
***** GAMMA SPECTRUM ANALYSIS *****

Filename: REGE

Report Generated On : 2/23/2021 12:18:24 PM

Sample Title : TRIGA Backyard
Sample Description : TRIGA Survey Unit 12
Sample Identification : GA-12-CONC-33-2
Sample Type : Concrete
Sample Geometry : Marinelli

Peak Locate Threshold : 3.00
Peak Locate Range (in channels) : 1 - 65535
Peak Area Range (in channels) : 1 - 65535
Identification Energy Tolerance : 1.000 keV

Sample Size : 6.816E+002 grams

Sample Taken On : 2/23/2021 10:53:04 AM
Acquisition Started : 2/23/2021 10:53:04 AM

Live Time : 1800.0 seconds
Real Time : 1803.9 seconds

Dead Time : 0.22 %

Energy Calibration Used Done On : 7/16/2019
Efficiency Calibration Used Done On : 7/16/2019
Efficiency ID : Marinelli 041219

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

Detector Name: REGE
 Sample Title: TRIGA Backyard
 Peak Analysis Performed on: 2/23/2021 12:18:24 PM
 Peak Analysis From Channel: 1
 Peak Analysis To Channel: 4096

	Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	FWHM (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
M	1	144-	159	150.10	74.76	1.18	7.72E+002	43.37	3.18E+003
m	2	144-	159	154.71	77.06	1.18	1.07E+003	48.48	3.26E+003
M	3	169-	191	174.78	87.09	1.31	4.13E+002	41.48	3.28E+003
m	4	169-	191	180.01	89.71	1.32	2.10E+002	37.45	3.64E+003
m	5	169-	191	186.30	92.85	1.32	3.11E+002	40.42	4.00E+003
	6	257-	262	259.06	129.22	1.09	9.03E+001	56.72	1.76E+003
	7	367-	376	372.78	186.06	1.22	2.54E+002	68.05	1.94E+003
	8	415-	423	419.36	209.34	1.36	7.25E+001	56.92	1.48E+003
	9	472-	483	477.94	238.62	1.13	1.54E+003	80.94	1.99E+003
M	10	538-	561	541.11	270.20	0.97	1.28E+002	24.49	7.64E+002
m	11	538-	561	555.31	277.29	0.98	1.07E+002	22.27	7.76E+002
M	12	586-	607	591.17	295.22	1.23	5.17E+002	30.16	7.95E+002
m	13	586-	607	601.10	300.18	1.24	1.17E+002	21.50	7.84E+002
	14	672-	683	677.27	338.26	1.33	3.89E+002	49.01	8.01E+002
	15	700-	710	704.67	351.95	1.28	1.03E+003	50.97	6.58E+002
	16	921-	932	926.45	462.80	1.56	1.37E+002	35.48	4.48E+002
	17	1015-	1029	1022.47	510.80	1.26	4.10E+002	41.64	4.59E+002
	18	1160-	1174	1167.34	583.20	1.72	7.97E+002	43.32	3.75E+002
	19	1212-	1226	1219.61	609.33	1.67	8.84E+002	44.86	3.92E+002
	20	1450-	1462	1455.24	727.10	1.99	1.60E+002	28.80	2.54E+002
	21	1532-	1542	1537.65	768.29	1.27	2.91E+001	25.75	2.66E+002
	22	1584-	1597	1591.07	794.99	1.00	7.23E+001	26.47	2.27E+002
	23	1716-	1728	1722.64	860.76	1.56	5.88E+001	24.30	2.02E+002
	24	1764-	1771	1767.18	883.02	1.07	-4.90E-001	16.47	1.31E+002
	25	1818-	1830	1823.43	911.13	1.67	5.71E+002	31.43	1.56E+002
M	26	1925-	1945	1930.69	964.75	1.49	9.27E+001	13.39	1.85E+002
m	27	1925-	1945	1939.03	968.91	1.49	2.95E+002	19.86	1.74E+002
	28	2233-	2249	2241.93	1120.31	2.14	2.30E+002	31.48	2.43E+002
	29	2470-	2484	2477.47	1238.04	2.03	1.41E+002	27.95	2.22E+002
	30	2750-	2761	2756.16	1377.34	1.64	3.50E+001	15.17	7.80E+001
	31	2814-	2822	2818.04	1408.27	1.14	2.15E+001	10.95	4.55E+001
	32	2914-	2930	2922.92	1460.69	1.98	2.95E+003	55.74	4.94E+001
	33	3172-	3182	3177.30	1587.83	0.66	3.13E+001	13.20	5.87E+001
	34	3258-	3265	3261.33	1629.84	0.68	1.20E+001	8.37	2.70E+001
	35	3453-	3465	3460.45	1729.36	1.10	3.95E+001	9.53	1.95E+001
	36	3522-	3537	3530.35	1764.30	1.85	2.17E+002	17.86	3.40E+001
	37	3691-	3702	3696.94	1847.56	1.62	3.08E+001	8.78	1.82E+001

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: TRIGA Backyard
 Nuclide Library Used: C:\GENIE2K\CAMFILES\STDLIB.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)	Yield (%)	Activity (uCi/gram)	Activity Uncertainty
K-40	0.998	1460.81*	10.67	7.60820E-005	2.52836E-006
BI-212	0.479	39.86	1.10		
		727.17*	11.80	2.11507E-006	3.82949E-007
		785.42	2.00		
PB-212	0.987	1620.56	2.75		
		74.81*	9.60	3.54932E-006	2.29658E-007
		77.11*	17.50	2.68254E-006	1.50095E-007
		87.20*	6.30	2.88034E-006	3.04026E-007
		89.80*	1.75	5.27618E-006	9.56887E-007
		115.19	0.60		
BI-214	0.832	238.63*	44.60	2.26248E-006	1.34503E-007
		300.09*	3.41	2.62252E-006	4.88046E-007
		609.31*	46.30	2.56545E-006	1.42793E-007
		768.36*	5.04	9.41356E-007	8.33480E-007
		806.17	1.23		
		934.06	3.21		
		1120.29*	15.10	3.39854E-006	4.71521E-007
		1155.19	1.69		
		1238.11*	5.94	5.74474E-006	1.14558E-006
		1280.96	1.47		
		1377.67*	4.11	2.23457E-006	9.71845E-007
1385.31	0.78				
1401.50	1.39				
1407.98*	2.48	2.31461E-006	1.18228E-006		
1509.19	2.19				
1661.28	1.15				
1729.60*	3.05	4.05030E-006	9.83050E-007		
1764.49*	15.80	4.35427E-006	3.84026E-007		
1847.44*	2.12	4.75786E-006	1.36937E-006		
2118.54	1.21				
PB-214	0.846	74.81*	6.33	5.38285E-006	3.48297E-007
		77.11*	10.70	4.38734E-006	2.45483E-007
		87.20*	3.70	4.90437E-006	5.17666E-007
		89.80*	1.03	8.96439E-006	1.62578E-006
		241.98	7.49		
		295.21*	19.20	2.04103E-006	1.29725E-007
351.92*	37.20	2.38183E-006	1.30335E-007		
785.91	1.10				
RA-226	0.996	186.21*	3.28	4.36118E-006	1.17466E-006
AC-228	0.880	89.95*	2.10	4.39682E-006	7.97406E-007
		93.35*	3.50	3.91755E-006	5.24174E-007

Nuclide Name	Id Confidence	Energy (keV)	Yield (%)	Activity (uCi/gram)	Activity Uncertainty
AC-228	0.880	129.08*	2.80	1.53695E-006	9.65729E-007
		209.28*	4.40	9.93877E-007	7.80253E-007
		270.23*	3.60	2.53727E-006	4.89020E-007
		327.64	3.20		
		338.32*	11.40	2.86077E-006	3.66478E-007
		409.51	2.13		
		463.00*	4.40	3.34214E-006	8.67493E-007
		794.70*	4.60	2.63775E-006	9.67459E-007
		911.60*	27.70	3.87245E-006	2.28822E-007
		964.60*	5.20	3.51425E-006	5.13454E-007
		969.11*	16.60	3.51040E-006	2.48800E-007
		1587.90*	3.71	2.47366E-006	1.04463E-006

* = Energy line found in the spectrum.

@ = Energy line not used for Weighted Mean Activity

Energy Tolerance : 1.000 keV

Nuclide confidence index threshold = 0.30

Errors quoted at 1.000 sigma

 ***** INTERFERENCE CORRECTED REPORT *****

	Nuclide Name	Nuclide Id Confidence	Wt mean Activity (uCi/gram)	Wt mean Activity Uncertainty
	K-40	0.998	7.608201E-005	2.528357E-006
X	CD-109	0.869		
	BI-212	0.479	2.115072E-006	3.829488E-007
	PB-212	0.987	1.908952E-006	9.132596E-008
	BI-214	0.832	2.840723E-006	1.232527E-007
	PB-214	0.846	2.097109E-006	8.736676E-008
	RA-226	0.996	4.361181E-006	1.174664E-006
	AC-228	0.880	3.323550E-006	1.271735E-007
X	U-235	0.516		

? = 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

***** UNIDENTIFIED PEAKS *****

Peak Locate Performed on: 2/23/2021 12:18:24 PM
 Peak Locate From Channel: 1
 Peak Locate To Channel: 4096

Peak No.	Energy (keV)	Peak Size in Counts per Second	Peak CPS % Uncertainty	Peak Type	Tol. Nuclide
m 11	277.29	5.9181E-002	20.90	Tol.	BA-133
17	510.80	2.2796E-001	10.15		
18	583.20	4.4267E-001	5.44		
23	860.76	3.2668E-002	41.32	Sum	
24	883.02	-2.7248E-004	-3358.7	Sum	
34	1629.84	6.6524E-003	69.89		

M = First peak in a multiplet region
 m = Other peak in a multiplet region
 F = Fitted singlet

Errors quoted at 1.000 sigma