



Boulby Underground Germanium Suite

Boulby Mine
Loftus
Saltburn by the Sea
Cleveland
TS13 4UZ

Preliminary assay report for sample BU1936_WLS Fibres

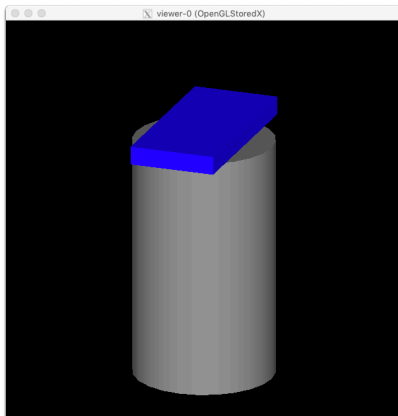
Authors: Paul Scovell, Emma Meehan

21st May 2019

Sender name	Ruben Saakyan
Institute of sender	UCL
Project	Unknown
Date received at Boulby	2019/03/13
Live time of assay	12.1 days
Sample info	126.4 g, BU1936, Wavelength shifting fibres
Status of sample	Still being assayed

Detector	Belmont	Background file	Background_20190502, live time 14.5 days
Simulation Package	Geant 4 (Version 4.10.4.p03)	Specific activity (mBq/kg, mBq/# etc)	mBq/kg
Analysis version number	V1	Person performing Analysis	Paul Scovell

Simulation (Version 4.10.4.p03)



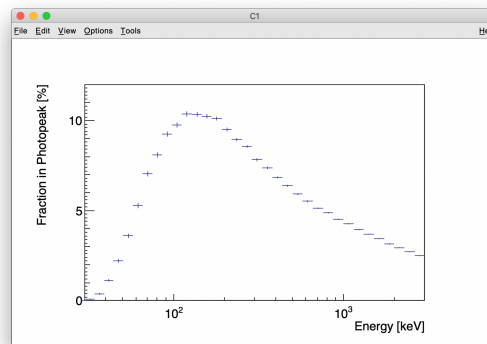
Sample on detector



Sample on scale (Mass includes mass of sample bags)



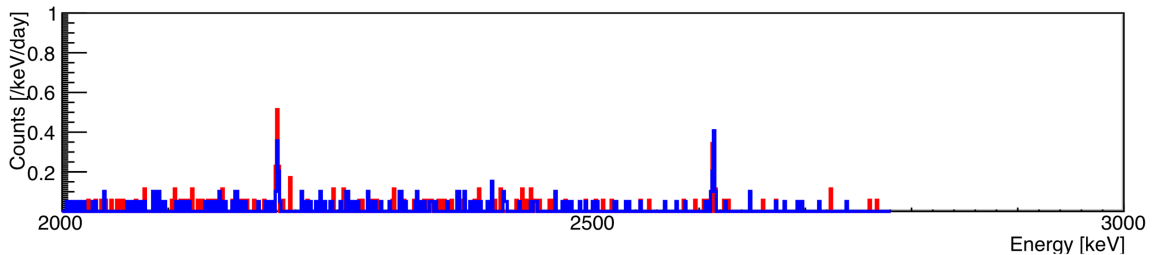
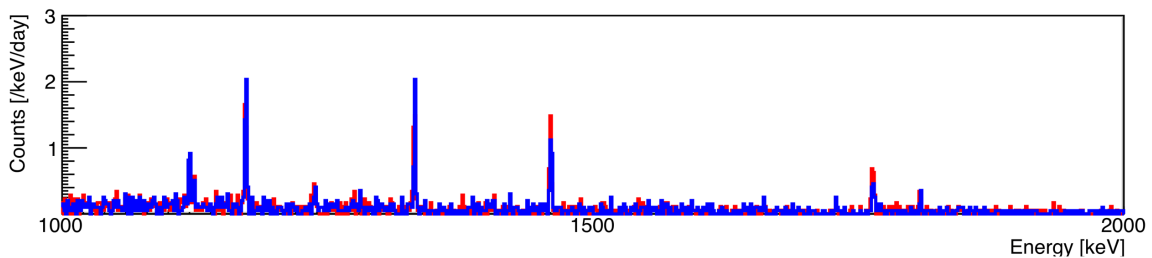
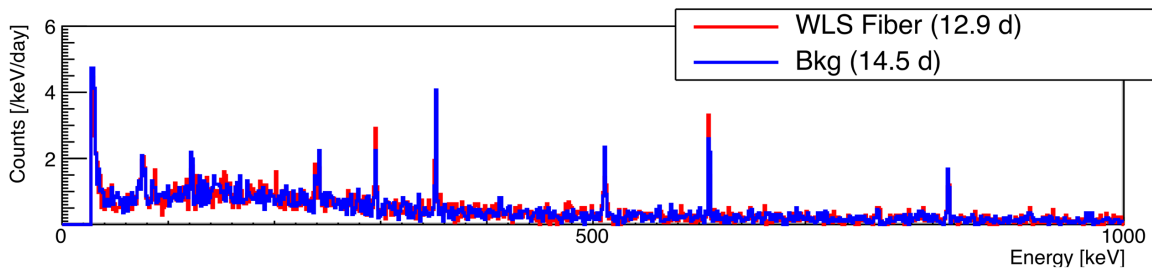
Efficiency



Results:

WLS Fibre – Belmont – 12.1 d live time

Mass		0.1264 kg								
Daughter	Energy	Branching (%)	eff (%)	Final Values		Combined Values		Upper Limits Only		
				mBq/kg	Err	mBq/kg	Err			
U-238	Th-234	92.50	5.58	9.27	<3.62			<3.6		
U-238	Pb-214	295.20	19.20	8.11	8.83	4.46				
U-238	Pb-214	351.90	37.10	7.43	5.42	3.33	6.9	3.8		
U-238	Bi-214	609.30	46.10	5.56	<7.12			<9.9		
U-238	Bi-214	1764.50	15.90	3.26	<10.65					
Th-232	Ac-228	338.30	11.30	7.56	<2.19					
Th-232	Ac-228	911.20	26.60	4.59	<3.50		-	<3.3		
Th-232	Ac-228	969.00	16.20	4.46	<5.92					
Th-232	Pb-212	238.60	43.60	8.93	<3.45					
Th-232	Tl-208	583.20	84.50	5.69	<1.84		-	<3.0		
Th-232	Tl-208	2614.50	99.00	2.61	<5.79					
K-40	K-40	1460.80	10.72	3.62	<29.00		-	<29		
Co60	Co60	1173.20	99.9	4.05	<2.59		-	<2.7		
Co60	Co60	1332.50	99.9	3.79	<2.81					





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Additional notes:

There appears to be peaks of unknown origin at 1377 keV and 201 keV. With more stats they should become clearer.