
***** G A M M A S P E C T R U M A N A L Y S I S *****

Filename: C:\GENIE2K\CAMFILES_Madu\ALMERA_2019\Sample_#2-(243k)_2019_W

Report Generated On : 27/09/2019 14:38:21

Sample Title : Almera
Sample Description : ALMERA 2019-04
Sample Identification : Almera
Sample Type :
Sample Geometry :

Peak Locate Threshold : 3.00
Peak Locate Range (in channels) : 1 - 65535
Peak Area Range (in channels) : 1 - 8192
Identification Energy Tolerance : 1.500 keV

Sample Size : 1.000E+000 samp

Sample Taken On :
Acquisition Started : 15/07/2019 15:28:11

Live Time : 243215.3 seconds
Real Time : 243464.5 seconds

Dead Time : 0.10 %

Energy Calibration Used Done On : 04/03/2013
Efficiency Calibration Used Done On : 08/11/2010
Efficiency ID : F100AI3

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

Detector Name: DET01

Sample Title: Almera

Peak Analysis Performed on: 27/09/2019 14:38:21

Peak Analysis From Channel: 1

Peak Analysis To Channel: 8192

	Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	FWHM (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
	1	105-	115	108.07	21.22	0.67	1.39E+003	73.37	1.36E+003
	2	227-	241	236.20	46.53	0.92	2.97E+002	83.99	2.35E+003
	3	264-	276	271.33	53.47	0.80	2.27E+002	73.80	1.98E+003
	4	312-	328	320.95	63.27	0.90	7.97E+002	97.85	2.80E+003
M	5	374-	396	379.61	74.86	0.76	4.11E+002	43.48	2.14E+003
m	6	374-	396	390.58	77.03	0.76	4.72E+002	45.32	2.33E+003
M	7	450-	478	455.34	89.82	1.14	2.44E+002	46.40	2.77E+003
m	8	450-	478	469.71	92.65	1.15	2.26E+003	72.33	3.58E+003
	9	500-	507	503.96	99.42	0.55	1.15E+002	54.64	1.42E+003
	10	649-	662	653.81	129.02	0.77	8.95E+001	84.45	2.55E+003
M	11	703-	736	708.15	139.75	0.87	1.63E+002	41.49	2.09E+003
m	12	703-	736	728.62	143.79	0.88	2.53E+002	45.30	2.51E+003
	13	823-	833	827.69	163.36	0.77	1.88E+002	63.67	1.62E+003
	14	883-	898	893.85	176.43	0.58	1.08E+002	85.08	2.37E+003
	15	935-	950	940.64	185.67	0.91	1.25E+003	90.88	2.30E+003
	16	995-	1015	1004.63	198.31	1.24	2.60E+002	102.46	2.82E+003
M	17	1035-	1066	1039.29	205.15	0.78	7.34E+001	32.04	1.42E+003
m	18	1035-	1066	1059.46	209.14	0.79	2.48E+002	39.91	1.68E+003
	19	1198-	1214	1208.15	238.51	1.02	6.53E+002	81.55	1.92E+003
	20	1424-	1434	1429.02	282.13	0.25	-1.17E+001	48.16	9.73E+002
	21	1486-	1500	1493.77	294.92	1.12	2.77E+002	62.97	1.28E+003
	22	1705-	1724	1712.94	338.21	1.21	4.91E+002	73.62	1.40E+003
	23	1772-	1791	1781.57	351.76	0.91	4.05E+002	72.24	1.37E+003
	24	2285-	2296	2290.33	452.25	0.34	1.32E+001	38.37	5.81E+002
	25	2336-	2350	2343.71	462.79	0.51	4.99E+001	46.28	7.25E+002
	26	2573-	2600	2586.86	510.82	2.32	3.25E+003	98.25	1.42E+003
M	27	2843-	2892	2851.39	563.07	1.18	1.52E+002	25.67	7.45E+002
m	28	2843-	2892	2882.04	569.12	1.19	2.79E+002	30.09	7.81E+002
	29	2942-	2962	2953.27	583.19	0.86	1.65E+002	54.88	7.85E+002
	30	3010-	3025	3019.15	596.20	0.64	8.08E+001	41.72	5.52E+002
M	31	3049-	3096	3061.73	604.61	1.40	2.29E+003	55.21	8.24E+002
m	32	3049-	3096	3084.59	609.13	1.40	3.81E+002	29.68	8.04E+002
	33	3338-	3363	3350.04	661.56	1.46	1.88E+003	70.26	7.15E+002
	34	3674-	3691	3682.76	727.28	1.37	8.72E+001	38.47	4.28E+002
M	35	4014-	4074	4029.90	795.84	1.56	1.61E+003	45.80	5.08E+002
m	36	4014-	4074	4061.97	802.18	1.56	1.75E+002	22.30	5.05E+002
	37	4225-	4240	4232.92	835.94	0.31	8.29E+001	31.40	2.99E+002
	38	4283-	4296	4289.01	847.02	0.31	1.15E-001	27.55	2.75E+002
	39	4601-	4626	4614.81	911.37	1.50	5.26E+002	48.65	4.33E+002
	40	4898-	4922	4907.85	969.25	1.37	3.06E+002	44.94	4.16E+002
	41	5062-	5079	5069.33	1001.14	0.33	9.20E+001	31.65	2.78E+002
	42	6739-	6754	6746.60	1332.43	0.32	8.57E+000	21.81	1.55E+002

Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	FWHM (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
43	7384-	7418	7401.10	1461.70	1.92	5.52E+002	47.58	3.19E+002
44	8063-	8082	8070.95	1594.01	0.66	7.45E+001	24.53	1.50E+002

M = First peak in a multiplet region

m = Other peak in a multiplet region

F = Fitted singlet

Errors quoted at 1.000 sigma

***** N U C L I D E I D E N T I F I C A T I O N R E P O R T *****

Sample Title: Almera

Nuclide Library Used: C:\GENIE2K\CAMFILES\ALM18.NLB

..... IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)	Yield (%)	Activity (Bq /samp)	Activity Uncertainty
NA-22	0.557	511.00*	179.79	3.20007E-002	1.97209E-002
		1274.54	99.94		
K-40	0.938	1460.75*	10.67	-2.33968E-001	3.73491E-001
MN-54	0.916	834.83*	99.97	3.19562E-002	1.21265E-002
CS-134	0.955	475.35	1.46		
		563.23*	8.38	5.07272E-001	8.63196E-002
		569.32*	15.43	5.10913E-001	5.60169E-002
		604.70*	97.60	6.95165E-001	2.17577E-002
		795.84*	85.40	6.96735E-001	2.45666E-002
		801.93*	8.73	1.47703E-001	2.33282E-001
		1038.57	1.00		
		1167.94	1.80		
		1365.15	3.04		
CS-137	0.999	661.66*	85.21	7.01437E-001	2.98056E-002
PB-210	1.000	46.54*	4.06	-1.93249E-001	1.83382E-001

* = Energy line found in the spectrum.

@ = Energy line not used for Weighted Mean Activity

Energy Tolerance : 1.500 keV

Nuclide confidence index threshold = 0.30

Errors quoted at 1.000 sigma

***** I N T E R F E R E N C E C O R R E C T E D R E P O R T *****

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (Bq /samp)	Wt mean Activity Uncertainty
NA-22	0.557	3.200072E-002	1.972088E-002
K-40	0.938	-2.339684E-001	3.734907E-001
MN-54	0.916	3.195620E-002	1.212651E-002
CS-134	0.955	6.753441E-001	1.617549E-002
CS-137	0.999	7.014367E-001	2.980557E-002
PB-210	1.000	-1.932489E-001	1.833825E-001

? = 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 1.000 sigma

***** U N I D E N T I F I E D P E A K S *****

Peak Locate Performed on: 27/09/2019 14:38:21
 Peak Locate From Channel: 1
 Peak Locate To Channel: 8192

Peak No.	Energy (keV)	Peak Size in Counts per Second	Peak CPS % Uncertainty	Peak Type	Tol. Nuclide
1	21.22	1.8211E-003	22.26		
3	53.47	7.1041E-004	54.79	Tol.	BA-133
4	63.27	-3.5270E-004	-128.20		
M 5	74.86	1.6892E-003	10.58		
m 6	77.03	8.6181E-004	36.74		
M 7	89.82	1.0016E-003	19.05		
m 8	92.65	1.0971E-003	47.55	Sum	
9	99.42	4.7369E-004	47.43		
10	129.02	3.6808E-004	94.34		
M 11	139.75	1.3398E-004	166.54		
m 12	143.79	3.6468E-004	66.24		
13	163.36	2.5273E-004	150.77	Tol.	CS-136
14	176.43	4.4231E-004	79.09	Tol.	CS-136
15	185.67	3.9475E-004	137.62		
16	198.31	1.0675E-003	39.46		
M 17	205.15	3.0182E-004	43.64		
m 18	209.14	1.0207E-003	16.08		
19	238.51	6.7710E-004	65.78		
20	282.13	-4.8108E-005	-411.63		
21	294.92	1.1384E-003	22.74		
22	338.21	2.0185E-003	15.00		
23	351.76	1.0285E-003	34.55		
24	452.25	5.4198E-005	291.08		
25	462.79	2.0505E-004	92.80		
29	583.19	2.4567E-005	1155.04		
30	596.20	-3.0708E-005	-755.54		
m 32	609.13	9.0657E-004	24.72	Sum	
34	727.28	3.5849E-004	44.12		
38	847.02	4.7091E-007	24057.1		
39	911.37	1.8519E-003	13.81		
40	969.25	1.0425E-003	21.27		
41	1001.14	3.7840E-004	34.39		
42	1332.43	3.5224E-005	254.53	Tol.	CO-60
44	1594.01	9.2169E-005	145.99		

M = First peak in a multiplet region

m = Other peak in a multiplet region

F = Fitted singlet

Errors quoted at 1.000 sigma

 ***** N U C L I D E M D A R E P O R T *****

Detector Name: DET01
 Sample Geometry:
 Sample Title: Almera
 Nuclide Library Used: C:\GENIE2K\CAMFILES\ALM18.NLB

	Nuclide Name	Energy (keV)	Yield (%)	Line MDA (Bq /samp)	Nuclide MDA (Bq /samp)	Activity (Bq /samp)
+	NA-22	511.00*	179.79	6.4856E-002	6.49E-002	3.2001E-00
		1274.54	99.94	7.2315E-002		-8.5138E-00
+	K-40	1460.75*	10.67	1.2502E+000	1.25E+000	-2.3397E-00
	CO-58	810.78	99.45	6.1214E-002	6.12E-002	-3.4783E-00
>		1674.73	0.52	0.0000E+000		0.0000E+00
	CO-60	1173.23	99.85	7.2944E-002	7.00E-002	3.4056E-00
		1332.50	99.98	6.9977E-002		-7.0772E-00
	I-131	80.18	2.62	1.1747E+000	6.99E-002	-1.5412E+00
		284.30	6.06	8.9224E-001		4.1709E-00
		364.48	81.20	6.9949E-002		5.2214E-00
		636.97	7.27	8.7188E-001		-1.2665E-00
		722.89	1.80	3.7973E+000		1.9406E+00
	BA-133	53.16	2.20	1.0074E+000	7.99E-002	7.1896E-00
		79.62	2.62	1.0585E+000		-2.8629E-00
		81.00	34.10	7.9938E-002		-1.2522E-00
		160.61	0.64	6.4059E+000		-2.4512E-00
		223.23	0.45	1.0268E+001		5.6822E+00
		276.40	7.16	6.6522E-001		-3.1824E-00
		302.85	18.33	2.6246E-001		-3.0066E-00
		356.02	62.05	8.6803E-002		6.5754E-00
		383.85	8.94	5.7627E-001		2.4996E-00
+	CS-134	475.35	1.46	3.7157E+000	4.13E-002	5.0432E-00
		563.23*	8.38	4.3314E-001		5.0727E-00
		569.32*	15.43	2.4273E-001		5.1091E-00
		604.70*	97.60	4.1310E-002		6.9516E-00
		795.84*	85.40	4.6479E-002		6.9673E-00
		801.93*	8.73	8.5813E-001		1.4770E-00
		1038.57	1.00	6.7953E+000		2.3263E+00
		1167.94	1.80	3.9949E+000		-2.2672E+00
		1365.15	3.04	2.4465E+000		3.6126E+00
	CS-136	66.88	4.79	5.2646E-001	6.47E-002	2.3869E-00
		86.36	5.18	6.1332E-001		8.0695E-00
		153.25	5.75	7.5046E-001		-3.4283E-00
		163.92	3.39	1.2983E+000		-6.2413E-00
		176.60	10.00	4.6622E-001		-3.0058E-00
		273.65	11.10	4.7046E-001		-2.4934E-00
		340.55	42.20	1.3902E-001		2.7318E-00
		818.51	99.70	6.4726E-002		1.3741E-00
		1048.07	80.00	9.2166E-002		-1.1608E-00
		1235.36	20.00	3.9960E-001		-3.9585E-00
+	CS-137	661.66*	85.21	6.8816E-002	6.88E-002	7.0144E-00
+	PB-210	46.54*	4.06	6.0988E-001	6.10E-001	-1.9325E-00

Nuclide Name	Energy (keV)	Yield (%)	Line MDA (Bq /samp)	Nuclide MDA (Bq /samp)	Activity (Bq /samp)
AM-241	26.34	2.31	1.9531E+000	6.12E-002	-3.8619E-00
	59.54	35.92	6.1163E-002		6.0950E-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