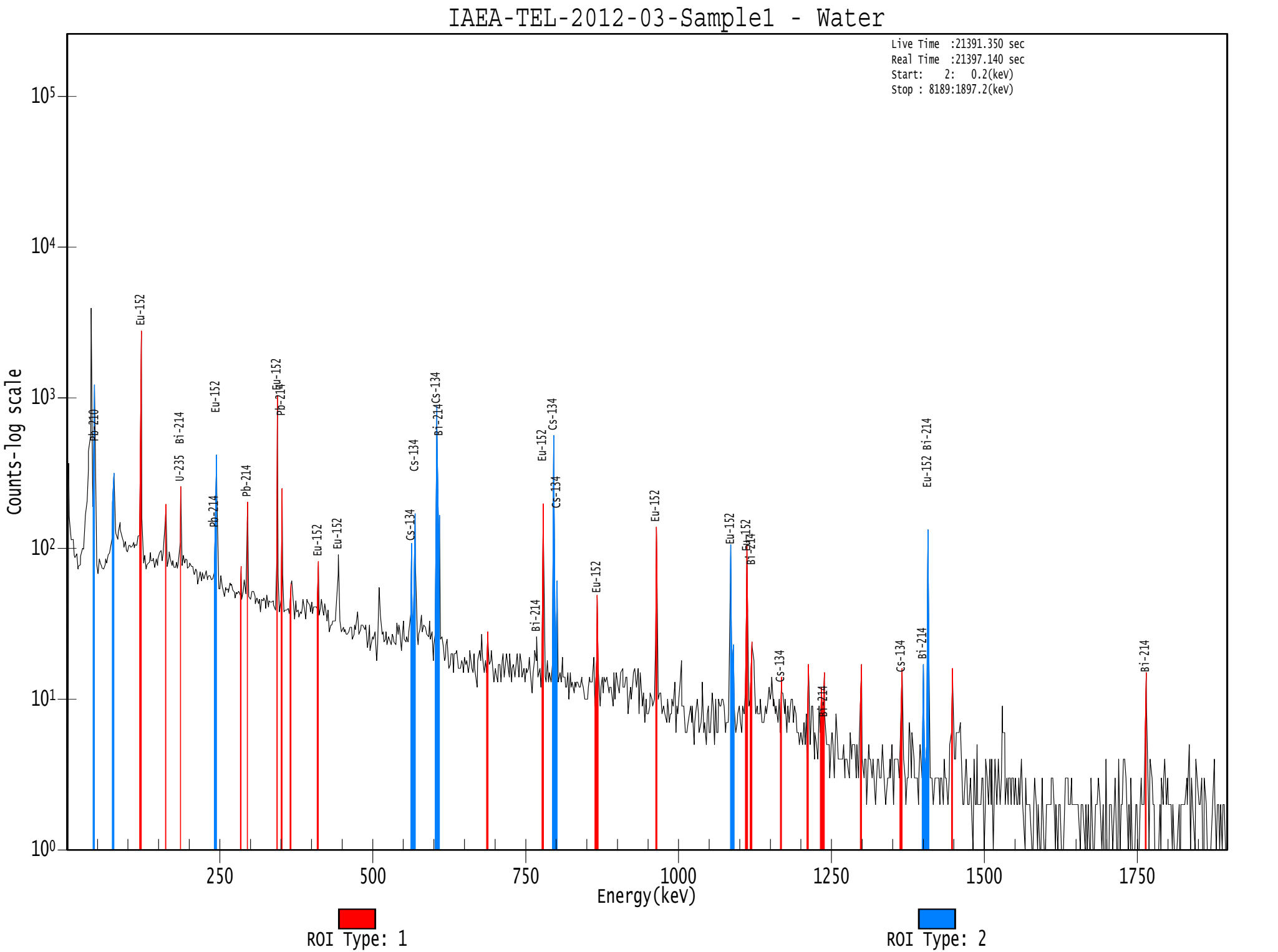
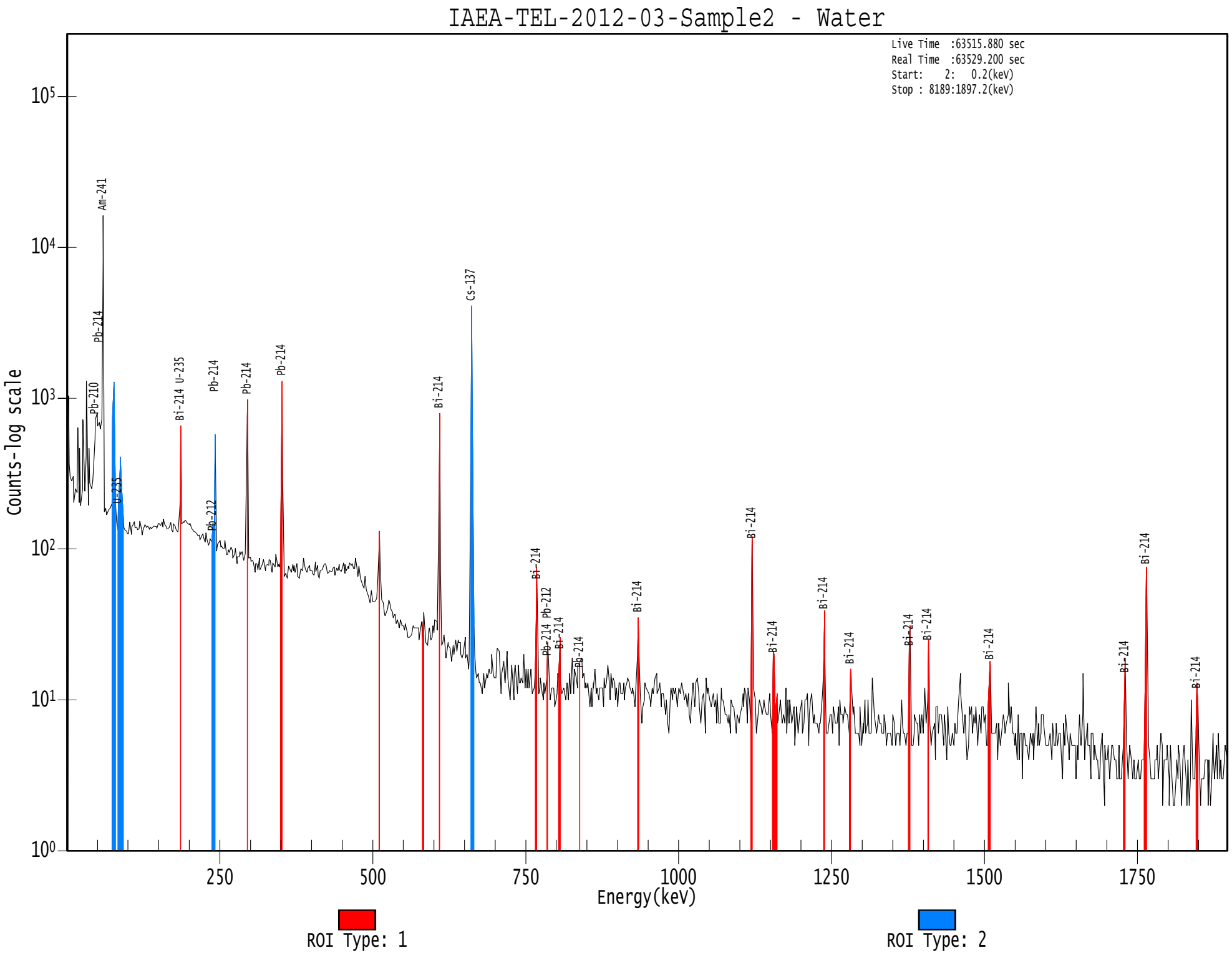
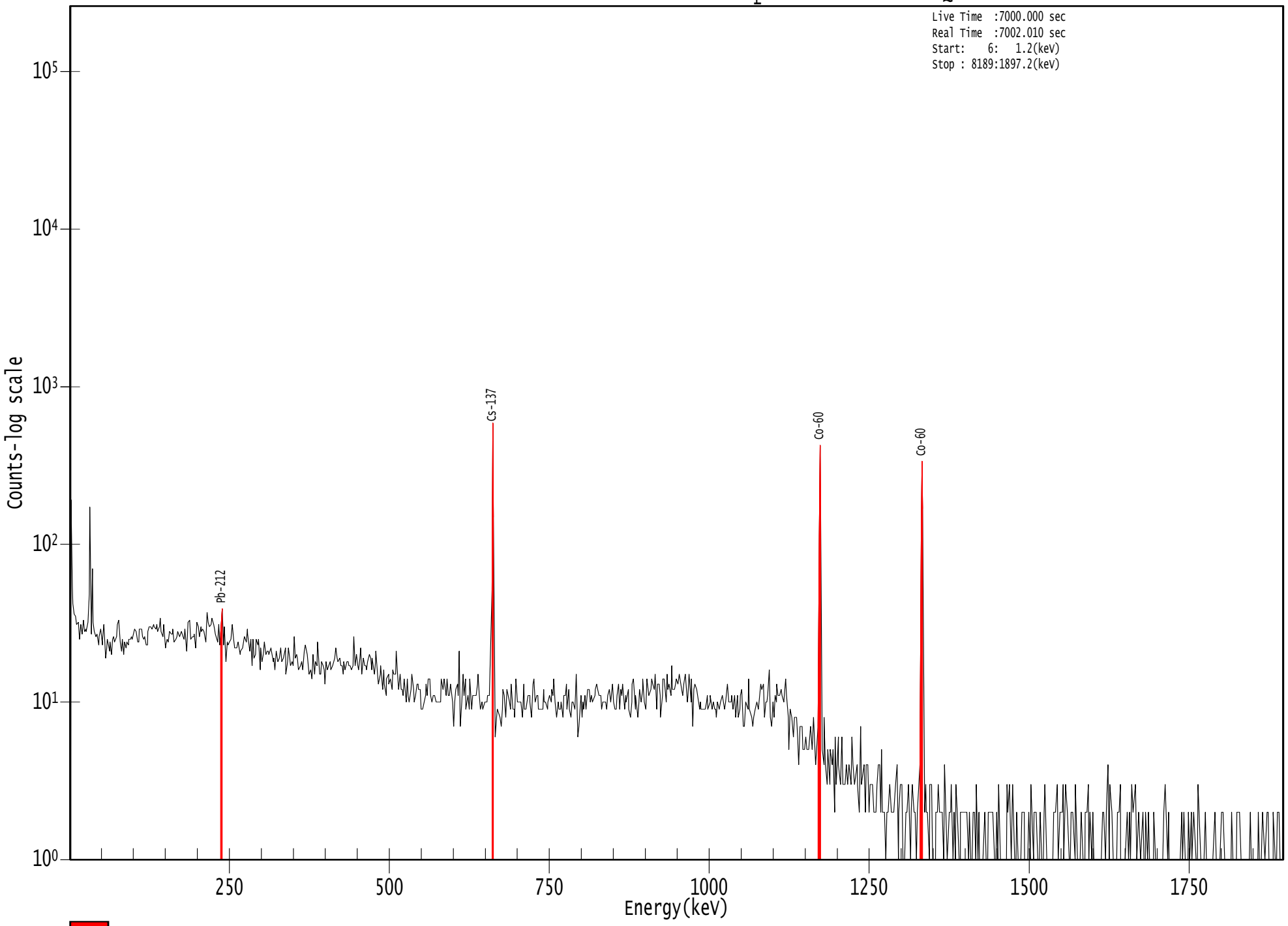
The IAEA-TEL-2012-03 world wide open proficiency test on the determination of radionuclides in water, hay and soil

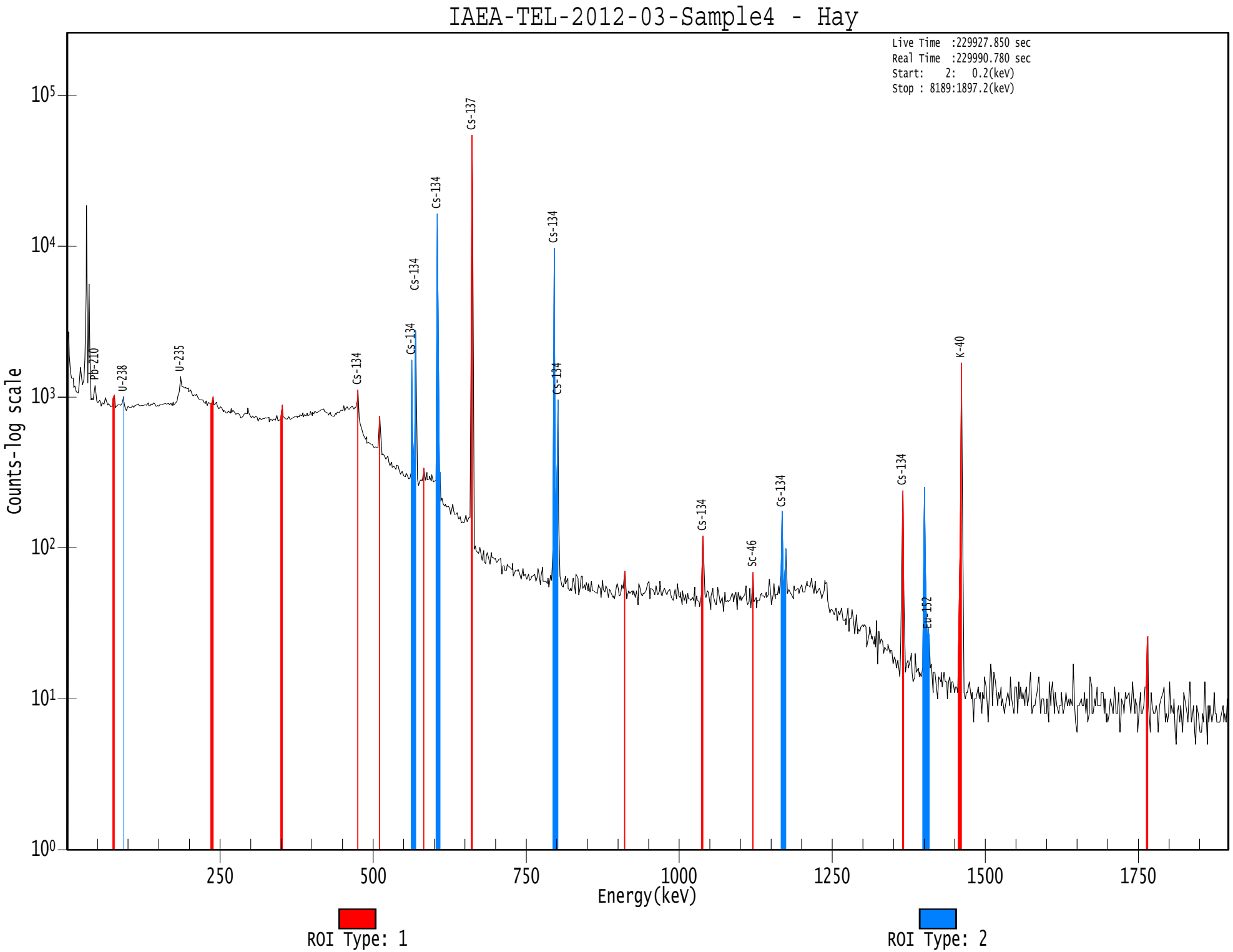
Measured Gamma Spectra and Calibration Plots
Laboratory Code: 5 (CuNo: 13949)
Total Pages (with cover): 15

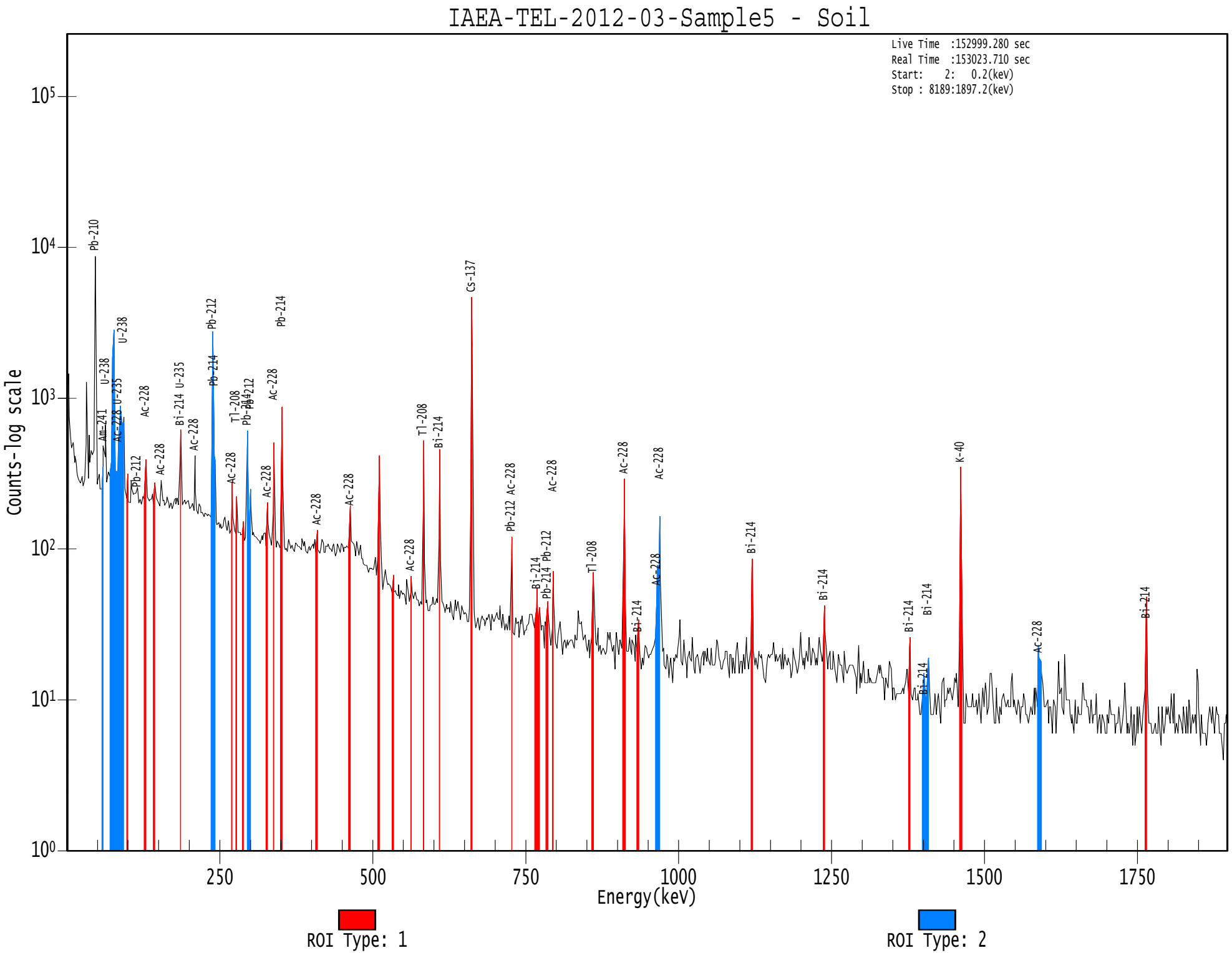

IAEA-TEL-2012-03-Sample1 - Water
Live Time :21391.350 sec
Real Time :21397.140 sec
Start: 2: 0.2(keV)
Stop : 8189:1897.2(keV)
Counts-log scale
Energy(keV)
ROI Type: 1
ROI Type: 2


IAEA-TEL-2012-03-Sample2 - Water
Live Time :63515.880 sec
Real Time :63529.200 sec
Start: 2: 0.2(keV)
Stop : 8189:1897.2(keV)
Counts-log scale
Energy(keV)
Am-241
Pb-214
Pb-210
U-235
Bi-214 U-235
Pb-214
Pb-212
Pb-214
Pb-214
Bi-214
Cs-137
Bi-214
Pb-214 Pb-212
Bi-214
Pb-214
Bi-214
Bi-214
Bi-214
Bi-214
Bi-214
Bi-214
Bi-214
Bi-214
Bi-214
ROI Type: 1
ROI Type: 2

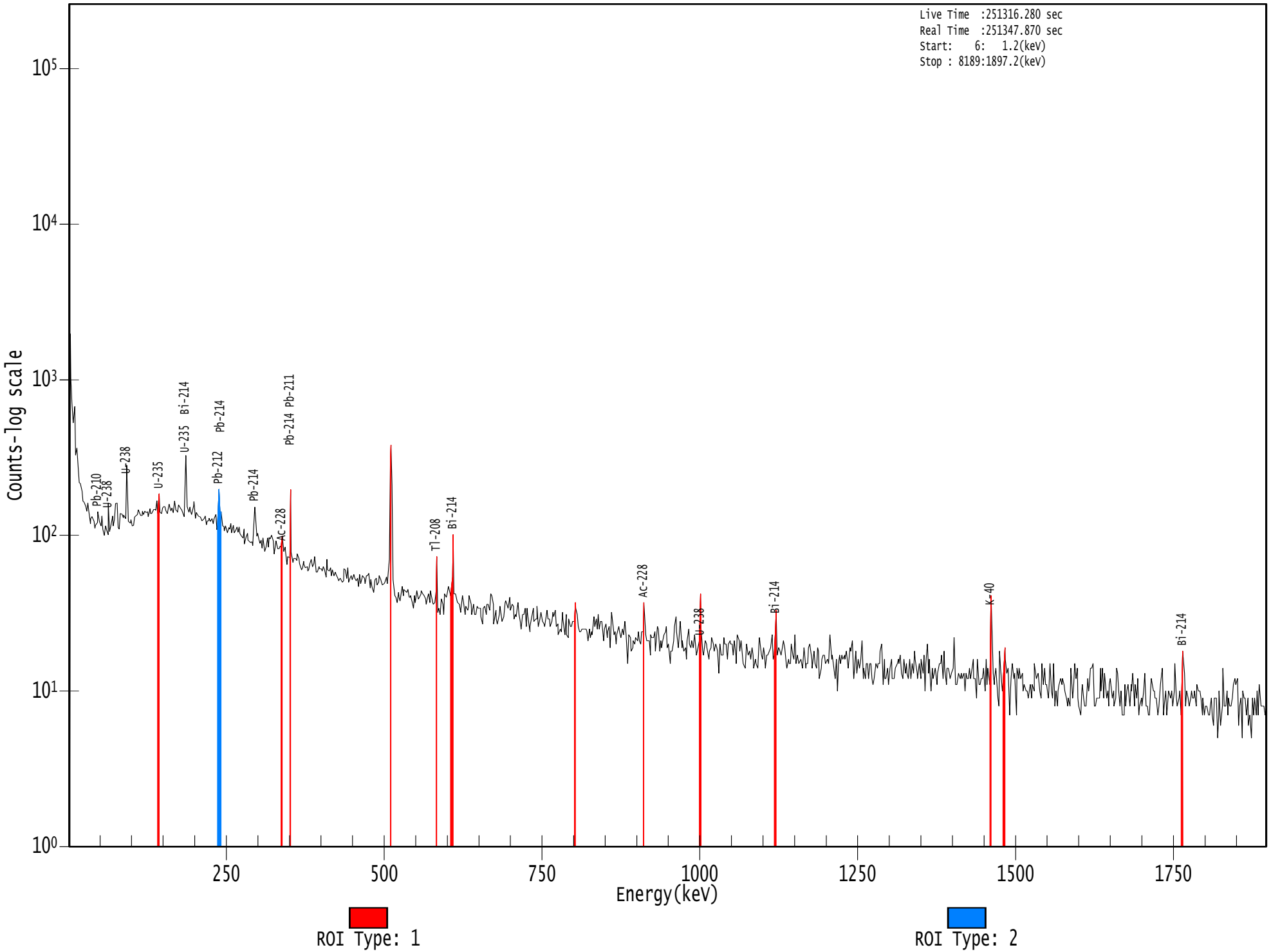
IAEA-TEL-2012-03-Sample3 - Water QC

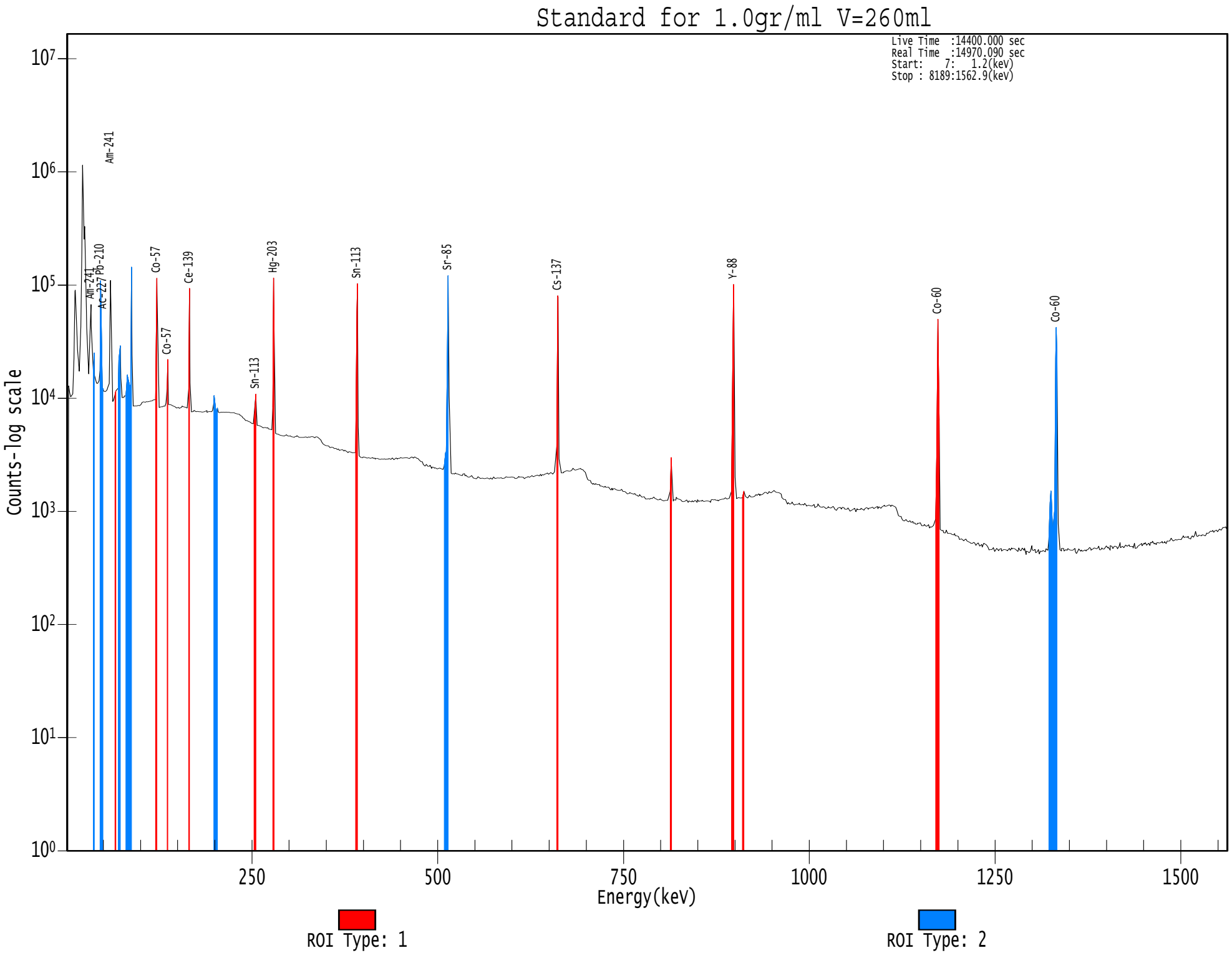


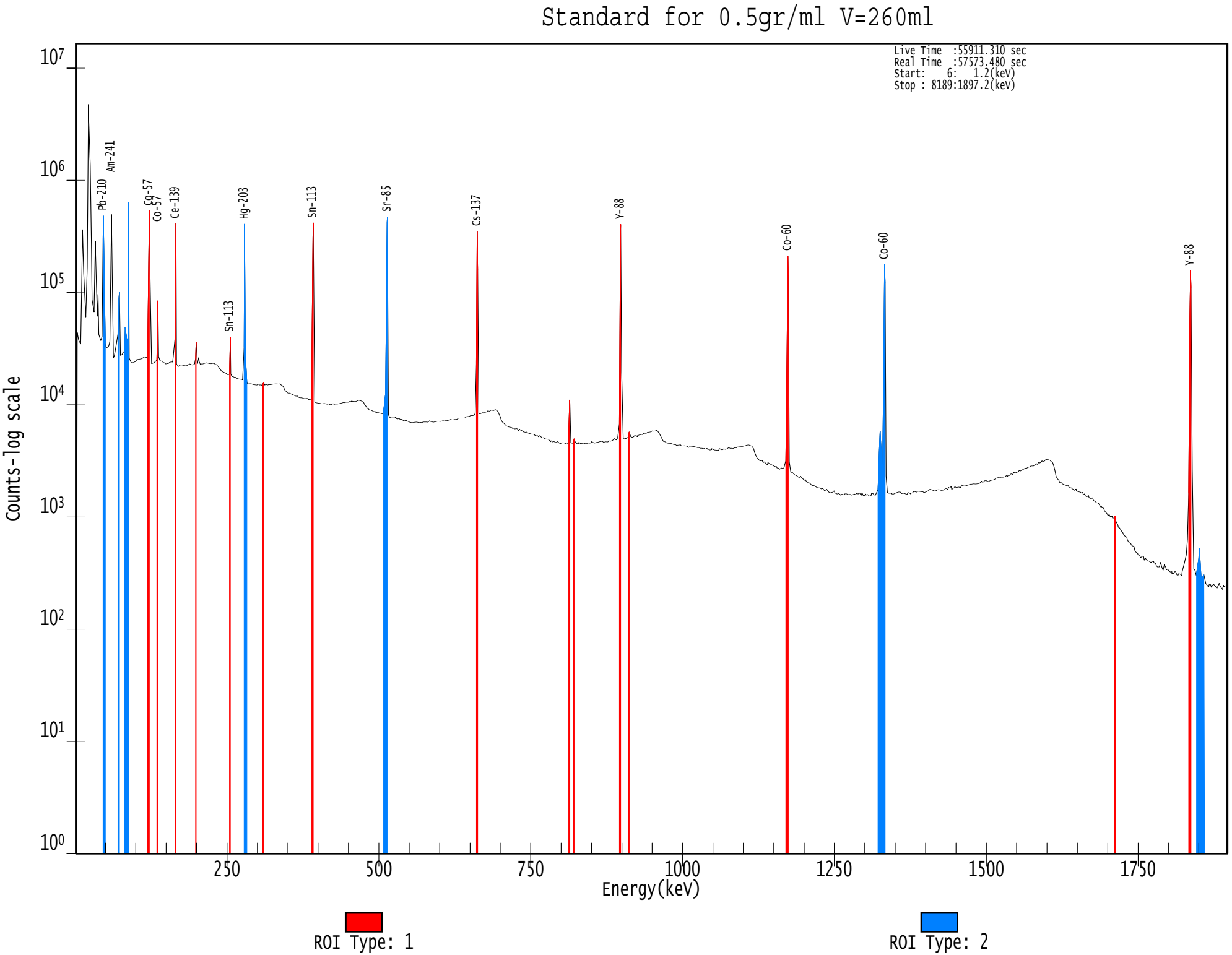

IAEA-TEL-2012-03-Sample4 - Hay
Live Time :229927.850 sec
Real Time :229990.780 sec
Start: 2: 0.2(keV)
Stop : 8189:1897.2(keV)
Counts-log scale
Energy(keV)
Pb-210
U-238
U-235
Cs-134
Cs-137
Sc-46
Eu-152
K-40
ROI Type: 1
ROI Type: 2

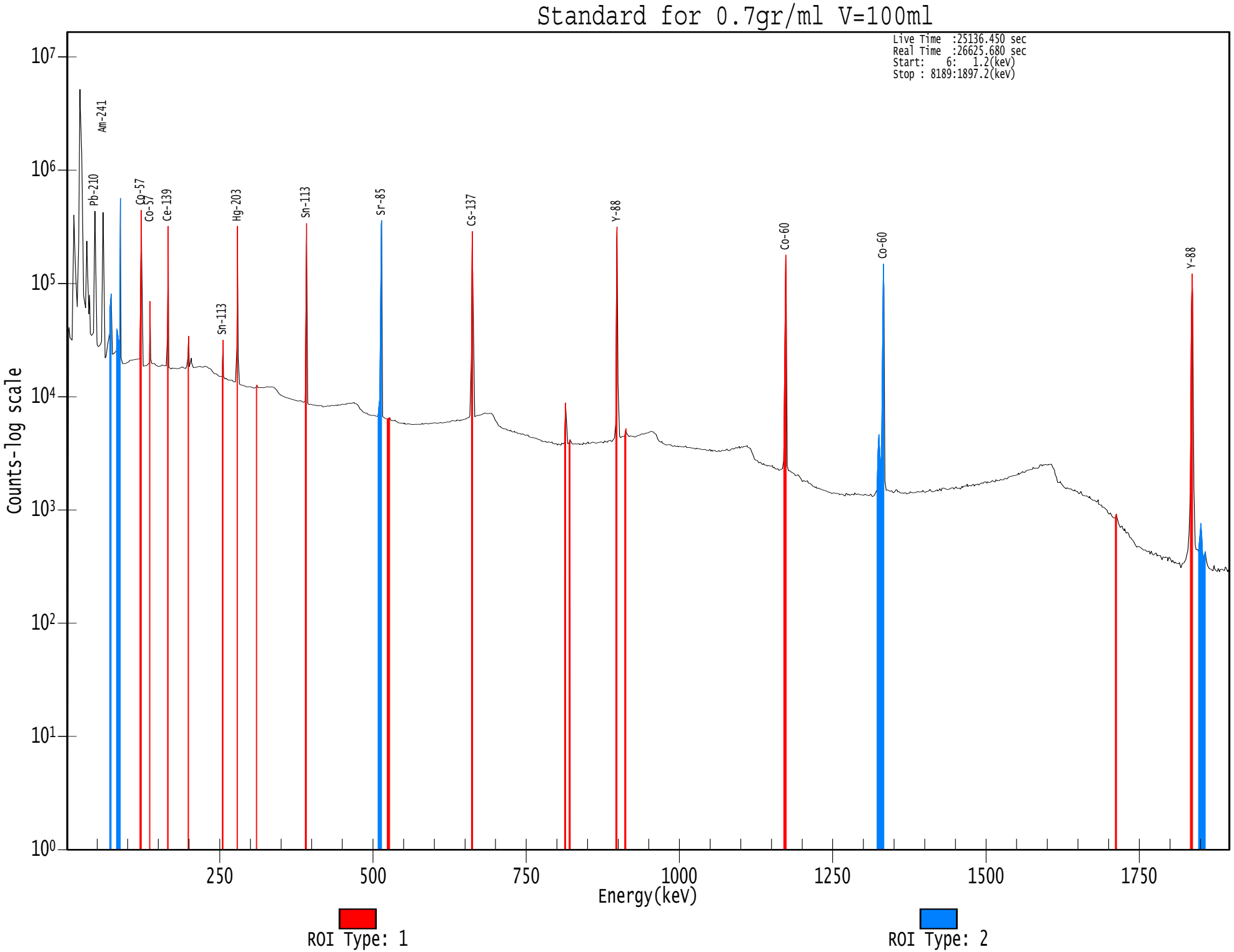

IAEA-TEL-2012-03-Sample5 - Soil
Live Time :152999.280 sec
Real Time :153023.710 sec
Start: 2: 0.2(keV)
Stop : 8189:1897.2(keV)
Counts-log scale
Energy(keV)
ROI Type: 1
ROI Type: 2

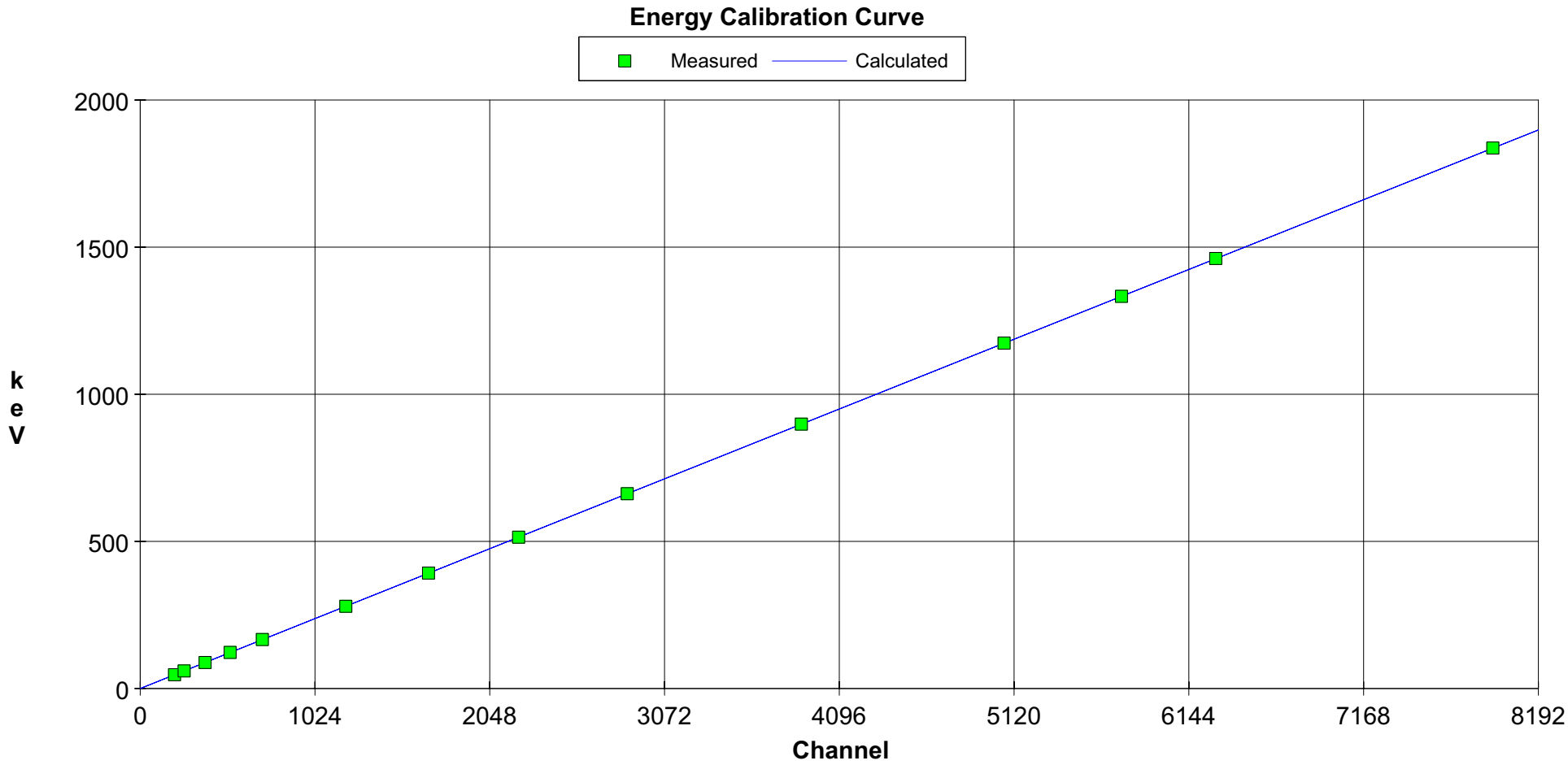
BACKGROUND 2013



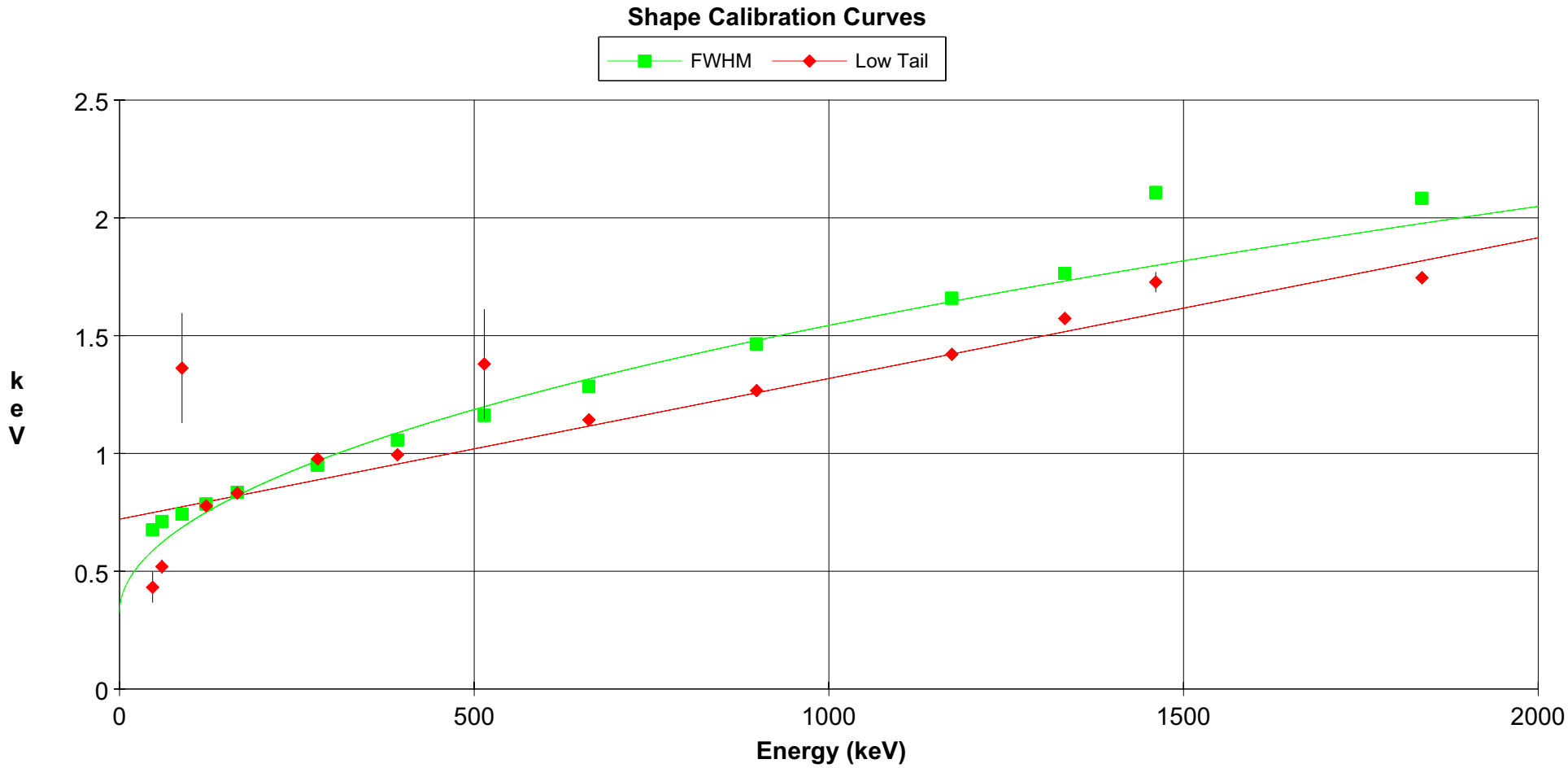

Standard for 1.0gr/ml V=260ml
Live Time :14400.000 sec
Real Time :14970.090 sec
Start: 7: 1.2(keV)
Stop : 8189:1562.9(keV)
Counts-log scale
Energy(keV)
Am-241
Am-241
Pb-210
Ac-227
Co-57
Co-57
Ce-139
Sn-113
Hg-203
Sn-113
Sr-85
Cs-137
Y-88
Co-60
Co-60
ROI Type: 1
ROI Type: 2


Standard for 0.5gr/ml V=260ml
Live Time :55911.310 sec
Real Time :57573.480 sec
Start: 6: 1.2(keV)
Stop : 8189:1897.2(keV)
Counts-log scale
Energy(keV)
Pb-210
Am-241
Co-57
Co-57
Ce-139
Sn-113
Hg-203
Sn-113
Sr-85
Cs-137
Y-88
Co-60
Co-60
Y-88
ROI Type: 1
ROI Type: 2

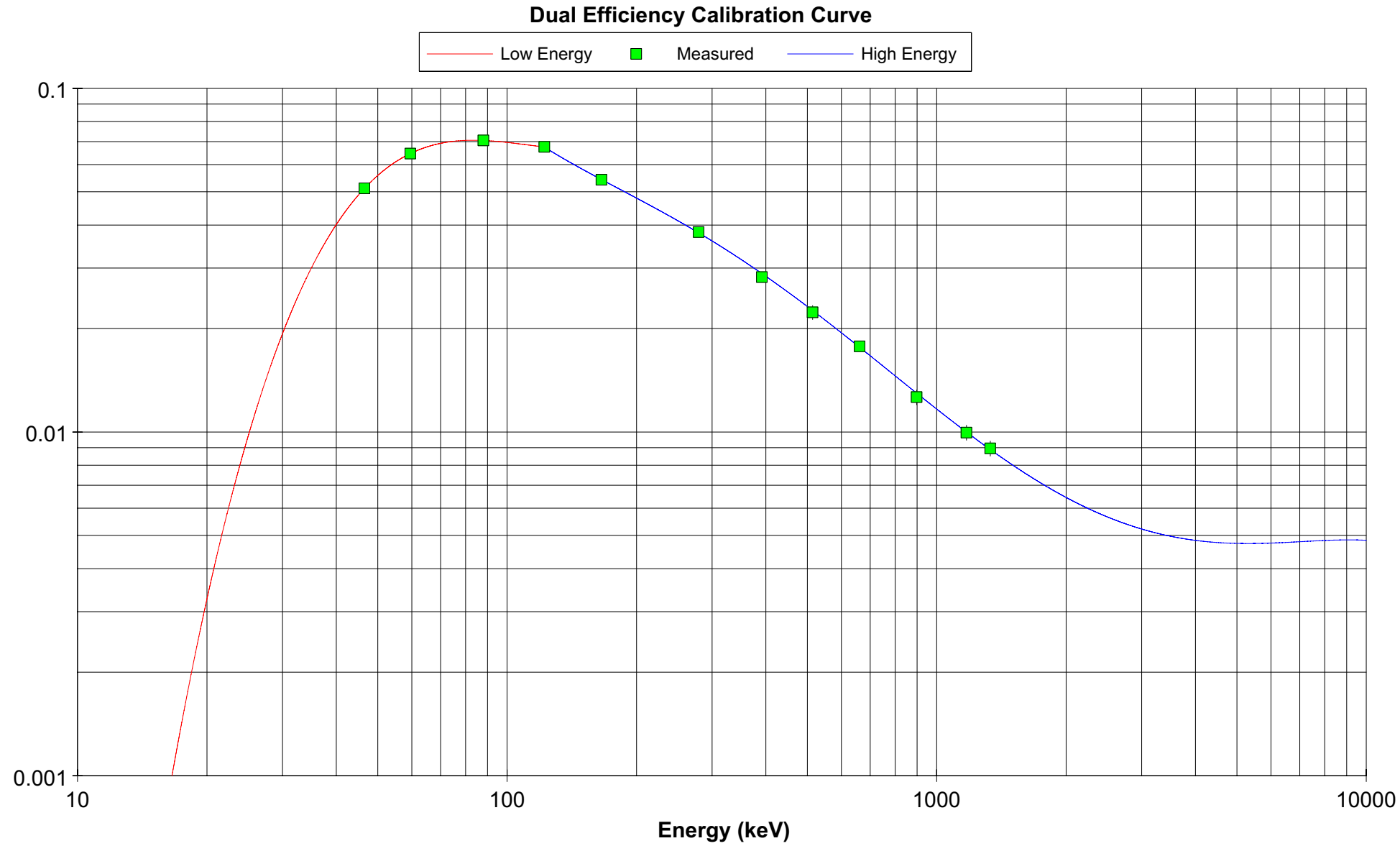

Standard for 0.7gr/ml V=100ml
Live Time :25136.450 sec
Real Time :26625.680 sec
Start: 6: 1.2(keV)
Stop : 8189:1897.2(keV)
Counts-log scale
Energy(keV)
Am-241
Pb-210
Co-57
Co-57
Ce-139
Sn-113
Hg-203
Sn-113
Sr-85
Cs-137
Y-88
Co-60
Co-60
Y-88
ROI Type: 1
ROI Type: 2



Energy = -2.396e-001 keV + 2.321e-001*Ch - 5.339e-008*Ch^2 + 7.272e-013*Ch^3
FWHM = 3.237e-001 keV + 3.857e-002*E^1/2
Lo Tail = 7.207e-001 keV + 5.972e-004*E



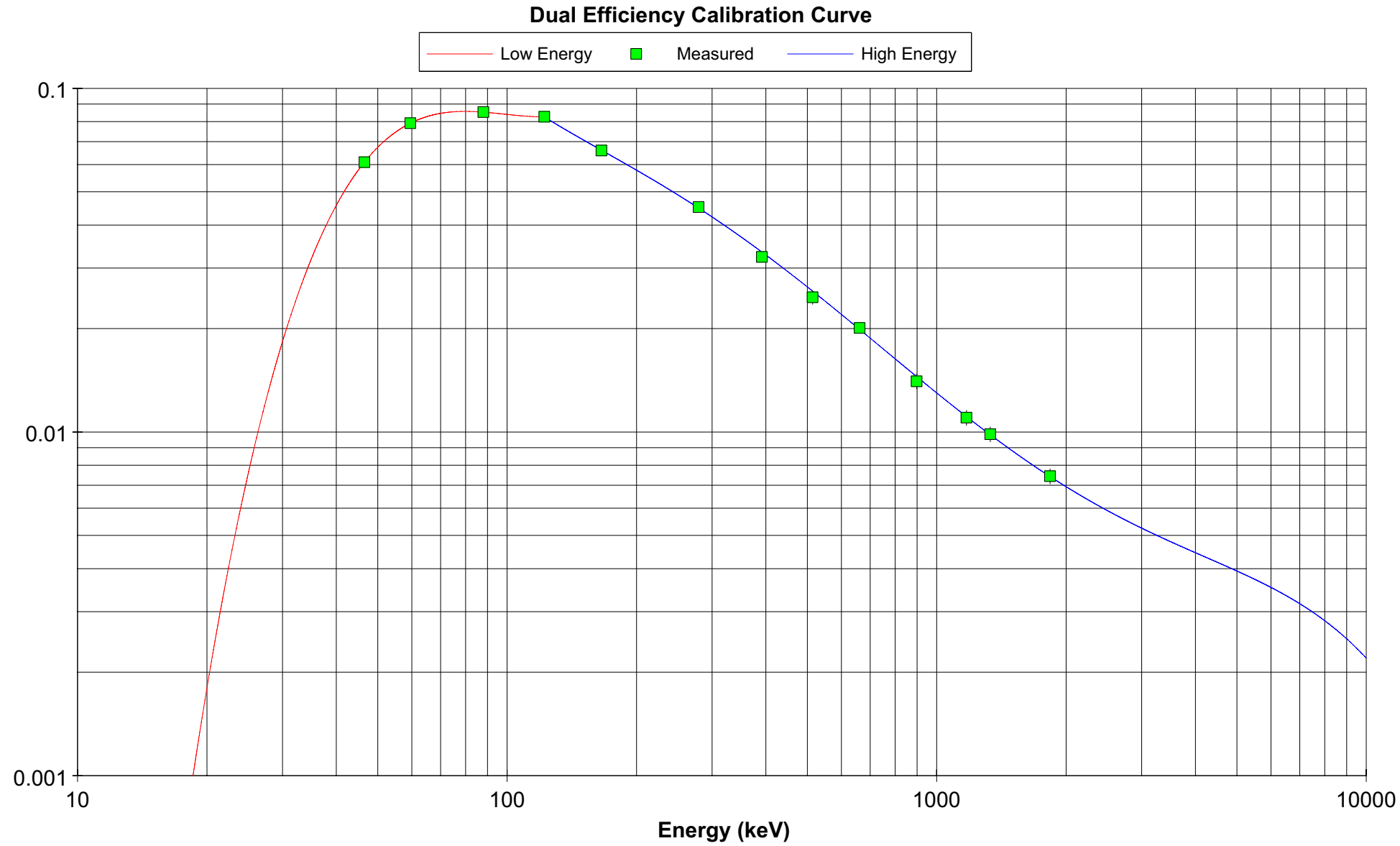
Energy = -2.396e-001 keV + 2.321e-001*Ch - 5.339e-008*Ch^2 + 7.272e-013*Ch^3
FWHM = 3.237e-001 keV + 3.857e-002*E^1/2
Lo Tail = 7.207e-001 keV + 5.972e-004*E



Geometry: CylVol=260ml d=1.0gr/ml

$$\ln(Eff) = -7.112e+001 + 4.395e+001*\ln(E) - 9.374e+000*\ln(E)^2 + 6.641e-001*\ln(E)^3$$

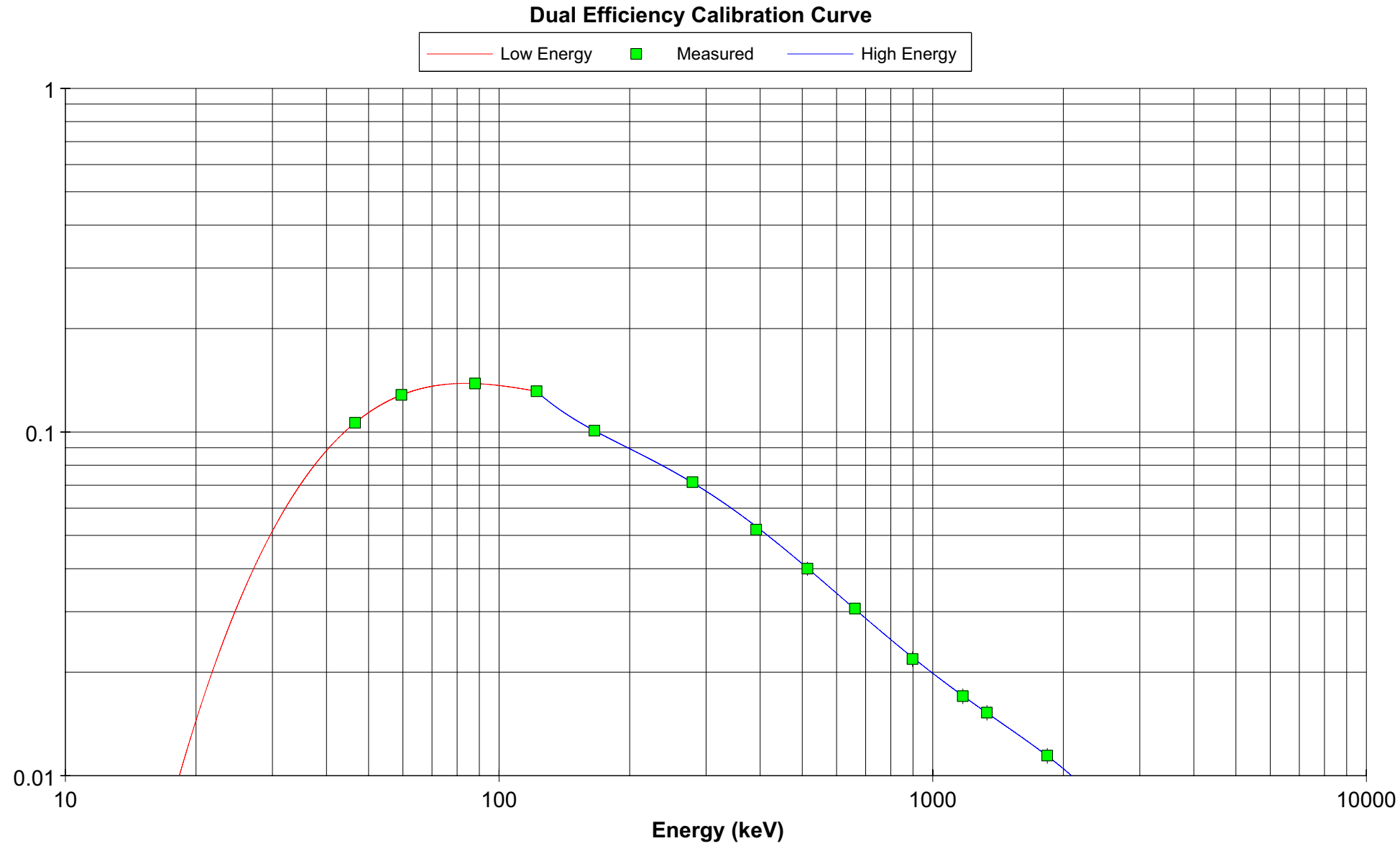
$$\ln(Eff) = 1.470e+002 - 1.163e+002*\ln(E) + 3.583e+001*\ln(E)^2 - 5.437e+000*\ln(E)^3 + 4.032e-001*\ln(E)^4 - 1.168e-002*\ln(E)^5$$



Geometry: CylVol=260ml d=0.5gr/ml

ln(Eff) = -9.899e+001 + 6.338e+001*ln(E) - 1.384e+001*ln(E)^2 + 1.006e+000*ln(E)^3

ln(Eff) = 1.334e+002 - 1.075e+002*ln(E) + 3.385e+001*ln(E)^2 - 5.263e+000*ln(E)^3
+ 4.011e-001*ln(E)^4 - 1.199e-002*ln(E)^5



Geometry: CylVol=100ml d=0.7gr/ml
ln(Eff) = -4.713e+001 + 2.826e+001*ln(E) - 5.854e+000*ln(E)^2 + 4.010e-001*ln(E)^3
ln(Eff) = 6.102e+002 - 4.996e+002*ln(E) + 1.620e+002*ln(E)^2 - 2.608e+001*ln(E)^3
+ 2.080e+000*ln(E)^4 - 6.580e-002*ln(E)^5