29E+00
m	31	2089.72	2084 -	2091	6.07E+00	5.85	4.23E+00	3.38E+00
	32	2164.54	2162 -	2167	7.00E+00	7.62	6.00E+00	4.50E+00
	33	2289.54	2285 -	2292	9.23E+00	9.17	7.54E+00	5.64E+00
	34	2296.65	2293 -	2299	9.14E+00	7.50	3.73E+00	3.65E+00
	35	2420.75	2416 -	2423	1.30E+01	8.72	4.07E+00	4.04E+00
	36	2500.36	2495 -	2506	1.56E+01	10.58	6.84E+00	5.79E+00
	37	2509.83	2507 -	2511	5.93E+00	5.85	2.14E+00	2.67E+00
	38	2546.29	2542 -	2548	8.89E+00	9.63	1.02E+01	6.22E+00
	39	2724.29	2720 -	2726	9.00E+00	6.00	0.00E+00	0.00E+00
	40	2730.96	2727 -	2734	9.00E+00	6.00	0.00E+00	0.00E+00
	41	2929.21	2924 -	2932	1.20E+01	6.93	0.00E+00	0.00E+00
	42	3436.52	3431 -	3438	5.00E+00	4.47	0.00E+00	0.00E+00
	43	3631.40	3627 -	3634	6.00E+00	8.49	8.00E+00	5.70E+00
	44	3698.98	3692 -	3701	7.17E+00	9.90	9.67E+00	6.84E+00
	45	3886.91	3883 -	3888	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 : 8/28/2015 10:10:32AM

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

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
1	46.68	44 -	50	47.03	1.26E+03	104.38	1.06E+03	PB-210
2	76.55	73 -	80	76.89	9.16E+01	88.90	1.26E+03	.....

Analysis Report for 1508105-04

ENGWESA001

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
	3	351.64	347 -	355	351.89	1.02E+02	55.63	4.13E+02	PB-214
	4	360.39	358 -	362	360.64	2.71E+01	34.23	2.32E+02	.....
	5	477.67	473 -	482	477.88	2.51E+03	110.46	3.10E+02	BE-7
									PM-144
M	6	511.10	505 -	523	511.29	3.88E+02	54.18	2.00E+02	.....
m	7	519.78	505 -	523	519.98	2.60E+01	38.04	1.83E+02	RB-83
	8	696.58	688 -	705	696.71	8.00E+01	65.42	3.60E+02	PM-144
	9	767.91	764 -	772	768.01	3.09E+01	33.77	1.54E+02	.....
	10	989.23	986 -	993	989.26	3.15E+01	21.54	5.69E+01	.....
	11	1000.90	995 -	1005	1000.92	5.86E+01	28.49	7.67E+01	PA-234M
	12	1103.34	1099 -	1108	1103.32	2.33E+01	21.89	5.55E+01	.....
	13	1151.72	1149 -	1154	1151.69	1.55E+01	14.93	3.11E+01	.....
	14	1220.79	1219 -	1223	1220.74	1.82E+01	13.51	2.35E+01	TA-182
	15	1241.11	1236 -	1246	1241.04	2.50E+01	25.91	7.40E+01	.....
m	16	1474.15	1456 -	1479	1474.00	1.17E+01	13.00	1.40E+01	.....
	17	1623.50	1621 -	1627	1623.30	1.45E+01	9.82	7.00E+00	.....
	18	1632.12	1628 -	1636	1631.92	9.50E+00	12.53	1.90E+01	.....
	19	1679.97	1676 -	1683	1679.75	1.20E+01	12.00	1.60E+01	.....
M	20	1741.48	1737 -	1750	1741.23	1.96E+01	10.95	4.29E+00	.....
m	21	1744.48	1737 -	1750	1744.23	7.99E+00	12.17	8.74E+00	.....
	22	1755.55	1751 -	1759	1755.30	1.50E+01	10.79	8.00E+00	.....
	23	1763.37	1760 -	1768	1763.11	1.87E+01	18.50	4.25E+01	.....
	24	1782.18	1780 -	1784	1781.92	8.06E+00	6.50	1.89E+00	.....
	25	1935.84	1932 -	1939	1935.52	9.83E+00	8.00	4.33E+00	.....
	26	2004.14	2002 -	2006	2003.79	8.11E+00	6.50	1.78E+00	.....
	27	2039.49	2032 -	2044	2039.13	1.30E+01	16.28	2.20E+01	.....
	28	2070.39	2067 -	2072	2070.02	5.95E+00	8.19	8.10E+00	.....
	29	2080.16	2076 -	2083	2079.79	1.05E+01	9.38	7.00E+00	.....
M	30	2086.08	2084 -	2091	2085.71	8.29E+00	5.12	6.15E-01	.....
m	31	2089.72	2084 -	2091	2089.34	6.07E+00	5.85	4.23E+00	.....
	32	2164.54	2162 -	2167	2164.13	7.00E+00	7.62	6.00E+00	.....
	33	2289.54	2285 -	2292	2289.08	9.23E+00	9.17	7.54E+00	.....
	34	2296.65	2293 -	2299	2296.19	9.14E+00	7.50	3.73E+00	.....
	35	2420.75	2416 -	2423	2420.25	1.30E+01	8.72	4.07E+00	.....
	36	2500.36	2495 -	2506	2499.82	1.56E+01	10.58	6.84E+00	.....
	37	2509.83	2507 -	2511	2509.29	5.93E+00	5.85	2.14E+00	.....
	38	2546.29	2542 -	2548	2545.73	8.89E+00	9.63	1.02E+01	.....
	39	2724.29	2720 -	2726	2723.67	9.00E+00	6.00	0.00E+00	.....
	40	2730.96	2727 -	2734	2730.33	9.00E+00	6.00	0.00E+00	.....
	41	2929.21	2924 -	2932	2928.50	1.20E+01	6.93	0.00E+00	.....
	42	3436.52	3431 -	3438	3435.60	5.00E+00	4.47	0.00E+00	.....
	43	3631.40	3627 -	3634	3630.40	6.00E+00	8.49	8.00E+00	.....
	44	3698.98	3692 -	3701	3697.95	7.17E+00	9.90	9.67E+00	.....
	45	3886.91	3883 -	3888	3885.80	5.00E+00	4.47	0.00E+00	.....

Analysis Report for 1508105-04

ENGWESA001

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 : 8/28/2015 10:10:32AM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	46.68	1.26E+03	104.38	2.17E-01	2.02E-02
	2	76.55	9.16E+01	88.90	2.71E-01	2.45E-02
	3	351.64	1.02E+02	55.63	1.01E-01	1.35E-02
	4	360.39	2.71E+01	34.23	9.86E-02	1.22E-02
	5	477.67	2.51E+03	110.46	7.72E-02	7.84E-03
M	6	511.10	3.88E+02	54.18	7.23E-02	7.96E-03
m	7	519.78	2.60E+01	38.04	7.11E-02	7.99E-03
	8	696.58	8.00E+01	65.42	5.20E-02	8.94E-03
	9	767.91	3.09E+01	33.77	4.63E-02	9.87E-03
	10	989.23	3.15E+01	21.54	3.39E-02	9.13E-03
	11	1000.90	5.86E+01	28.49	3.34E-02	8.82E-03
	12	1103.34	2.33E+01	21.89	2.96E-02	6.06E-03
	13	1151.72	1.55E+01	14.93	2.81E-02	4.76E-03
	14	1220.79	1.82E+01	13.51	2.62E-02	4.27E-03
	15	1241.11	2.50E+01	25.91	2.57E-02	4.31E-03
m	16	1474.15	1.17E+01	13.00	2.13E-02	3.70E-03
	17	1623.50	1.45E+01	9.82	1.96E-02	2.88E-03
	18	1632.12	9.50E+00	12.53	1.95E-02	2.84E-03
	19	1679.97	1.20E+01	12.00	1.91E-02	2.57E-03
M	20	1741.48	1.96E+01	10.95	1.86E-02	2.24E-03
m	21	1744.48	7.99E+00	12.17	1.86E-02	2.22E-03
	22	1755.55	1.50E+01	10.79	1.85E-02	2.16E-03
	23	1763.37	1.87E+01	18.50	1.85E-02	2.12E-03
	24	1782.18	8.06E+00	6.50	1.83E-02	2.02E-03
	25	1935.84	9.83E+00	8.00	1.77E-02	1.72E-03
	26	2004.14	8.11E+00	6.50	1.75E-02	1.72E-03
	27	2039.49	1.30E+01	16.28	1.74E-02	1.72E-03
	28	2070.39	5.95E+00	8.19	1.74E-02	1.72E-03
	29	2080.16	1.05E+01	9.38	1.74E-02	1.72E-03
M	30	2086.08	8.29E+00	5.12	1.74E-02	1.72E-03
m	31	2089.72	6.07E+00	5.85	1.74E-02	1.72E-03
	32	2164.54	7.00E+00	7.62	1.74E-02	1.72E-03
	33	2289.54	9.23E+00	9.17	1.76E-02	1.72E-03
	34	2296.65	9.14E+00	7.50	1.76E-02	1.72E-03

Analysis Report for 1508105-04

ENGWESA001

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
35	2420.75	1.30E+01	8.72	1.81E-02	1.72E-03
36	2500.36	1.56E+01	10.58	1.85E-02	1.72E-03
37	2509.83	5.93E+00	5.85	1.85E-02	1.72E-03
38	2546.29	8.89E+00	9.63	1.88E-02	1.72E-03
39	2724.29	9.00E+00	6.00	2.02E-02	1.72E-03
40	2730.96	9.00E+00	6.00	2.02E-02	1.72E-03
41	2929.21	1.20E+01	6.93	2.25E-02	1.72E-03
42	3436.52	5.00E+00	4.47	3.31E-02	1.72E-03
43	3631.40	6.00E+00	8.49	3.99E-02	1.72E-03
44	3698.98	7.17E+00	9.90	4.27E-02	1.72E-03
45	3886.91	5.00E+00	4.47	5.23E-02	1.72E-03

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 : 8/28/2015 10:10:32AM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000025966.CNF

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	1	46.68	1.26E+03	104.38	1.61E+02	3.37E+01	1.10E+03	1.10E+02
	2	76.55	9.16E+01	88.90			9.16E+01	8.89E+01
	3	351.64	1.02E+02	55.63	3.91E+01	1.76E+01	6.26E+01	5.83E+01
	4	360.39	2.71E+01	34.23			2.71E+01	3.42E+01
	5	477.67	2.51E+03	110.46			2.51E+03	1.10E+02
M	6	511.10	3.88E+02	54.18	3.13E+02	2.18E+01	7.51E+01	5.84E+01
m	7	519.78	2.60E+01	38.04			2.60E+01	3.80E+01
	8	696.58	8.00E+01	65.42			8.00E+01	6.54E+01
	9	767.91	3.09E+01	33.77			3.09E+01	3.38E+01
	10	989.23	3.15E+01	21.54			3.15E+01	2.15E+01
	11	1000.90	5.86E+01	28.49	1.31E+01	1.20E+01	4.55E+01	3.09E+01
	12	1103.34	2.33E+01	21.89			2.33E+01	2.19E+01
	13	1151.72	1.55E+01	14.93			1.55E+01	1.49E+01
	14	1220.79	1.82E+01	13.51			1.82E+01	1.35E+01
	15	1241.11	2.50E+01	25.91			2.50E+01	2.59E+01
m	16	1474.15	1.17E+01	13.00			1.17E+01	1.30E+01
	17	1623.50	1.45E+01	9.82			1.45E+01	9.82E+00
	18	1632.12	9.50E+00	12.53			9.50E+00	1.25E+01
	19	1679.97	1.20E+01	12.00			1.20E+01	1.20E+01

Analysis Report for 1508105-04

ENGWESA001

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
M	20	1741.48	1.96E+01	10.95			1.96E+01	1.10E+01
m	21	1744.48	7.99E+00	12.17			7.99E+00	1.22E+01
	22	1755.55	1.50E+01	10.79			1.50E+01	1.08E+01
	23	1763.37	1.87E+01	18.50			1.87E+01	1.85E+01
	24	1782.18	8.06E+00	6.50			8.06E+00	6.50E+00
	25	1935.84	9.83E+00	8.00			9.83E+00	8.00E+00
	26	2004.14	8.11E+00	6.50			8.11E+00	6.50E+00
	27	2039.49	1.30E+01	16.28			1.30E+01	1.63E+01
	28	2070.39	5.95E+00	8.19			5.95E+00	8.19E+00
	29	2080.16	1.05E+01	9.38			1.05E+01	9.38E+00
M	30	2086.08	8.29E+00	5.12			8.29E+00	5.12E+00
m	31	2089.72	6.07E+00	5.85			6.07E+00	5.85E+00
	32	2164.54	7.00E+00	7.62	2.25E-01	3.86E+00	6.77E+00	8.54E+00
	33	2289.54	9.23E+00	9.17			9.23E+00	9.17E+00
	34	2296.65	9.14E+00	7.50			9.14E+00	7.50E+00
	35	2420.75	1.30E+01	8.72			1.30E+01	8.72E+00
	36	2500.36	1.56E+01	10.58			1.56E+01	1.06E+01
	37	2509.83	5.93E+00	5.85			5.93E+00	5.85E+00
	38	2546.29	8.89E+00	9.63			8.89E+00	9.63E+00
	39	2724.29	9.00E+00	6.00			9.00E+00	6.00E+00
	40	2730.96	9.00E+00	6.00			9.00E+00	6.00E+00
	41	2929.21	1.20E+01	6.93			1.20E+01	6.93E+00
	42	3436.52	5.00E+00	4.47			5.00E+00	4.47E+00
	43	3631.40	6.00E+00	8.49			6.00E+00	8.49E+00
	44	3698.98	7.17E+00	9.90			7.17E+00	9.90E+00
	45	3886.91	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 : 8/28/2015 10:10:32AM

Ref. Peak Energy : 0.00 Reference Date :
Peak Ratio : 0.00 Uncertainty : 0.00
Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000025966.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	46.68	1.26E+03	104.38	1.61E+02	3.37E+01	1.10E+03	1.10E+02
2	76.55	9.16E+01	88.90			9.16E+01	8.89E+01

Analysis Report for 1508105-04

ENGWESA001

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	3	351.64	1.02E+02	55.63	3.91E+01	1.76E+01	6.26E+01	5.83E+01
	4	360.39	2.71E+01	34.23			2.71E+01	3.42E+01
	5	477.67	2.51E+03	110.46			2.51E+03	1.10E+02
M	6	511.10	3.88E+02	54.18	3.13E+02	2.18E+01	7.51E+01	5.84E+01
m	7	519.78	2.60E+01	38.04			2.60E+01	3.80E+01
	8	696.58	8.00E+01	65.42			8.00E+01	6.54E+01
	9	767.91	3.09E+01	33.77			3.09E+01	3.38E+01
	10	989.23	3.15E+01	21.54			3.15E+01	2.15E+01
	11	1000.90	5.86E+01	28.49	1.31E+01	1.20E+01	4.55E+01	3.09E+01
	12	1103.34	2.33E+01	21.89			2.33E+01	2.19E+01
	13	1151.72	1.55E+01	14.93			1.55E+01	1.49E+01
	14	1220.79	1.82E+01	13.51			1.82E+01	1.35E+01
	15	1241.11	2.50E+01	25.91			2.50E+01	2.59E+01
m	16	1474.15	1.17E+01	13.00			1.17E+01	1.30E+01
	17	1623.50	1.45E+01	9.82			1.45E+01	9.82E+00
	18	1632.12	9.50E+00	12.53			9.50E+00	1.25E+01
	19	1679.97	1.20E+01	12.00			1.20E+01	1.20E+01
M	20	1741.48	1.96E+01	10.95			1.96E+01	1.10E+01
m	21	1744.48	7.99E+00	12.17			7.99E+00	1.22E+01
	22	1755.55	1.50E+01	10.79			1.50E+01	1.08E+01
	23	1763.37	1.87E+01	18.50			1.87E+01	1.85E+01
	24	1782.18	8.06E+00	6.50			8.06E+00	6.50E+00
	25	1935.84	9.83E+00	8.00			9.83E+00	8.00E+00
	26	2004.14	8.11E+00	6.50			8.11E+00	6.50E+00
	27	2039.49	1.30E+01	16.28			1.30E+01	1.63E+01
	28	2070.39	5.95E+00	8.19			5.95E+00	8.19E+00
	29	2080.16	1.05E+01	9.38			1.05E+01	9.38E+00
M	30	2086.08	8.29E+00	5.12			8.29E+00	5.12E+00
m	31	2089.72	6.07E+00	5.85			6.07E+00	5.85E+00
	32	2164.54	7.00E+00	7.62	2.25E-01	3.86E+00	6.77E+00	8.54E+00
	33	2289.54	9.23E+00	9.17			9.23E+00	9.17E+00
	34	2296.65	9.14E+00	7.50			9.14E+00	7.50E+00
	35	2420.75	1.30E+01	8.72			1.30E+01	8.72E+00
	36	2500.36	1.56E+01	10.58			1.56E+01	1.06E+01
	37	2509.83	5.93E+00	5.85			5.93E+00	5.85E+00
	38	2546.29	8.89E+00	9.63			8.89E+00	9.63E+00
	39	2724.29	9.00E+00	6.00			9.00E+00	6.00E+00
	40	2730.96	9.00E+00	6.00			9.00E+00	6.00E+00
	41	2929.21	1.20E+01	6.93			1.20E+01	6.93E+00
	42	3436.52	5.00E+00	4.47			5.00E+00	4.47E+00
	43	3631.40	6.00E+00	8.49			6.00E+00	8.49E+00
	44	3698.98	7.17E+00	9.90			7.17E+00	9.90E+00
	45	3886.91	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 1508105-04

ENGWESA001

NUCLIDE IDENTIFICATION REPORT

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

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/sample)	Activity Uncertainty
BE-7	0.992	477.59	*	10.42	2.30E+03	2.55E+02
PM-144	0.319	476.78	*	42.00	2.79E+02	3.10E+01
		618.01		98.60		
		696.49	*	99.49	5.57E+00	4.66E+00
PB-210	0.995	46.50	*	4.25	3.81E+02	5.21E+01
PB-214	0.423	295.21		19.19		
		351.92	*	37.19	5.32E+00	5.01E+00
PA-234M	0.997	1001.03	*	0.92	4.72E+02	3.43E+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 : 8/28/2015 10:10:32AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	2	76.55	6.36352E-03	48.51		
	4	360.39	1.87889E-03	63.27		
M	6	511.10	5.21729E-03	38.88		
m	7	519.78	1.80383E-03	73.22	Tol.	RB-83
	9	767.91	2.14378E-03	54.70		
	10	989.23	2.18981E-03	34.16		
	12	1103.34	1.61560E-03	47.04		
	13	1151.72	1.07415E-03	48.27		
	14	1220.79	1.26620E-03	37.05	Tol.	TA-182

Analysis Report for 1508105-04

ENGWESA001

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	15	1241.11	1.73723E-03	51.79		
m	16	1474.15	8.09863E-04	55.74		
	17	1623.50	1.00694E-03	33.87		
	18	1632.12	6.59722E-04	65.95		
	19	1679.97	8.33333E-04	50.00		
M	20	1741.48	1.36262E-03	27.91		
m	21	1744.48	5.55004E-04	76.11		
	22	1755.55	1.04167E-03	35.98		
	23	1763.37	1.30122E-03	49.37		
	24	1782.18	5.59414E-04	40.34		
	25	1935.84	6.82870E-04	40.68		
	26	2004.14	5.63272E-04	40.07		
	27	2039.49	9.02778E-04	62.61		
	28	2070.39	4.13194E-04	68.78		
	29	2080.16	7.29167E-04	44.67		
M	30	2086.08	5.75508E-04	30.91		
m	31	2089.72	4.21748E-04	48.18		
	32	2164.54	4.70465E-04	63.01		
	33	2289.54	6.41026E-04	49.64		
	34	2296.65	6.34470E-04	41.04		
	35	2420.75	9.00463E-04	33.62		
	36	2500.36	1.08187E-03	33.97		
	37	2509.83	4.11706E-04	49.36		
	38	2546.29	6.17560E-04	54.15		
	39	2724.29	6.25000E-04	33.33		
	40	2730.96	6.25000E-04	33.33		
	41	2929.21	8.33333E-04	28.87		
	42	3436.52	3.47222E-04	44.72		
	43	3631.40	4.16667E-04	70.71		
	44	3698.98	4.97685E-04	69.07		
	45	3886.91	3.47222E-04	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

Analysis Report for 1508105-04

ENGWESA001

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/sample)	Activity Uncertainty
BE-7	0.99	477.59	*	10.42	2.30E+03	2.55E+02
PM-144	0.31	476.78	*	42.00	2.79E+02	3.10E+01
		618.01		98.60		
		696.49	*	99.49	5.57E+00	4.66E+00
PB-210	0.99	46.50	*	4.25	3.81E+02	5.21E+01
PB-214	0.42	295.21		19.19		
		351.92	*	37.19	5.32E+00	5.01E+00
PA-234M	0.99	1001.03	*	0.92	4.72E+02	3.43E+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/sample)	Wt mean Activity Uncertainty	Comments
BE-7	0.992	2.26E+03	2.58E+02	
PM-144	0.319	5.57E+00	4.66E+00	
PB-210	0.995	3.81E+02	5.21E+01	
PB-214	0.423	5.32E+00	5.01E+00	
PA-234M	0.997	4.72E+02	3.43E+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 1508105-04

ENGWESA001

UNIDENTIFIED PEAKS

Peak Locate Performed on : 8/28/2015 10:10:32AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	2	76.55	6.36352E-03	48.51		
	4	360.39	1.87889E-03	63.27		
M	6	511.10	5.21729E-03	38.88		
m	7	519.78	1.80383E-03	73.22	Tol.	RB-83
	9	767.91	2.14378E-03	54.70		
	10	989.23	2.18981E-03	34.16		
	12	1103.34	1.61560E-03	47.04		
	13	1151.72	1.07415E-03	48.27		
	14	1220.79	1.26620E-03	37.05	Tol.	TA-182
	15	1241.11	1.73723E-03	51.79		
m	16	1474.15	8.09863E-04	55.74		
	17	1623.50	1.00694E-03	33.87		
	18	1632.12	6.59722E-04	65.95		
	19	1679.97	8.33333E-04	50.00		
M	20	1741.48	1.36262E-03	27.91		
m	21	1744.48	5.55004E-04	76.11		
	22	1755.55	1.04167E-03	35.98		
	23	1763.37	1.30122E-03	49.37		
	24	1782.18	5.59414E-04	40.34		
	25	1935.84	6.82870E-04	40.68		
	26	2004.14	5.63272E-04	40.07		
	27	2039.49	9.02778E-04	62.61		
	28	2070.39	4.13194E-04	68.78		
	29	2080.16	7.29167E-04	44.67		
M	30	2086.08	5.75508E-04	30.91		
m	31	2089.72	4.21748E-04	48.18		
	32	2164.54	4.70465E-04	63.01		
	33	2289.54	6.41026E-04	49.64		
	34	2296.65	6.34470E-04	41.04		
	35	2420.75	9.00463E-04	33.62		
	36	2500.36	1.08187E-03	33.97		
	37	2509.83	4.11706E-04	49.36		
	38	2546.29	6.17560E-04	54.15		
	39	2724.29	6.25000E-04	33.33		
	40	2730.96	6.25000E-04	33.33		

Analysis Report for 1508105-04

ENGWESA001

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
41	2929.21	8.33333E-04	28.87		
42	3436.52	3.47222E-04	44.72		
43	3631.40	4.16667E-04	70.71		
44	3698.98	4.97685E-04	69.07		
45	3886.91	3.47222E-04	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/sample)	Nuclide MDA (pCi/sample)	Line MDA (pCi/sample)
+	BE-7	477.59	*	10.42	2.30E+03	7.29E+01	7.29E+01
+	NA-22	1274.54		99.94	9.71E-01	3.78E+00	3.78E+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	-8.45E-01	3.52E+00	3.52E+00
+	K-40	1460.81		10.67	3.35E+01	4.75E+01	4.75E+01
+	@ AR-41	1293.64		99.16	1.00E+26	1.00E+26	1.00E+26
+	TI-44	67.88		94.40	-8.84E-01	1.23E+00	1.23E+00
		78.34		96.00	4.33E-01		1.25E+00
+	SC-46	889.25		99.98	-3.68E-01	5.01E+00	5.01E+00
		1120.51		99.99	2.21E+00		6.42E+00
+	V-48	983.52		99.98	1.42E+01	4.96E+01	4.96E+01
		1312.10		97.50	-1.86E+01		5.79E+01
+	CR-51	320.08		9.83	-1.38E+01	1.04E+02	1.04E+02
+	MN-54	834.83		99.97	-1.65E+00	3.43E+00	3.43E+00
+	CO-56	846.75		99.96	-1.72E+00	5.39E+00	5.39E+00
		1037.75		14.03	-1.73E+01		3.44E+01
		1238.25		67.00	1.99E+00		1.08E+01
		1771.40		15.51	2.82E+00		4.43E+01
		2598.48		16.90	2.18E-01		2.77E+01
+	CO-57	122.06		85.51	-1.36E+00	1.69E+00	1.69E+00
		136.48		10.60	-1.94E+01		1.39E+01
+	CO-58	810.76		99.40	-1.92E+00	4.58E+00	4.58E+00
+	FE-59	1099.22		56.50	1.04E+00	1.49E+01	1.49E+01

Analysis Report for 1508105-04

ENGWESA001

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/sample)	Nuclide MDA (pCi/sample)	Line MDA (pCi/sample)
	FE-59	1291.56	43.20	-4.67E+00	1.49E+01	2.29E+01
+	CO-60	1173.22	100.00	-1.78E-01	3.68E+00	3.68E+00
		1332.49	100.00	5.72E-01		4.47E+00
+	ZN-65	1115.52	50.75	2.86E-01	8.93E+00	8.93E+00
+	GA-67	93.31	35.70	1.96E+07	5.03E+06	5.03E+06
		208.95	2.24	-2.95E+07		7.42E+07
		300.22	16.00	4.57E+06		1.37E+07
+	SE-75	121.11	16.70	-1.79E+00	3.12E+00	1.06E+01
		136.00	59.20	-7.47E-01		3.12E+00
		264.65	59.80	-1.46E+00		4.29E+00
		279.53	25.20	-2.30E+00		1.14E+01
		400.65	11.40	5.66E+00		2.33E+01
+	RB-82	776.52	13.00	-1.37E+01	1.11E+02	1.11E+02
+	RB-83	520.41	46.00	-2.84E+00	8.04E+00	8.04E+00
		529.64	30.30	-3.74E-01		1.25E+01
		552.65	16.40	7.39E+00		2.22E+01
+	KR-85	513.99	0.43	2.37E+03	9.73E+02	9.73E+02
+	SR-85	513.99	99.27	2.05E+01	8.42E+00	8.42E+00
+	Y-88	898.02	93.40	6.11E-01	5.27E+00	5.42E+00
		1836.01	99.38	4.58E-01		5.27E+00
+	NB-93M	16.57	9.43	-4.41E+03	4.72E+03	4.72E+03
+	NB-94	702.63	100.00	4.52E-01	2.96E+00	2.96E+00
		871.10	100.00	6.53E-01		3.10E+00
+	NB-95	765.79	99.81	7.23E+00	1.17E+01	1.17E+01
+	NB-95M	235.69	25.00	-9.48E+05	1.97E+06	1.97E+06
+	ZR-95	724.18	43.70	-8.08E-01	9.33E+00	1.20E+01
		756.72	55.30	-1.86E+00		9.33E+00
+	MO-99	181.06	6.20	3.43E+08	2.69E+08	3.50E+08
		739.58	12.80	1.48E+07		2.69E+08
		778.00	4.50	1.63E+08		7.28E+08
+	RU-103	497.08	89.00	-6.55E-01	7.95E+00	7.95E+00
+	RU-106	621.84	9.80	1.64E+00	2.99E+01	2.99E+01
+	AG-108M	433.93	89.90	-1.31E-01	2.34E+00	2.34E+00
		614.37	90.40	-1.75E+00		3.11E+00
		722.95	90.50	-2.93E+00		2.65E+00
+	CD-109	88.03	3.72	-2.32E+01	3.57E+01	3.57E+01
+	AG-110M	657.75	93.14	-6.86E-01	3.27E+00	3.27E+00
		677.61	10.53	-6.34E+00		2.75E+01
		706.67	16.46	8.05E+00		2.04E+01
		763.93	21.98	2.42E+00		1.62E+01
		884.67	71.63	-1.69E+00		4.53E+00
		1384.27	23.94	-1.14E+01		1.32E+01
+	CD-113M	263.70	0.02	2.86E+03	8.07E+03	8.07E+03
+	SN-113	255.12	1.93	-8.08E+01	4.26E+00	1.34E+02
		391.69	64.90	7.16E-01		4.26E+00
+	TE123M	159.00	84.10	-2.61E-01	2.63E+00	2.63E+00
+	SB-124	602.71	97.87	1.19E+00	6.20E+00	6.20E+00
		645.85	7.26	-1.46E+00		7.29E+01

Analysis Report for 1508105-04

ENGWESA001

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/sample)	Nuclide MDA (pCi/sample)	Line MDA (pCi/sample)
	SB-124	722.78	11.10	-5.05E+01	6.20E+00	4.56E+01
		1691.02	49.00	1.87E+00		1.58E+01
+	I-125	35.49	6.49	1.03E+01	8.71E+01	8.71E+01
+	SB-125	176.33	6.89	-5.66E+00	7.38E+00	2.37E+01
		427.89	29.33	-7.36E-01		7.38E+00
		463.38	10.35	3.22E+00		2.27E+01
		600.56	17.80	5.53E+00		1.69E+01
		635.90	11.32	9.10E-01		2.39E+01
+	SB-126	414.70	83.30	6.89E+00	9.12E+01	9.94E+01
		666.33	99.60	-7.02E+01		9.12E+01
		695.00	99.60	2.58E+01		1.24E+02
		720.50	53.80	9.81E+01		1.81E+02
+	SN-126	87.57	37.00	-2.11E+00	3.25E+00	3.25E+00
+	SB-127	473.00	25.00	1.78E+05	8.46E+05	1.23E+06
		685.20	35.70	6.89E+04		8.46E+05
		783.80	14.70	1.57E+03		2.14E+06
+	I-129	29.78	57.00	2.81E+00	9.26E+00	9.26E+00
		33.60	13.20	2.98E+00		2.40E+01
		39.58	7.52	1.55E+00		2.63E+01
+	I-131	284.30	6.05	-1.34E+03	6.24E+02	8.88E+03
		364.48	81.20	1.70E+02		6.24E+02
		636.97	7.26	1.13E+03		9.61E+03
		722.89	1.80	-3.99E+04		3.60E+04
+	TE-132	49.72	13.10	-2.17E+06	1.93E+06	1.20E+07
		228.16	88.00	2.77E+05		1.93E+06
+	BA-133	81.00	33.00	-1.24E+00	2.96E+00	3.47E+00
		302.84	17.80	4.15E+00		1.23E+01
		356.01	60.00	1.69E-01		2.96E+00
+	@ I-133	529.87	86.30	1.00E+26	1.00E+26	1.00E+26
+	XE-133	81.00	38.00	-5.73E+03	1.60E+04	1.60E+04
+	CS-134	563.23	8.38	3.40E-01	3.08E+00	2.92E+01
		569.32	15.43	-2.25E-01		1.72E+01
		604.70	97.60	-4.76E+00		3.08E+00
		795.84	85.40	6.41E-01		3.76E+00
		801.93	8.73	7.43E+00		3.90E+01
+	CS-135	268.24	16.00	-2.83E+00	1.12E+01	1.12E+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	-1.32E+02	9.03E+01	6.05E+02
		163.89	4.61	2.91E+02		1.00E+03
		176.55	13.56	-8.43E+01		3.53E+02
		273.65	12.66	-2.71E+01		4.67E+02
		340.57	48.50	3.80E+01		1.20E+02
		818.50	99.70	6.04E+01		9.03E+01
		1048.07	79.60	-4.31E+01		1.38E+02
		1235.34	19.70	7.18E+01		5.94E+02
+	CS-137	661.65	85.12	8.59E-02	3.09E+00	3.09E+00
+	LA-138	788.74	34.00	2.26E+00	5.06E+00	8.27E+00

Analysis Report for 1508105-04

ENGWESA001

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/sample)	Nuclide MDA (pCi/sample)	Line MDA (pCi/sample)
	LA-138	1435.80		66.00	4.81E-01	5.06E+00	5.06E+00
+	CE-139	165.85		80.35	-2.22E-01	2.57E+00	2.57E+00
+	BA-140	162.64		6.70	-4.38E+02	2.91E+02	7.54E+02
		304.84		4.50	-1.52E+03		1.54E+03
		423.70		3.20	1.43E+01		2.15E+03
		437.55		2.00	2.61E+02		3.68E+03
		537.32		25.00	-1.26E+02		2.91E+02
+	LA-140	328.77		20.50	1.42E+02	1.47E+02	3.33E+02
		487.03		45.50	-3.82E+01		1.54E+02
		815.85		23.50	-4.66E+00		4.02E+02
		1596.49		95.49	2.84E+00		1.47E+02
+	CE-141	145.44		48.40	-2.71E+00	1.18E+01	1.18E+01
+	CE-143	57.36		11.80	6.55E+14	8.44E+14	1.57E+15
		293.26		42.00	-2.40E+14		8.44E+14
		664.55		5.20	-2.62E+15		7.94E+15
+	CE-144	133.54		10.80	3.51E+00	1.42E+01	1.42E+01
+	PM-144	476.78	*	42.00	2.79E+02	3.15E+00	8.82E+00
		618.01		98.60	1.74E-01		3.15E+00
		696.49	*	99.49	5.57E+00		7.40E+00
+	PM-145	36.85		21.70	4.29E+00	5.78E+00	1.11E+01
		37.36		39.70	-3.04E+00		5.78E+00
		42.30		15.10	7.43E+00		1.13E+01
		72.40		2.31	1.36E+01		4.98E+01
+	PM-146	453.90		39.94	3.15E+00	6.25E+00	6.25E+00
		735.90		14.01	-6.64E-01		1.86E+01
		747.13		13.10	-2.51E+00		2.04E+01
+	ND-147	91.11		28.90	3.72E+02	3.54E+02	3.54E+02
		531.02		13.10	3.71E+01		1.03E+03
+	PM-149	285.90		3.10	-2.18E+10	4.44E+10	4.44E+10
+	EU-152	121.78		20.50	-4.84E+00	6.00E+00	6.00E+00
		244.69		5.40	6.62E-01		3.45E+01
		344.27		19.13	2.29E+00		9.31E+00
		778.89		9.20	6.17E+00		2.83E+01
		964.01		10.40	-5.57E+00		3.08E+01
		1085.78		7.22	1.87E+00		4.57E+01
		1112.02		9.60	-2.64E+00		3.58E+01
		1407.95		14.94	1.44E+01		2.75E+01
+	GD-153	97.43		31.30	-8.71E-01	4.59E+00	4.59E+00
		103.18		22.20	3.03E+00		6.34E+00
+	EU-154	123.07		40.50	6.22E-01	3.18E+00	3.18E+00
		723.30		19.70	-1.37E+01		1.24E+01
		873.19		11.50	-1.03E+01		2.59E+01
		996.32		10.30	-3.29E+01		3.03E+01
		1004.76		17.90	-2.19E+00		1.82E+01
		1274.45		35.50	2.64E+00		1.03E+01
+	EU-155	86.50		30.90	-1.22E+00	3.98E+00	3.98E+00
		105.30		20.70	-1.28E+00		5.56E+00
+	EU-156	811.77		10.40	-2.38E+02	4.55E+02	4.55E+02
		1153.47		7.20	6.11E+01		9.36E+02

Analysis Report for 1508105-04

ENGWESA001

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/sample)	Nuclide MDA (pCi/sample)	Line MDA (pCi/sample)
	EU-156	1230.71		8.90	1.20E+02	4.55E+02	8.18E+02
+	HO-166M	184.41		72.60	3.56E+00	2.88E+00	2.88E+00
		280.45		29.60	-6.80E-01		6.70E+00
		410.94		11.10	-1.34E+00		1.99E+01
		711.69		54.10	1.88E+00		5.11E+00
+	TM-171	66.72		0.14	-4.04E+03	9.15E+02	9.15E+02
+	HF-172	81.75		4.52	-1.14E+01	1.25E+01	2.71E+01
		125.81		11.30	2.25E+00		1.25E+01
+	LU-172	181.53		20.60	-5.05E+03	3.98E+03	6.55E+03
		810.06		16.63	-1.90E+03		1.25E+04
		912.12		15.25	-1.15E+03		1.77E+04
		1093.66		62.50	-4.35E+02		3.98E+03
+	LU-173	100.72		5.24	1.07E+00	9.78E+00	2.51E+01
		272.11		21.20	-8.81E-01		9.78E+00
+	HF-175	343.40		84.00	-2.32E-01	4.03E+00	4.03E+00
+	LU-176	88.34		13.30	-8.30E+00	2.01E+00	9.31E+00
		201.83		86.00	-9.25E-01		2.01E+00
		306.78		94.00	1.50E+00		2.34E+00
+	TA-182	67.75		41.20	-3.00E+00	4.17E+00	4.17E+00
		1121.30		34.90	3.39E+00		1.51E+01
		1189.05		16.23	-1.61E+01		2.53E+01
		1221.41		26.98	-3.46E+00		1.99E+01
		1231.02		11.44	7.15E+00		4.87E+01
+	IR-192	308.46		29.68	2.83E+00	8.68E+00	1.34E+01
		468.07		48.10	1.31E+00		8.68E+00
+	HG-203	279.19		77.30	-1.11E+00	6.69E+00	6.69E+00
+	BI-207	569.67		97.72	1.02E+00	2.65E+00	2.65E+00
		1063.62		74.90	1.19E+00		4.37E+00
+	TL-208	583.14		30.22	3.23E-01	7.72E+00	7.72E+00
		860.37		4.48	-2.88E+01		6.93E+01
		2614.66		35.85	6.92E+00		1.18E+01
+	BI-210M	262.00		45.00	7.87E-01	4.18E+00	4.18E+00
		300.00		23.00	3.20E+00		9.58E+00
+	PB-210	46.50	*	4.25	3.81E+02	5.08E+01	5.08E+01
+	PB-211	404.84		2.90	-3.41E+01	6.06E+01	6.06E+01
		831.96		2.90	-7.57E+00		1.02E+02
+	BI-212	727.17		11.80	-4.77E+00	2.21E+01	2.21E+01
		1620.62		2.75	0.00E+00		1.39E+02
+	PB-212	238.63		44.60	3.74E+00	4.68E+00	4.68E+00
		300.09		3.41	2.16E+01		6.46E+01
+	BI-214	609.31		46.30	2.11E+00	6.88E+00	6.88E+00
		1120.29		15.10	8.53E+00		2.49E+01
		1764.49		15.80	1.90E+01		3.34E+01
		2204.22		4.98	3.57E+01		7.81E+01
+	PB-214	295.21		19.19	2.23E+00	8.09E+00	1.14E+01
		351.92	*	37.19	5.32E+00		8.09E+00
+	RN-219	401.80		6.50	6.84E+00	2.81E+01	2.81E+01
+	RA-223	323.87		3.88	7.59E+00	5.24E+01	5.24E+01

Analysis Report for 1508105-04

ENGWESA001

	Nuclide Name	Energy (keV)		Yield(%)	Activity (pCi/sample)	Nuclide MDA (pCi/sample)	Line MDA (pCi/sample)
+	RA-224	240.98		3.95	2.07E+01	5.19E+01	5.19E+01
+	RA-225	40.00		31.00	7.71E+00	1.30E+02	1.30E+02
+	RA-226	186.21		3.28	1.44E+02	6.56E+01	6.56E+01
+	TH-227	50.10		8.40	-3.34E+00	1.64E+01	1.84E+01
		236.00		11.50	-7.90E+00		1.64E+01
		256.20		6.30	-7.67E+00		2.84E+01
+	AC-228	338.32		11.40	4.29E+00	1.20E+01	1.69E+01
		911.07		27.70	8.55E-01		1.20E+01
		969.11		16.60	-5.35E-01		1.98E+01
+	TH-230	48.44		16.90	8.97E+01	1.51E+01	1.51E+01
		62.85		4.60	7.49E+01		3.32E+01
		67.67		0.37	-2.25E+02		3.13E+02
+	PA-231	283.67		1.60	1.02E+01	9.39E+01	1.25E+02
		302.67		2.30	3.17E+01		9.39E+01
+	TH-231	25.64		14.70	-8.85E+01	1.85E+01	1.14E+02
		84.21		6.40	3.98E+00		1.85E+01
+	PA-233	311.98		38.60	-1.17E+01	2.74E+01	2.74E+01
+	PA-234	131.20		20.40	2.00E+00	6.56E+00	6.56E+00
		733.99		8.80	-1.13E+01		2.80E+01
		946.00		12.00	4.29E+00		2.73E+01
+	PA-234M	1001.03	*	0.92	4.72E+02	5.02E+02	5.02E+02
+	TH-234	63.29		3.80	1.03E+02	4.06E+01	4.06E+01
+	U-235	143.76		10.50	1.47E+01	1.45E+01	1.45E+01
		163.35		4.70	9.32E+00		3.20E+01
		205.31		4.70	-9.73E+00		3.65E+01
+	NP-237	86.50		12.60	-2.91E+00	9.52E+00	9.52E+00
+	NP-239	106.10		22.70	-2.30E+08	9.99E+08	9.99E+08
		228.18		10.70	4.57E+08		3.18E+09
		277.60		14.10	4.29E+08		2.83E+09
+	AM-241	59.54		35.90	-7.09E+00	3.05E+00	3.05E+00
+	AM-243	74.67		66.00	-1.75E+00	1.77E+00	1.77E+00
+	CM-243	209.75		3.29	1.11E+01	1.42E+01	5.09E+01
		228.14		10.60	2.30E+00		1.60E+01
		277.60		14.00	2.16E+00		1.42E+01

+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction
? = CAUTION: MDA value is inconsistent with Currie MDA at 95% confidence level

Analysis Report for 1508105-04

ENGWESA001

NUCLIDE MDA REPORT

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

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/sample)	Nuclide MDA (pCi/sample)	Activity (pCi/sample)	Dec. Level (pCi/sample)
+	BE-7	477.59	*	10.42	7.29E+01	7.29E+01	2.30E+03	3.52E+01
	NA-22	1274.54		99.94	3.78E+00	3.78E+00	9.71E-01	1.71E+00
@	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	3.52E+00	3.52E+00	-8.45E-01	1.53E+00
	K-40	1460.81		10.67	4.75E+01	4.75E+01	3.35E+01	2.19E+01
@	AR-41	1293.64		99.16	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	TI-44	67.88		94.40	1.23E+00	1.23E+00	-8.84E-01	5.98E-01
		78.34		96.00	1.25E+00		4.33E-01	6.10E-01
	SC-46	889.25		99.98	5.01E+00	5.01E+00	-3.68E-01	2.31E+00
		1120.51		99.99	6.42E+00		2.21E+00	2.96E+00
	V-48	983.52		99.98	4.96E+01	4.96E+01	1.42E+01	2.27E+01
		1312.10		97.50	5.79E+01		-1.86E+01	2.59E+01
	CR-51	320.08		9.83	1.04E+02	1.04E+02	-1.38E+01	4.98E+01
	MN-54	834.83		99.97	3.43E+00	3.43E+00	-1.65E+00	1.59E+00
	CO-56	846.75		99.96	5.39E+00	5.39E+00	-1.72E+00	2.51E+00
		1037.75		14.03	3.44E+01		-1.73E+01	1.55E+01
		1238.25		67.00	1.08E+01		1.99E+00	4.98E+00
		1771.40		15.51	4.43E+01		2.82E+00	1.95E+01
		2598.48		16.90	2.77E+01		2.18E-01	1.15E+01
	CO-57	122.06		85.51	1.69E+00	1.69E+00	-1.36E+00	8.15E-01
		136.48		10.60	1.39E+01		-1.94E+01	6.72E+00
	CO-58	810.76		99.40	4.58E+00	4.58E+00	-1.92E+00	2.10E+00
	FE-59	1099.22		56.50	1.49E+01	1.49E+01	1.04E+00	6.73E+00
		1291.56		43.20	2.29E+01		-4.67E+00	1.03E+01
	CO-60	1173.22		100.00	3.68E+00	3.68E+00	-1.78E-01	1.68E+00
		1332.49		100.00	4.47E+00		5.72E-01	2.05E+00
	ZN-65	1115.52		50.75	8.93E+00	8.93E+00	2.86E-01	4.12E+00
	GA-67	93.31		35.70	5.03E+06	5.03E+06	1.96E+07	2.47E+06
		208.95		2.24	7.42E+07		-2.95E+07	3.58E+07
		300.22		16.00	1.37E+07		4.57E+06	6.60E+06
	SE-75	121.11		16.70	1.06E+01	3.12E+00	-1.79E+00	5.13E+00
		136.00		59.20	3.12E+00		-7.47E-01	1.51E+00
		264.65		59.80	4.29E+00		-1.46E+00	2.06E+00
		279.53		25.20	1.14E+01		-2.30E+00	5.48E+00
		400.65		11.40	2.33E+01		5.66E+00	1.10E+01
	RB-82	776.52		13.00	1.11E+02	1.11E+02	-1.37E+01	5.13E+01
	RB-83	520.41		46.00	8.04E+00	8.04E+00	-2.84E+00	3.80E+00
		529.64		30.30	1.25E+01		-3.74E-01	5.90E+00
		552.65		16.40	2.22E+01		7.39E+00	1.04E+01
	KR-85	513.99		0.43	9.73E+02	9.73E+02	2.37E+03	4.72E+02
	SR-85	513.99		99.27	8.42E+00	8.42E+00	2.05E+01	4.09E+00

Analysis Report for 1508105-04

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/sample)	Nuclide MDA (pCi/sample)	Activity (pCi/sample)	Dec. Level (pCi/sample)
Y-88	898.02	93.40	5.42E+00	5.27E+00	6.11E-01	2.53E+00
	1836.01	99.38	5.27E+00		4.58E-01	2.27E+00
NB-93M	16.57	9.43	4.72E+03	4.72E+03	-4.41E+03	2.24E+03
NB-94	702.63	100.00	2.96E+00	2.96E+00	4.52E-01	1.39E+00
	871.10	100.00	3.10E+00		6.53E-01	1.44E+00
NB-95	765.79	99.81	1.17E+01	1.17E+01	7.23E+00	5.53E+00
NB-95M	235.69	25.00	1.97E+06	1.97E+06	-9.48E+05	9.52E+05
ZR-95	724.18	43.70	1.20E+01	9.33E+00	-8.08E-01	5.60E+00
	756.72	55.30	9.33E+00		-1.86E+00	4.33E+00
MO-99	181.06	6.20	3.50E+08	2.69E+08	3.43E+08	1.70E+08
	739.58	12.80	2.69E+08		1.48E+07	1.25E+08
	778.00	4.50	7.28E+08		1.63E+08	3.37E+08
RU-103	497.08	89.00	7.95E+00	7.95E+00	-6.55E-01	3.77E+00
RU-106	621.84	9.80	2.99E+01	2.99E+01	1.64E+00	1.41E+01
AG-108M	433.93	89.90	2.34E+00	2.34E+00	-1.31E-01	1.12E+00
	614.37	90.40	3.11E+00		-1.75E+00	1.48E+00
	722.95	90.50	2.65E+00		-2.93E+00	1.23E+00
CD-109	88.03	3.72	3.57E+01	3.57E+01	-2.32E+01	1.74E+01
AG-110M	657.75	93.14	3.27E+00	3.27E+00	-6.86E-01	1.53E+00
	677.61	10.53	2.75E+01		-6.34E+00	1.28E+01
	706.67	16.46	2.04E+01		8.05E+00	9.60E+00
	763.93	21.98	1.62E+01		2.42E+00	7.59E+00
	884.67	71.63	4.53E+00		-1.69E+00	2.08E+00
	1384.27	23.94	1.32E+01		-1.14E+01	5.64E+00
CD-113M	263.70	0.02	8.07E+03	8.07E+03	2.86E+03	3.88E+03
SN-113	255.12	1.93	1.34E+02	4.26E+00	-8.08E+01	6.43E+01
	391.69	64.90	4.26E+00		7.16E-01	2.02E+00
TE123M	159.00	84.10	2.63E+00	2.63E+00	-2.61E-01	1.27E+00
SB-124	602.71	97.87	6.20E+00	6.20E+00	1.19E+00	2.95E+00
	645.85	7.26	7.29E+01		-1.46E+00	3.42E+01
	722.78	11.10	4.56E+01		-5.05E+01	2.12E+01
	1691.02	49.00	1.58E+01		1.87E+00	6.93E+00
I-125	35.49	6.49	8.71E+01	8.71E+01	1.03E+01	4.24E+01
SB-125	176.33	6.89	2.37E+01	7.38E+00	-5.66E+00	1.15E+01
	427.89	29.33	7.38E+00		-7.36E-01	3.51E+00
	463.38	10.35	2.27E+01		3.22E+00	1.08E+01
	600.56	17.80	1.69E+01		5.53E+00	8.06E+00
	635.90	11.32	2.39E+01		9.10E-01	1.13E+01
SB-126	414.70	83.30	9.94E+01	9.12E+01	6.89E+00	4.75E+01
	666.33	99.60	9.12E+01		-7.02E+01	4.26E+01
	695.00	99.60	1.24E+02		2.58E+01	5.87E+01
	720.50	53.80	1.81E+02		9.81E+01	8.45E+01
SN-126	87.57	37.00	3.25E+00	3.25E+00	-2.11E+00	1.58E+00
SB-127	473.00	25.00	1.23E+06	8.46E+05	1.78E+05	5.88E+05
	685.20	35.70	8.46E+05		6.89E+04	3.96E+05
	783.80	14.70	2.14E+06		1.57E+03	9.91E+05
I-129	29.78	57.00	9.26E+00	9.26E+00	2.81E+00	4.51E+00
	33.60	13.20	2.40E+01		2.98E+00	1.16E+01
	39.58	7.52	2.63E+01		1.55E+00	1.28E+01
I-131	284.30	6.05	8.88E+03	6.24E+02	-1.34E+03	4.28E+03
	364.48	81.20	6.24E+02		1.70E+02	2.97E+02
	636.97	7.26	9.61E+03		1.13E+03	4.53E+03
	722.89	1.80	3.60E+04		-3.99E+04	1.67E+04

Analysis Report for 1508105-04

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	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/sample)	Nuclide MDA (pCi/sample)	Activity (pCi/sample)	Dec. Level (pCi/sample)
	TE-132	49.72		13.10	1.20E+07	1.93E+06	-2.17E+06	5.84E+06
		228.16		88.00	1.93E+06		2.77E+05	9.28E+05
	BA-133	81.00		33.00	3.47E+00	2.96E+00	-1.24E+00	1.69E+00
		302.84		17.80	1.23E+01		4.15E+00	5.93E+00
		356.01		60.00	2.96E+00		1.69E-01	1.41E+00
@	I-133	529.87		86.30	1.00E+26	1.00E+26	1.00E+26	1.00E+20
	XE-133	81.00		38.00	1.60E+04	1.60E+04	-5.73E+03	7.77E+03
	CS-134	563.23		8.38	2.92E+01	3.08E+00	3.40E-01	1.38E+01
		569.32		15.43	1.72E+01		-2.25E-01	8.16E+00
		604.70		97.60	3.08E+00		-4.76E+00	1.46E+00
		795.84		85.40	3.76E+00		6.41E-01	1.76E+00
		801.93		8.73	3.90E+01		7.43E+00	1.83E+01
	CS-135	268.24		16.00	1.12E+01	1.12E+01	-2.83E+00	5.40E+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	6.05E+02	9.03E+01	-1.32E+02	2.93E+02
		163.89		4.61	1.00E+03		2.91E+02	4.84E+02
		176.55		13.56	3.53E+02		-8.43E+01	1.71E+02
		273.65		12.66	4.67E+02		-2.71E+01	2.25E+02
		340.57		48.50	1.20E+02		3.80E+01	5.75E+01
		818.50		99.70	9.03E+01		6.04E+01	4.21E+01
		1048.07		79.60	1.38E+02		-4.31E+01	6.38E+01
		1235.34		19.70	5.94E+02		7.18E+01	2.71E+02
	CS-137	661.65		85.12	3.09E+00	3.09E+00	8.59E-02	1.45E+00
	LA-138	788.74		34.00	8.27E+00	5.06E+00	2.26E+00	3.85E+00
		1435.80		66.00	5.06E+00		4.81E-01	2.23E+00
	CE-139	165.85		80.35	2.57E+00	2.57E+00	-2.22E-01	1.24E+00
	BA-140	162.64		6.70	7.54E+02	2.91E+02	-4.38E+02	3.65E+02
		304.84		4.50	1.54E+03		-1.52E+03	7.42E+02
		423.70		3.20	2.15E+03		1.43E+01	1.02E+03
		437.55		2.00	3.68E+03		2.61E+02	1.75E+03
		537.32		25.00	2.91E+02		-1.26E+02	1.37E+02
	LA-140	328.77		20.50	3.33E+02	1.47E+02	1.42E+02	1.60E+02
		487.03		45.50	1.54E+02		-3.82E+01	7.26E+01
		815.85		23.50	4.02E+02		-4.66E+00	1.87E+02
		1596.49		95.49	1.47E+02		2.84E+00	6.60E+01
	CE-141	145.44		48.40	1.18E+01	1.18E+01	-2.71E+00	5.70E+00
	CE-143	57.36		11.80	1.57E+15	8.44E+14	6.55E+14	7.62E+14
		293.26		42.00	8.44E+14		-2.40E+14	4.07E+14
		664.55		5.20	7.94E+15		-2.62E+15	3.72E+15
	CE-144	133.54		10.80	1.42E+01	1.42E+01	3.51E+00	6.85E+00
+	PM-144	476.78	*	42.00	8.82E+00	3.15E+00	2.79E+02	4.26E+00
		618.01		98.60	3.15E+00		1.74E-01	1.49E+00
		696.49	*	99.49	7.40E+00		5.57E+00	3.61E+00
	PM-145	36.85		21.70	1.11E+01	5.78E+00	4.29E+00	5.41E+00
		37.36		39.70	5.78E+00		-3.04E+00	2.81E+00
		42.30		15.10	1.13E+01		7.43E+00	5.52E+00
		72.40		2.31	4.98E+01		1.36E+01	2.42E+01
	PM-146	453.90		39.94	6.25E+00	6.25E+00	3.15E+00	2.99E+00
		735.90		14.01	1.86E+01		-6.64E-01	8.66E+00
		747.13		13.10	2.04E+01		-2.51E+00	9.50E+00
	ND-147	91.11		28.90	3.54E+02	3.54E+02	3.72E+02	1.73E+02

Analysis Report for 1508105-04

ENGWESA001

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/sample)	Nuclide MDA (pCi/sample)	Activity (pCi/sample)	Dec. Level (pCi/sample)
ND-147	531.02	13.10	1.03E+03	3.54E+02	3.71E+01	4.88E+02
PM-149	285.90	3.10	4.44E+10	4.44E+10	-2.18E+10	2.14E+10
EU-152	121.78	20.50	6.00E+00	6.00E+00	-4.84E+00	2.90E+00
	244.69	5.40	3.45E+01		6.62E-01	1.67E+01
	344.27	19.13	9.31E+00		2.29E+00	4.43E+00
	778.89	9.20	2.83E+01		6.17E+00	1.31E+01
	964.01	10.40	3.08E+01		-5.57E+00	1.42E+01
	1085.78	7.22	4.57E+01		1.87E+00	2.08E+01
	1112.02	9.60	3.58E+01		-2.64E+00	1.64E+01
	1407.95	14.94	2.75E+01		1.44E+01	1.25E+01
GD-153	97.43	31.30	4.59E+00	4.59E+00	-8.71E-01	2.23E+00
	103.18	22.20	6.34E+00		3.03E+00	3.07E+00
EU-154	123.07	40.50	3.18E+00	3.18E+00	6.22E-01	1.54E+00
	723.30	19.70	1.24E+01		-1.37E+01	5.73E+00
	873.19	11.50	2.59E+01		-1.03E+01	1.20E+01
	996.32	10.30	3.03E+01		-3.29E+01	1.39E+01
	1004.76	17.90	1.82E+01		-2.19E+00	8.37E+00
	1274.45	35.50	1.03E+01		2.64E+00	4.65E+00
EU-155	86.50	30.90	3.98E+00	3.98E+00	-1.22E+00	1.94E+00
	105.30	20.70	5.56E+00		-1.28E+00	2.69E+00
EU-156	811.77	10.40	4.55E+02	4.55E+02	-2.38E+02	2.09E+02
	1153.47	7.20	9.36E+02		6.11E+01	4.26E+02
	1230.71	8.90	8.18E+02		1.20E+02	3.73E+02
HO-166M	184.41	72.60	2.88E+00	2.88E+00	3.56E+00	1.40E+00
	280.45	29.60	6.70E+00		-6.80E-01	3.23E+00
	410.94	11.10	1.99E+01		-1.34E+00	9.51E+00
	711.69	54.10	5.11E+00		1.88E+00	2.40E+00
TM-171	66.72	0.14	9.15E+02	9.15E+02	-4.04E+03	4.46E+02
HF-172	81.75	4.52	2.71E+01	1.25E+01	-1.14E+01	1.31E+01
	125.81	11.30	1.25E+01		2.25E+00	6.06E+00
LU-172	181.53	20.60	6.55E+03	3.98E+03	-5.05E+03	3.17E+03
	810.06	16.63	1.25E+04		-1.90E+03	5.76E+03
	912.12	15.25	1.77E+04		-1.15E+03	8.24E+03
	1093.66	62.50	3.98E+03		-4.35E+02	1.80E+03
LU-173	100.72	5.24	2.51E+01	9.78E+00	1.07E+00	1.22E+01
	272.11	21.20	9.78E+00		-8.81E-01	4.71E+00
HF-175	343.40	84.00	4.03E+00	4.03E+00	-2.32E-01	1.92E+00
LU-176	88.34	13.30	9.31E+00	2.01E+00	-8.30E+00	4.53E+00
	201.83	86.00	2.01E+00		-9.25E-01	9.73E-01
	306.78	94.00	2.34E+00		1.50E+00	1.13E+00
TA-182	67.75	41.20	4.17E+00	4.17E+00	-3.00E+00	2.03E+00
	1121.30	34.90	1.51E+01		3.39E+00	6.94E+00
	1189.05	16.23	2.53E+01		-1.61E+01	1.12E+01
	1221.41	26.98	1.99E+01		-3.46E+00	9.06E+00
	1231.02	11.44	4.87E+01		7.15E+00	2.22E+01
IR-192	308.46	29.68	1.34E+01	8.68E+00	2.83E+00	6.45E+00
	468.07	48.10	8.68E+00		1.31E+00	4.13E+00
HG-203	279.19	77.30	6.69E+00	6.69E+00	-1.11E+00	3.22E+00
BI-207	569.67	97.72	2.65E+00	2.65E+00	1.02E+00	1.26E+00
	1063.62	74.90	4.37E+00		1.19E+00	2.00E+00
TL-208	583.14	30.22	7.72E+00	7.72E+00	3.23E-01	3.63E+00
	860.37	4.48	6.93E+01		-2.88E+01	3.22E+01
	2614.66	35.85	1.18E+01		6.92E+00	5.26E+00

Analysis Report for 1508105-04

ENGWESA001

	Nuclide Name	Energy (keV)		Yield(%)	Line MDA (pCi/sample)	Nuclide MDA (pCi/sample)	Activity (pCi/sample)	Dec. Level (pCi/sample)
	BI-210M	262.00		45.00	4.18E+00	4.18E+00	7.87E-01	2.01E+00
		300.00		23.00	9.58E+00		3.20E+00	4.62E+00
+	PB-210	46.50	*	4.25	5.08E+01	5.08E+01	3.81E+02	2.49E+01
	PB-211	404.84		2.90	6.06E+01	6.06E+01	-3.41E+01	2.86E+01
		831.96		2.90	1.02E+02		-7.57E+00	4.74E+01
	BI-212	727.17		11.80	2.21E+01	2.21E+01	-4.77E+00	1.03E+01
		1620.62		2.75	1.39E+02		0.00E+00	6.14E+01
	PB-212	238.63		44.60	4.68E+00	4.68E+00	3.74E+00	2.27E+00
		300.09		3.41	6.46E+01		2.16E+01	3.12E+01
	BI-214	609.31		46.30	6.88E+00	6.88E+00	2.11E+00	3.29E+00
		1120.29		15.10	2.49E+01		8.53E+00	1.14E+01
		1764.49		15.80	3.34E+01		1.90E+01	1.52E+01
		2204.22		4.98	7.81E+01		3.57E+01	3.41E+01
+	PB-214	295.21		19.19	1.14E+01	8.09E+00	2.23E+00	5.53E+00
		351.92	*	37.19	8.09E+00		5.32E+00	3.93E+00
	RN-219	401.80		6.50	2.81E+01	2.81E+01	6.84E+00	1.33E+01
	RA-223	323.87		3.88	5.24E+01	5.24E+01	7.59E+00	2.51E+01
	RA-224	240.98		3.95	5.19E+01	5.19E+01	2.07E+01	2.51E+01
	RA-225	40.00		31.00	1.30E+02	1.30E+02	7.71E+00	6.35E+01
	RA-226	186.21		3.28	6.56E+01	6.56E+01	1.44E+02	3.20E+01
	TH-227	50.10		8.40	1.84E+01	1.64E+01	-3.34E+00	9.01E+00
		236.00		11.50	1.64E+01		-7.90E+00	7.93E+00
		256.20		6.30	2.84E+01		-7.67E+00	1.36E+01
	AC-228	338.32		11.40	1.69E+01	1.20E+01	4.29E+00	8.09E+00
		911.07		27.70	1.20E+01		8.55E-01	5.60E+00
		969.11		16.60	1.98E+01		-5.35E-01	9.15E+00
	TH-230	48.44		16.90	1.51E+01	1.51E+01	8.97E+01	7.42E+00
		62.85		4.60	3.32E+01		7.49E+01	1.63E+01
		67.67		0.37	3.13E+02		-2.25E+02	1.52E+02
	PA-231	283.67		1.60	1.25E+02	9.39E+01	1.02E+01	6.02E+01
		302.67		2.30	9.39E+01		3.17E+01	4.53E+01
	TH-231	25.64		14.70	1.14E+02	1.85E+01	-8.85E+01	5.60E+01
		84.21		6.40	1.85E+01		3.98E+00	9.00E+00
	PA-233	311.98		38.60	2.74E+01	2.74E+01	-1.17E+01	1.32E+01
	PA-234	131.20		20.40	6.56E+00	6.56E+00	2.00E+00	3.18E+00
		733.99		8.80	2.80E+01		-1.13E+01	1.30E+01
		946.00		12.00	2.73E+01		4.29E+00	1.26E+01
+	PA-234M	1001.03	*	0.92	5.02E+02	5.02E+02	4.72E+02	2.37E+02
	TH-234	63.29		3.80	4.06E+01	4.06E+01	1.03E+02	1.99E+01
	U-235	143.76		10.50	1.45E+01	1.45E+01	1.47E+01	7.04E+00
		163.35		4.70	3.20E+01		9.32E+00	1.55E+01
		205.31		4.70	3.65E+01		-9.73E+00	1.76E+01
	NP-237	86.50		12.60	9.52E+00	9.52E+00	-2.91E+00	4.63E+00
	NP-239	106.10		22.70	9.99E+08	9.99E+08	-2.30E+08	4.83E+08
		228.18		10.70	3.18E+09		4.57E+08	1.53E+09
		277.60		14.10	2.83E+09		4.29E+08	1.36E+09
	AM-241	59.54		35.90	3.05E+00	3.05E+00	-7.09E+00	1.48E+00
	AM-243	74.67		66.00	1.77E+00	1.77E+00	-1.75E+00	8.59E-01
	CM-243	209.75		3.29	5.09E+01	1.42E+01	1.11E+01	2.46E+01
		228.14		10.60	1.60E+01		2.30E+00	7.71E+00
		277.60		14.00	1.42E+01		2.16E+00	6.85E+00

Analysis Report for 1508105-04

ENGWESA001

+ = 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: ENGWESA001

Elapsed Live time: 14400
Elapsed Real Time: 14402

Channel								
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	1	115	164	274	622	515	424
25:	127	126	90	76	95	99	80	82
33:	74	89	85	91	83	88	92	74
41:	103	76	87	64	95	224	963	303
49:	69	75	78	59	80	81	65	60
57:	67	61	79	99	66	62	148	350
65:	126	84	102	75	81	93	85	89
73:	67	74	106	96	91	120	83	83
81:	75	76	76	89	93	77	84	82
89:	85	91	99	127	411	203	92	79
97:	58	77	90	67	68	71	68	69
105:	58	67	52	53	61	83	69	71
113:	87	72	71	48	64	63	62	57
121:	58	60	58	61	79	62	69	62
129:	67	70	58	65	67	62	54	50
137:	54	53	53	83	69	71	72	83
145:	76	67	46	45	65	49	72	70
153:	44	64	69	68	63	46	70	74
161:	64	63	58	64	48	66	49	59
169:	59	63	54	65	53	54	63	55
177:	45	61	65	67	60	75	60	40
185:	78	186	130	70	53	64	55	49
193:	49	48	52	50	63	74	74	66
201:	48	56	69	54	61	54	65	47
209:	55	48	46	61	36	59	42	57
217:	60	59	40	74	48	57	46	61
225:	52	50	56	50	36	41	36	39
233:	43	48	53	54	48	76	100	62
241:	52	59	48	60	50	48	47	45
249:	49	46	56	43	41	47	35	46
257:	42	50	53	51	42	49	46	49
265:	39	41	29	42	49	43	45	56
273:	42	41	47	48	53	47	47	47
281:	42	53	49	51	46	39	49	46
289:	54	56	56	43	55	57	52	51
297:	57	55	50	47	52	63	41	47
305:	50	42	45	62	59	42	38	39
313:	53	33	43	33	46	41	41	37
321:	42	38	41	45	30	46	37	37
329:	47	38	34	31	28	29	36	32
337:	26	35	37	37	32	23	32	30
345:	24	29	20	28	27	30	36	69
353:	51	27	20	23	30	26	25	34
361:	40	18	22	27	32	29	29	23

369:	20	28	21	23	29	13	27	34

Sample Title: ENGWESA001

Channel								
377:	26	24	24	23	25	24	25	27
385:	21	21	25	26	25	19	23	32
393:	25	23	21	20	22	21	19	27
401:	21	26	18	19	18	21	25	23
409:	32	21	24	20	20	19	25	22
417:	23	25	22	19	20	10	15	24
425:	14	19	25	12	20	22	17	21
433:	17	14	25	19	17	15	20	23
441:	18	25	18	17	23	18	21	19
449:	20	16	18	26	20	23	18	35
457:	23	23	16	18	14	21	20	21
465:	24	18	13	21	15	16	25	15
473:	16	13	20	61	632	1475	372	34
481:	22	18	13	10	12	14	18	14
489:	16	16	12	21	12	15	17	14
497:	18	13	15	23	14	21	14	12
505:	12	14	15	23	36	84	137	119
513:	47	33	17	16	19	11	14	16
521:	25	13	8	12	17	15	14	20
529:	16	15	10	8	17	13	14	13
537:	13	13	10	14	12	16	16	15
545:	13	18	15	7	15	11	13	16
553:	10	12	8	14	9	9	18	15
561:	9	14	17	18	11	9	12	14
569:	15	22	20	16	16	17	16	12
577:	15	8	16	16	9	12	11	20
585:	13	7	13	12	13	15	12	10
593:	11	9	13	17	13	16	19	19
601:	18	20	13	24	19	14	15	17
609:	33	41	17	17	19	16	18	16
617:	11	19	17	13	15	12	15	12
625:	11	10	14	8	14	13	13	14
633:	14	9	19	15	11	15	7	13
641:	11	10	15	11	11	11	15	7
649:	11	10	15	9	11	14	7	8
657:	13	13	12	11	16	14	12	6
665:	13	14	8	7	9	15	13	15
673:	10	13	11	6	14	13	5	7
681:	11	14	7	10	10	10	10	10
689:	10	9	14	16	22	15	23	17
697:	13	13	18	18	17	11	17	11
705:	6	14	10	11	15	16	7	14
713:	3	14	10	11	5	13	7	9
721:	6	7	16	8	5	5	19	14
729:	9	6	8	12	12	6	6	7
737:	6	12	12	4	12	11	10	9
745:	14	8	10	10	7	4	9	9
753:	7	6	12	7	9	14	7	2
761:	10	10	10	10	9	13	15	23
769:	12	8	8	10	5	5	7	7
777:	7	10	6	8	8	8	7	7
785:	9	9	7	9	8	12	6	12
793:	6	8	10	12	11	14	11	13

801:	6	17	11	11	11	8	9	5

Sample Title: ENGWESA001

Channel								
809:	4	6	5	7	10	5	6	9
817:	11	5	11	10	10	7	3	7
825:	5	13	13	7	11	6	10	9
833:	8	8	9	11	6	10	16	12
841:	11	13	10	11	5	11	7	10
849:	8	10	12	8	8	4	10	13
857:	12	6	12	10	7	8	7	15
865:	7	8	8	10	11	8	9	6
873:	3	13	6	8	7	11	2	14
881:	6	5	8	10	3	7	4	6
889:	7	6	9	11	10	7	11	7
897:	12	9	9	7	9	10	7	10
905:	10	8	6	11	7	6	10	14
913:	8	6	8	11	7	7	5	8
921:	5	7	6	8	8	4	7	7
929:	12	4	6	3	9	5	6	7
937:	5	4	8	5	9	8	10	8
945:	12	9	3	9	3	3	9	5
953:	5	5	6	7	11	5	5	7
961:	7	8	5	8	9	5	6	6
969:	12	7	7	8	8	5	6	1
977:	4	5	3	2	4	6	8	7
985:	4	2	8	8	10	15	8	5
993:	4	4	4	6	4	6	13	13
1001:	19	11	11	9	1	5	3	4
1009:	6	5	3	8	4	4	7	2
1017:	4	11	6	11	8	5	3	9
1025:	6	4	9	4	4	5	4	3
1033:	2	6	4	1	7	3	5	6
1041:	2	5	10	5	10	6	8	7
1049:	8	6	5	7	12	12	7	4
1057:	7	4	4	7	6	6	4	6
1065:	7	6	4	3	4	6	7	2
1073:	6	7	6	5	2	7	6	10
1081:	2	6	3	7	6	5	5	4
1089:	7	9	3	9	4	3	3	1
1097:	7	3	2	4	7	7	9	1
1105:	8	4	6	3	3	7	3	3
1113:	8	6	8	6	8	4	7	13
1121:	5	3	6	3	4	3	7	5
1129:	3	2	3	6	5	3	4	5
1137:	6	4	3	5	7	4	7	3
1145:	4	4	5	3	4	4	6	12
1153:	4	1	3	6	4	4	3	7
1161:	5	2	3	10	4	8	7	6
1169:	5	3	7	4	6	4	10	3
1177:	6	5	4	6	2	4	3	5
1185:	5	2	2	7	4	3	2	0
1193:	6	4	2	5	4	4	7	1
1201:	6	2	6	3	3	5	4	1
1209:	5	5	4	5	2	6	6	8
1217:	8	2	4	10	7	7	2	2
1225:	2	6	3	4	5	5	6	6

1233:	5	5	6	3	5	7	11	7

Sample Title: ENGWESA001

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

1665:	2	3	3	1	2	2	0	1

Sample Title: ENGWESA001

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

2097:	3	0	5	1	3	0	3	2

Sample Title: ENGWESA001

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

2529:	0	2	0	0	1	1	0	2

Sample Title: ENGWESA001

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

2961:	0	1	1	1	0	0	1	1

Sample Title: ENGWESA001

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

3393:	1	1	1	0	0	1	0	0

Sample Title: ENGWESA001

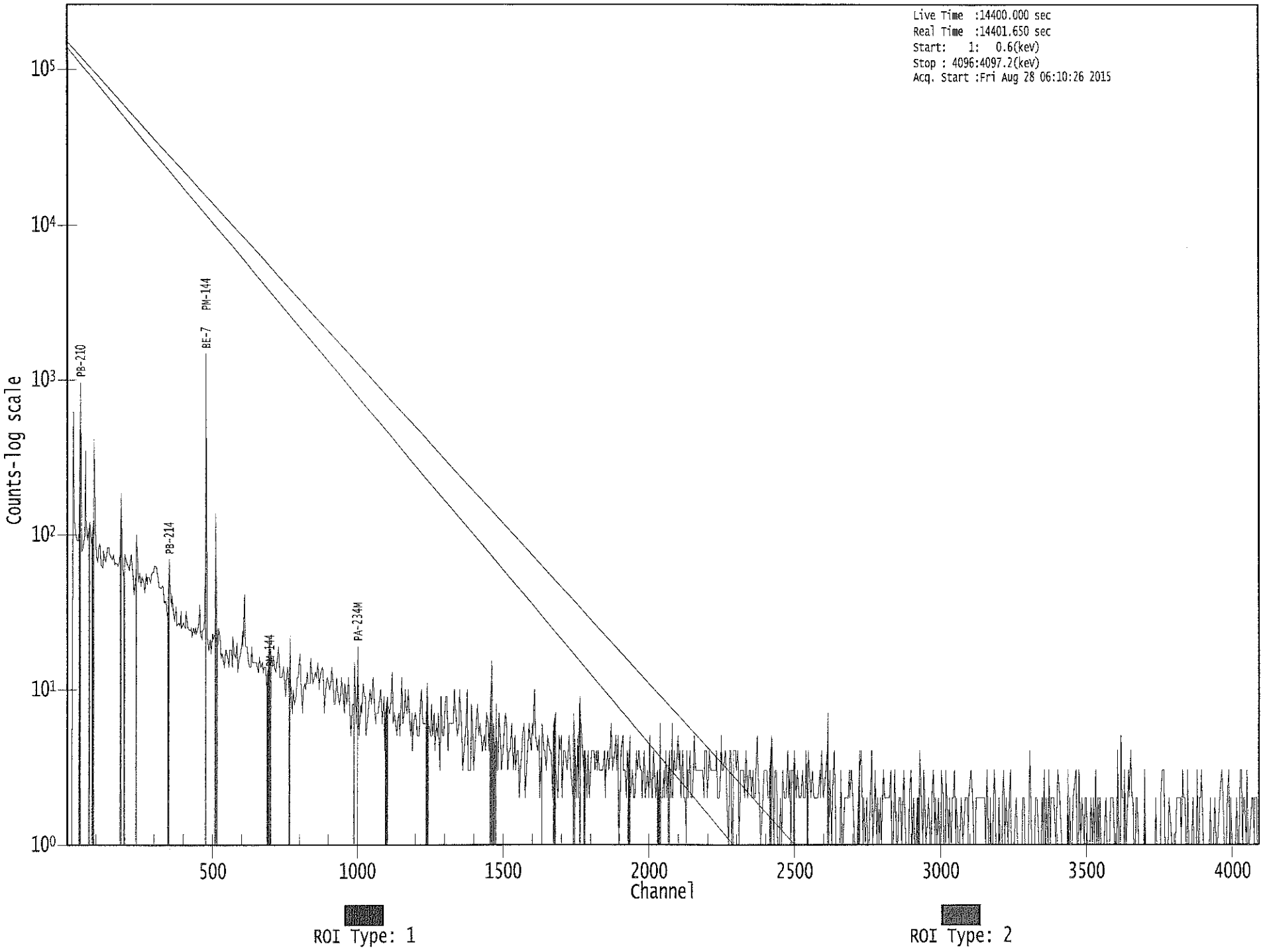
Channel								
3401:	3	1	1	0	1	0	1	2
3409:	2	2	2	0	1	0	0	1
3417:	0	1	0	0	0	0	0	0
3425:	0	0	0	0	0	0	0	0
3433:	0	0	2	3	0	0	0	0
3441:	2	2	0	0	1	1	0	0
3449:	1	1	0	0	0	2	0	0
3457:	2	1	1	0	0	0	1	3
3465:	1	1	1	0	1	1	0	1
3473:	0	1	3	1	0	0	0	1
3481:	1	2	1	2	0	2	0	1
3489:	0	0	1	1	1	1	2	0
3497:	0	0	2	0	0	0	1	0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

3825:	1	0	0	3	0	0	2	0

Sample Title: ENGWESA001

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

0000026566.CNF



Apex-Gamma

Analysis Report for 1508105-05
ENGWESA002

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 1508105-05
Sample Description	: ENGWESA002
Sample Type	: FILTER
Sample Size	: 7.950E-01 sample
Facility	: Countroom
Sample Taken On	: 6/24/2015 9:09:34AM
Acquisition Started	: 8/27/2015 6:28:23PM
Procedure	: GAF-14 pCi
Operator	: Administrator
Detector Name	: GE2
Geometry	: GAF-14
Live Time	: 14400.0 seconds
Real Time	: 14402.7 seconds
Dead Time	: 0.02 %
Peak Locate Threshold	: 2.50
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 7 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 11/2/2014
Efficiency Calibration Used Done On	: 10/25/2014
Efficiency Calibration Description	:
Sample Number	: 26630

PEAK-TO-TOTAL CALIBRATION REPORT

Peak-to-Total Efficiency Calibration Equation

AG
8/31/15

Analysis Report for 1508105-05

ENGWESA002

PEAK LOCATE REPORT

Peak Locate Performed on : 8/31/2015 7:31:58AM
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	46.87	46.98	0.0000	0.00
2	239.86	239.86	0.0000	0.00
3	297.25	297.21	0.0000	0.00
4	404.60	404.51	0.0000	0.00
5	409.59	409.49	0.0000	0.00
6	477.77	477.65	0.0000	0.00
7	667.57	667.35	0.0000	0.00
8	794.39	794.11	0.0000	0.00
9	803.60	803.32	0.0000	0.00
10	835.28	834.99	0.0000	0.00
11	838.48	838.19	0.0000	0.00
12	844.43	844.13	0.0000	0.00
13	863.92	863.61	0.0000	0.00
14	971.08	970.73	0.0000	0.00
15	1001.47	1001.11	0.0000	0.00
16	1055.21	1054.82	0.0000	0.00
17	1388.61	1388.11	0.0000	0.00
18	1468.52	1468.00	0.0000	0.00
19	1802.89	1802.28	0.0000	0.00
20	1828.37	1827.75	0.0000	0.00
21	1933.31	1932.67	0.0000	0.00
22	1956.21	1955.56	0.0000	0.00
23	2180.98	2180.29	0.0000	0.00
24	2241.38	2240.68	0.0000	0.00
25	2360.18	2359.46	0.0000	0.00
26	2449.44	2448.71	0.0000	0.00
27	2614.13	2613.39	0.0000	0.00
28	2714.89	2714.14	0.0000	0.00
29	2749.48	2748.73	0.0000	0.00
30	2921.20	2920.45	0.0000	0.00
31	3080.75	3080.00	0.0000	0.00
32	3267.18	3266.43	0.0000	0.00
33	3352.84	3352.10	0.0000	0.00
34	3403.81	3403.07	0.0000	0.00

? = Adjacent peak noted
Errors quoted at 2.000sigma

Analysis Report for 1508105-05

ENGWESA002

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 8/31/2015 7:31:58AM

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	46.87	45 -	50	46.98	1.93E+03	144.30	2.48E+03	1.24
	2	239.86	235 -	245	239.86	1.86E+02	100.49	1.24E+03	1.88
	3	297.25	293 -	301	297.21	1.36E+02	81.91	9.46E+02	5.93
M	4	404.60	402 -	417	404.51	2.92E+01	36.37	2.40E+02	1.99
m	5	409.59	402 -	417	409.49	2.63E+01	37.30	2.49E+02	2.00
	6	477.77	473 -	483	477.65	3.80E+03	136.01	4.38E+02	1.85
	7	667.57	658 -	676	667.35	9.75E+01	65.61	3.33E+02	13.43
	8	794.39	791 -	798	794.11	2.47E+01	27.35	1.09E+02	2.48
	9	803.60	799 -	807	803.32	4.14E+01	29.90	1.11E+02	1.87
M	10	835.28	832 -	847	834.99	2.01E+01	21.98	8.28E+01	2.08
m	11	838.48	832 -	847	838.19	1.75E+01	22.34	8.16E+01	2.08
m	12	844.43	832 -	847	844.13	2.27E+01	23.22	7.93E+01	2.09
	13	863.92	859 -	868	863.61	2.82E+01	33.91	1.44E+02	7.18
	14	971.08	966 -	975	970.73	3.20E+01	28.50	9.21E+01	6.00
	15	1001.47	997 -	1005	1001.11	3.03E+01	23.49	6.33E+01	2.57
	16	1055.21	1050 -	1059	1054.82	2.61E+01	25.69	7.78E+01	5.20
	17	1388.61	1386 -	1390	1388.11	1.11E+01	12.84	2.58E+01	2.57
m	18	1468.52	1456 -	1472	1468.00	2.19E+01	15.44	2.91E+01	2.32
	19	1802.89	1797 -	1807	1802.28	1.53E+01	15.98	2.13E+01	3.62
	20	1828.37	1824 -	1833	1827.75	2.12E+01	17.03	2.75E+01	1.94
	21	1933.31	1928 -	1938	1932.67	1.95E+01	12.67	1.10E+01	3.46
	22	1956.21	1952 -	1959	1955.56	1.19E+01	9.59	6.27E+00	1.25
	23	2180.98	2175 -	2183	2180.29	5.50E+00	7.23	5.00E+00	2.09
	24	2241.38	2238 -	2243	2240.68	8.81E+00	8.89	8.38E+00	1.68
	25	2360.18	2355 -	2362	2359.46	7.18E+00	8.72	7.64E+00	3.37
	26	2449.44	2446 -	2451	2448.71	6.00E+00	7.35	6.00E+00	2.69
	27	2614.13	2608 -	2617	2613.39	4.83E+01	15.13	5.31E+00	3.29
	28	2714.89	2708 -	2718	2714.14	1.41E+01	9.91	5.82E+00	8.52
	29	2749.48	2746 -	2751	2748.73	4.42E+00	5.74	3.17E+00	1.88
	30	2921.20	2916 -	2923	2920.45	5.94E+00	6.93	4.13E+00	3.10
	31	3080.75	3077 -	3082	3080.00	7.00E+00	5.29	0.00E+00	1.92
	32	3267.18	3262 -	3269	3266.43	5.94E+00	6.93	4.13E+00	2.75
	33	3352.84	3347 -	3356	3352.10	1.00E+01	6.32	0.00E+00	6.99
	34	3403.81	3400 -	3407	3403.07	5.69E+00	6.93	4.63E+00	1.71

Analysis Report for 1508105-05

ENGWESA002

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 : 8/31/2015 7:31:58AM

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	46.87	45 -	50	1.93E+03	144.30	2.48E+03	9.41E+01
	2	239.86	235 -	245	1.86E+02	100.49	1.24E+03	7.95E+01
	3	297.25	293 -	301	1.36E+02	81.91	9.46E+02	6.45E+01
M	4	404.60	402 -	417	2.92E+01	36.37	2.40E+02	2.55E+01
m	5	409.59	402 -	417	2.63E+01	37.30	2.49E+02	2.60E+01
	6	477.77	473 -	483	3.80E+03	136.01	4.38E+02	4.72E+01
	7	667.57	658 -	676	9.75E+01	65.61	3.33E+02	5.14E+01
	8	794.39	791 -	798	2.47E+01	27.35	1.09E+02	2.09E+01
	9	803.60	799 -	807	4.14E+01	29.90	1.11E+02	2.22E+01
M	10	835.28	832 -	847	2.01E+01	21.98	8.28E+01	1.50E+01
m	11	838.48	832 -	847	1.75E+01	22.34	8.16E+01	1.49E+01
m	12	844.43	832 -	847	2.27E+01	23.22	7.93E+01	1.46E+01
	13	863.92	859 -	868	2.82E+01	33.91	1.44E+02	2.65E+01
	14	971.08	966 -	975	3.20E+01	28.50	9.21E+01	2.15E+01
	15	1001.47	997 -	1005	3.03E+01	23.49	6.33E+01	1.71E+01
	16	1055.21	1050 -	1059	2.61E+01	25.69	7.78E+01	1.94E+01
	17	1388.61	1386 -	1390	1.11E+01	12.84	2.58E+01	9.01E+00
m	18	1468.52	1456 -	1472	2.19E+01	15.44	2.91E+01	8.87E+00
	19	1802.89	1797 -	1807	1.53E+01	15.98	2.13E+01	1.14E+01
	20	1828.37	1824 -	1833	2.12E+01	17.03	2.75E+01	1.18E+01
	21	1933.31	1928 -	1938	1.95E+01	12.67	1.10E+01	7.47E+00
	22	1956.21	1952 -	1959	1.19E+01	9.59	6.27E+00	5.49E+00
	23	2180.98	2175 -	2183	5.50E+00	7.23	5.00E+00	4.52E+00
	24	2241.38	2238 -	2243	8.81E+00	8.89	8.38E+00	5.44E+00
	25	2360.18	2355 -	2362	7.18E+00	8.72	7.64E+00	5.65E+00
	26	2449.44	2446 -	2451	6.00E+00	7.35	6.00E+00	4.50E+00
	27	2614.13	2608 -	2617	4.83E+01	15.13	5.31E+00	4.91E+00
	28	2714.89	2708 -	2718	1.41E+01	9.91	5.82E+00	5.32E+00
	29	2749.48	2746 -	2751	4.42E+00	5.74	3.17E+00	3.22E+00
	30	2921.20	2916 -	2923	5.94E+00	6.93	4.13E+00	4.05E+00
	31	3080.75	3077 -	3082	7.00E+00	5.29	0.00E+00	0.00E+00

Analysis Report for 1508105-05

ENGWESA002

Peak No.	Energy (keV)	ROI start	ROI end	Net Peak Area	Net Area Uncertainty	Continuum Counts	Critical Level
32	3267.18	3262 -	3269	5.94E+00	6.93	4.13E+00	4.05E+00
33	3352.84	3347 -	3356	1.00E+01	6.32	0.00E+00	0.00E+00
34	3403.81	3400 -	3407	5.69E+00	6.93	4.63E+00	4.13E+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 : 8/31/2015 7:31:58AM

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	46.87	45 -	50	46.98	1.93E+03	144.30	2.48E+03	PB-210
	2	239.86	235 -	245	239.86	1.86E+02	100.49	1.24E+03	.....
	3	297.25	293 -	301	297.21	1.36E+02	81.91	9.46E+02	.....
M	4	404.60	402 -	417	404.51	2.92E+01	36.37	2.40E+02	PB-211
m	5	409.59	402 -	417	409.49	2.63E+01	37.30	2.49E+02	.....
	6	477.77	473 -	483	477.65	3.80E+03	136.01	4.38E+02	BE-7 PM-144
	7	667.57	658 -	676	667.35	9.75E+01	65.61	3.33E+02	.....
	8	794.39	791 -	798	794.11	2.47E+01	27.35	1.09E+02	.....
	9	803.60	799 -	807	803.32	4.14E+01	29.90	1.11E+02	.....
M	10	835.28	832 -	847	834.99	2.01E+01	21.98	8.28E+01	MN-54
m	11	838.48	832 -	847	838.19	1.75E+01	22.34	8.16E+01	.....
m	12	844.43	832 -	847	844.13	2.27E+01	23.22	7.93E+01	.....
	13	863.92	859 -	868	863.61	2.82E+01	33.91	1.44E+02	.....
	14	971.08	966 -	975	970.73	3.20E+01	28.50	9.21E+01	.....
	15	1001.47	997 -	1005	1001.11	3.03E+01	23.49	6.33E+01	PA-234M
	16	1055.21	1050 -	1059	1054.82	2.61E+01	25.69	7.78E+01	.....
	17	1388.61	1386 -	1390	1388.11	1.11E+01	12.84	2.58E+01	.....
m	18	1468.52	1456 -	1472	1468.00	2.19E+01	15.44	2.91E+01	.....
	19	1802.89	1797 -	1807	1802.28	1.53E+01	15.98	2.13E+01	.....
	20	1828.37	1824 -	1833	1827.75	2.12E+01	17.03	2.75E+01	.....
	21	1933.31	1928 -	1938	1932.67	1.95E+01	12.67	1.10E+01	.....
	22	1956.21	1952 -	1959	1955.56	1.19E+01	9.59	6.27E+00	.....

Analysis Report for 1508105-05

ENGWESA002

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	Tentative Nuclide
23	2180.98	2175 -	2183	2180.29	5.50E+00	7.23	5.00E+00	.....
24	2241.38	2238 -	2243	2240.68	8.81E+00	8.89	8.38E+00	.....
25	2360.18	2355 -	2362	2359.46	7.18E+00	8.72	7.64E+00	.....
26	2449.44	2446 -	2451	2448.71	6.00E+00	7.35	6.00E+00	.....
27	2614.13	2608 -	2617	2613.39	4.83E+01	15.13	5.31E+00	TL-208
28	2714.89	2708 -	2718	2714.14	1.41E+01	9.91	5.82E+00	.....
29	2749.48	2746 -	2751	2748.73	4.42E+00	5.74	3.17E+00	.....
30	2921.20	2916 -	2923	2920.45	5.94E+00	6.93	4.13E+00	.....
31	3080.75	3077 -	3082	3080.00	7.00E+00	5.29	0.00E+00	.....
32	3267.18	3262 -	3269	3266.43	5.94E+00	6.93	4.13E+00	.....
33	3352.84	3347 -	3356	3352.10	1.00E+01	6.32	0.00E+00	.....
34	3403.81	3400 -	3407	3403.07	5.69E+00	6.93	4.63E+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 : 8/31/2015 7:31:58AM

	Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
	1	46.87	1.93E+03	144.30	2.20E-01	1.87E-02
	2	239.86	1.86E+02	100.49	1.30E-01	2.25E-02
	3	297.25	1.36E+02	81.91	1.09E-01	1.36E-02
M	4	404.60	2.92E+01	36.37	8.25E-02	7.72E-03
m	5	409.59	2.63E+01	37.30	8.15E-02	7.71E-03
	6	477.77	3.80E+03	136.01	7.03E-02	7.47E-03
	7	667.57	9.75E+01	65.61	4.98E-02	6.94E-03
	8	794.39	2.47E+01	27.35	4.11E-02	8.97E-03
	9	803.60	4.14E+01	29.90	4.06E-02	9.12E-03
M	10	835.28	2.01E+01	21.98	3.88E-02	9.63E-03
m	11	838.48	1.75E+01	22.34	3.87E-02	9.68E-03
m	12	844.43	2.27E+01	23.22	3.84E-02	9.77E-03
	13	863.92	2.82E+01	33.91	3.74E-02	1.01E-02
	14	971.08	3.20E+01	28.50	3.27E-02	8.79E-03
	15	1001.47	3.03E+01	23.49	3.16E-02	8.02E-03
	16	1055.21	2.61E+01	25.69	2.98E-02	6.66E-03
	17	1388.61	1.11E+01	12.84	2.21E-02	4.30E-03
m	18	1468.52	2.19E+01	15.44	2.08E-02	3.82E-03

Analysis Report for 1508105-05

ENGWESA002

Peak No.	Energy (keV)	Net Peak Area	Net Area Uncertainty	Peak Efficiency	Efficiency Uncertainty
19	1802.89	1.53E+01	15.98	1.73E-02	1.82E-03
20	1828.37	2.12E+01	17.03	1.72E-02	1.67E-03
21	1933.31	1.95E+01	12.67	1.65E-02	1.62E-03
22	1956.21	1.19E+01	9.59	1.63E-02	1.62E-03
23	2180.98	5.50E+00	7.23	1.54E-02	1.62E-03
24	2241.38	8.81E+00	8.89	1.52E-02	1.62E-03
25	2360.18	7.18E+00	8.72	1.49E-02	1.62E-03
26	2449.44	6.00E+00	7.35	1.48E-02	1.62E-03
27	2614.13	4.83E+01	15.13	1.47E-02	1.62E-03
28	2714.89	1.41E+01	9.91	1.47E-02	1.62E-03
29	2749.48	4.42E+00	5.74	1.47E-02	1.62E-03
30	2921.20	5.94E+00	6.93	1.50E-02	1.62E-03
31	3080.75	7.00E+00	5.29	1.53E-02	1.62E-03
32	3267.18	5.94E+00	6.93	1.59E-02	1.62E-03
33	3352.84	1.00E+01	6.32	1.62E-02	1.62E-03
34	3403.81	5.69E+00	6.93	1.65E-02	1.62E-03

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 : 8/31/2015 7:31:58AM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000025967.CNF

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	1	46.87	1.93E+03	144.30	2.91E+02	3.52E+01	1.64E+03	1.49E+02
	2	239.86	1.86E+02	100.49	5.71E+01	2.83E+01	1.29E+02	1.04E+02
	3	297.25	1.36E+02	81.91			1.36E+02	8.19E+01
M	4	404.60	2.92E+01	36.37			2.92E+01	3.64E+01
m	5	409.59	2.63E+01	37.30			2.63E+01	3.73E+01
	6	477.77	3.80E+03	136.01			3.80E+03	1.36E+02
	7	667.57	9.75E+01	65.61			9.75E+01	6.56E+01
	8	794.39	2.47E+01	27.35			2.47E+01	2.73E+01
	9	803.60	4.14E+01	29.90			4.14E+01	2.99E+01
M	10	835.28	2.01E+01	21.98			2.01E+01	2.20E+01
m	11	838.48	1.75E+01	22.34			1.75E+01	2.23E+01
m	12	844.43	2.27E+01	23.22			2.27E+01	2.32E+01
	13	863.92	2.82E+01	33.91			2.82E+01	3.39E+01
	14	971.08	3.20E+01	28.50			3.20E+01	2.85E+01

Analysis Report for 1508105-05

ENGWESA002

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	15	1001.47	3.03E+01	23.49	6.46E-01	1.17E+01	2.97E+01	2.63E+01
	16	1055.21	2.61E+01	25.69			2.61E+01	2.57E+01
	17	1388.61	1.11E+01	12.84			1.11E+01	1.28E+01
m	18	1468.52	2.19E+01	15.44			2.19E+01	1.54E+01
	19	1802.89	1.53E+01	15.98			1.53E+01	1.60E+01
	20	1828.37	2.12E+01	17.03			2.12E+01	1.70E+01
	21	1933.31	1.95E+01	12.67			1.95E+01	1.27E+01
	22	1956.21	1.19E+01	9.59			1.19E+01	9.59E+00
	23	2180.98	5.50E+00	7.23			5.50E+00	7.23E+00
	24	2241.38	8.81E+00	8.89			8.81E+00	8.89E+00
	25	2360.18	7.18E+00	8.72			7.18E+00	8.72E+00
	26	2449.44	6.00E+00	7.35			6.00E+00	7.35E+00
	27	2614.13	4.83E+01	15.13	3.23E+01	6.85E+00	1.60E+01	1.66E+01
	28	2714.89	1.41E+01	9.91			1.41E+01	9.91E+00
	29	2749.48	4.42E+00	5.74			4.42E+00	5.74E+00
	30	2921.20	5.94E+00	6.93			5.94E+00	6.93E+00
	31	3080.75	7.00E+00	5.29			7.00E+00	5.29E+00
	32	3267.18	5.94E+00	6.93			5.94E+00	6.93E+00
	33	3352.84	1.00E+01	6.32			1.00E+01	6.32E+00
	34	3403.81	5.69E+00	6.93			5.69E+00	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 : 8/31/2015 7:31:58AM

Ref. Peak Energy : 0.00 Reference Date :
Peak Ratio : 0.00 Uncertainty : 0.00
Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000025967.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	46.87	1.93E+03	144.30	2.91E+02	3.52E+01	1.64E+03	1.49E+02
	2	239.86	1.86E+02	100.49	5.71E+01	2.83E+01	1.29E+02	1.04E+02
	3	297.25	1.36E+02	81.91			1.36E+02	8.19E+01
M	4	404.60	2.92E+01	36.37			2.92E+01	3.64E+01
m	5	409.59	2.63E+01	37.30			2.63E+01	3.73E+01
	6	477.77	3.80E+03	136.01			3.80E+03	1.36E+02
	7	667.57	9.75E+01	65.61			9.75E+01	6.56E+01
	8	794.39	2.47E+01	27.35			2.47E+01	2.73E+01

Analysis Report for 1508105-05

ENGWESA002

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Corrected Area	Corrected Uncert.
	9	803.60	4.14E+01	29.90			4.14E+01	2.99E+01
M	10	835.28	2.01E+01	21.98			2.01E+01	2.20E+01
m	11	838.48	1.75E+01	22.34			1.75E+01	2.23E+01
m	12	844.43	2.27E+01	23.22			2.27E+01	2.32E+01
	13	863.92	2.82E+01	33.91			2.82E+01	3.39E+01
	14	971.08	3.20E+01	28.50			3.20E+01	2.85E+01
	15	1001.47	3.03E+01	23.49	6.46E-01	1.17E+01	2.97E+01	2.63E+01
	16	1055.21	2.61E+01	25.69			2.61E+01	2.57E+01
	17	1388.61	1.11E+01	12.84			1.11E+01	1.28E+01
m	18	1468.52	2.19E+01	15.44			2.19E+01	1.54E+01
	19	1802.89	1.53E+01	15.98			1.53E+01	1.60E+01
	20	1828.37	2.12E+01	17.03			2.12E+01	1.70E+01
	21	1933.31	1.95E+01	12.67			1.95E+01	1.27E+01
	22	1956.21	1.19E+01	9.59			1.19E+01	9.59E+00
	23	2180.98	5.50E+00	7.23			5.50E+00	7.23E+00
	24	2241.38	8.81E+00	8.89			8.81E+00	8.89E+00
	25	2360.18	7.18E+00	8.72			7.18E+00	8.72E+00
	26	2449.44	6.00E+00	7.35			6.00E+00	7.35E+00
	27	2614.13	4.83E+01	15.13	3.23E+01	6.85E+00	1.60E+01	1.66E+01
	28	2714.89	1.41E+01	9.91			1.41E+01	9.91E+00
	29	2749.48	4.42E+00	5.74			4.42E+00	5.74E+00
	30	2921.20	5.94E+00	6.93			5.94E+00	6.93E+00
	31	3080.75	7.00E+00	5.29			7.00E+00	5.29E+00
	32	3267.18	5.94E+00	6.93			5.94E+00	6.93E+00
	33	3352.84	1.00E+01	6.32			1.00E+01	6.32E+00
	34	3403.81	5.69E+00	6.93			5.69E+00	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

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/sample)	Activity Uncertainty
BE-7	0.987	477.59	*	10.42	2.82E+03	3.17E+02
MN-54	0.968	834.83	*	99.97	1.41E+00	1.58E+00
PB-210	0.978	46.50	*	4.25	4.16E+02	5.17E+01
PB-211	0.343	404.84	*	2.90	2.88E+01	3.60E+01
		831.96		2.90		

Analysis Report for 1508105-05

ENGWESA002

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/sample)	Activity Uncertainty
PA-234M	0.969	1001.03	*	0.92	2.41E+02	2.22E+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 : 8/31/2015 7:31:58AM
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	239.86	8.92690E-03	40.61		
	3	297.25	9.44245E-03	30.12		
m	5	409.59	1.82655E-03	70.90		
	7	667.57	6.76873E-03	33.66		
	8	794.39	1.71457E-03	55.39		
	9	803.60	2.87228E-03	36.15		
m	11	838.48	1.21587E-03	63.79		
m	12	844.43	1.57943E-03	51.04		
	13	863.92	1.95833E-03	60.13		
	14	971.08	2.22044E-03	44.56		
	16	1055.21	1.81303E-03	49.20		
	17	1388.61	7.72569E-04	57.69		
m	18	1468.52	1.52394E-03	35.17		
	19	1802.89	1.06437E-03	52.12		
	20	1828.37	1.47421E-03	40.11		
	21	1933.31	1.35417E-03	32.48		
	22	1956.21	8.24074E-04	40.41		
	23	2180.98	3.81944E-04	65.71		
	24	2241.38	6.11645E-04	50.46		
	25	2360.18	4.98737E-04	60.69		
	26	2449.44	4.16667E-04	61.24		
	27	2614.13	1.11162E-03	51.89	Tol.	TL-208
	28	2714.89	9.78350E-04	35.18		
	29	2749.48	3.06713E-04	65.03		
	30	2921.20	4.12326E-04	58.34		
	31	3080.75	4.86111E-04	37.80		
	32	3267.18	4.12326E-04	58.34		
	33	3352.84	6.94444E-04	31.62		

Analysis Report for 1508105-05
ENGWESA002

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
34	3403.81	3.94965E-04	60.91		

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/sample)	Activity Uncertainty
BE-7	0.98	477.59	*	10.42	2.82E+03	3.17E+02
MN-54	0.96	834.83	*	99.97	1.41E+00	1.58E+00
PB-210	0.97	46.50	*	4.25	4.16E+02	5.17E+01
PB-211	0.34	404.84	*	2.90	2.88E+01	3.60E+01
		831.96		2.90		
PA-234M	0.96	1001.03	*	0.92	2.41E+02	2.22E+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

Analysis Report for 1508105-05

ENGWESA002

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/sample)	Wt mean Activity Uncertainty	Comments
BE-7	0.987	2.82E+03	3.17E+02	
MN-54	0.968	1.41E+00	1.58E+00	
PB-210	0.978	4.16E+02	5.17E+01	
PB-211	0.343	2.88E+01	3.60E+01	
PA-234M	0.969	2.41E+02	2.22E+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 1508105-05

ENGWESA002

UNIDENTIFIED PEAKS

Peak Locate Performed on : 8/31/2015 7:31:58AM
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	239.86	8.92690E-03	40.61		
	3	297.25	9.44245E-03	30.12		
m	5	409.59	1.82655E-03	70.90		
	7	667.57	6.76873E-03	33.66		
	8	794.39	1.71457E-03	55.39		
	9	803.60	2.87228E-03	36.15		
m	11	838.48	1.21587E-03	63.79		
m	12	844.43	1.57943E-03	51.04		
	13	863.92	1.95833E-03	60.13		
	14	971.08	2.22044E-03	44.56		
	16	1055.21	1.81303E-03	49.20		
	17	1388.61	7.72569E-04	57.69		
m	18	1468.52	1.52394E-03	35.17		
	19	1802.89	1.06437E-03	52.12		
	20	1828.37	1.47421E-03	40.11		
	21	1933.31	1.35417E-03	32.48		
	22	1956.21	8.24074E-04	40.41		
	23	2180.98	3.81944E-04	65.71		
	24	2241.38	6.11645E-04	50.46		
	25	2360.18	4.98737E-04	60.69		
	26	2449.44	4.16667E-04	61.24		
	27	2614.13	1.11162E-03	51.89	Tol.	TL-208
	28	2714.89	9.78350E-04	35.18		
	29	2749.48	3.06713E-04	65.03		
	30	2921.20	4.12326E-04	58.34		
	31	3080.75	4.86111E-04	37.80		
	32	3267.18	4.12326E-04	58.34		
	33	3352.84	6.94444E-04	31.62		
	34	3403.81	3.94965E-04	60.91		

Analysis Report for 1508105-05

ENGWESA002

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/sample)	Nuclide MDA (pCi/sample)	Line MDA (pCi/sample)
+		BE-7	477.59	*	10.42	2.82E+03	7.22E+01	7.22E+01
+		NA-22	1274.54		99.94	-6.57E-01	2.51E+00	2.51E+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	-3.28E-01	2.38E+00	2.38E+00
+		K-40	1460.81		10.67	4.21E+01	4.12E+01	4.12E+01
+	@	AR-41	1293.64		99.16	1.00E+26	1.00E+26	1.00E+26
+		TI-44	67.88		94.40	3.80E-01	7.40E-01	7.40E-01
			78.34		96.00	-5.23E-02		8.12E-01
+		SC-46	889.25		99.98	-2.14E+00	3.77E+00	3.77E+00
			1120.51		99.99	2.17E+00		5.85E+00
+		V-48	983.52		99.98	1.04E+01	3.81E+01	4.24E+01
			1312.10		97.50	-2.02E+01		3.81E+01
+		CR-51	320.08		9.83	1.10E+00	8.73E+01	8.73E+01
+		MN-54	834.83	*	99.97	1.41E+00	5.21E+00	5.21E+00
+		CO-56	846.75		99.96	1.36E-01	4.71E+00	4.71E+00
			1037.75		14.03	5.80E+00		3.35E+01
			1238.25		67.00	4.74E-01		8.10E+00
			1771.40		15.51	-6.45E+00		3.59E+01
			2598.48		16.90	-1.09E+01		2.01E+01
+		CO-57	122.06		85.51	8.05E-01	1.50E+00	1.50E+00
			136.48		10.60	-1.00E+01		1.27E+01
+		CO-58	810.76		99.40	-5.12E-01	3.81E+00	3.81E+00
+		FE-59	1099.22		56.50	1.69E+00	1.40E+01	1.40E+01
			1291.56		43.20	-6.26E+00		1.73E+01
+		CO-60	1173.22		100.00	2.50E+00	3.09E+00	3.31E+00
			1332.49		100.00	7.82E-01		3.09E+00
+		ZN-65	1115.52		50.75	-3.32E+00	7.49E+00	7.49E+00
+		GA-67	93.31		35.70	6.61E+06	3.10E+06	3.10E+06
			208.95		2.24	6.07E+06		5.87E+07
			300.22		16.00	-1.02E+07		1.02E+07
+		SE-75	121.11		16.70	3.37E+00	2.82E+00	9.54E+00