

Calculation of snow shielding

$$P(x) = P(0)e^{-\rho x/\Lambda} \quad \text{Lal (1991)}$$

P: Production rate (atoms/g/yr)

ρ : Snow density (g/cm³)

x: Snow depth (cm)

Λ : Attenuation length (g/cm²)

Marble Range

Snow cover duration, depth, and density estimated from snow cover data on Pavilion Mountain

<http://a100.gov.bc.ca/pub/mss/stationdata.do?station=4B03> (accessed 9 June 2014)

Month	Snow depth (cm)	ρ (g/cm ³)	Λ (g/cm ²)	Ratio of full production
jan	40	0.2	160	0.951229
feb	60	0.25	160	0.91051
mar	80	0.28	160	0.869358
apr	95	0.29	160	0.841821
may	85	0.28	160	0.861785
jun	0	0	160	1
jul	0	0	160	1
aug	0	0	160	1
sep	0	0	160	1
oct	0	0	160	1
nov	0	0	160	1
dec	20	0.15	160	0.981425

0.951344

Adjusted apparent exposure ages (yr)

Extern age	Extern unc	Intern unc	Sample code
14651	740	487	MAR-10-02
21581	1445	1195	MAR-10-04
34643	1546	806	MAR-10-06
15954	794	514	MAR-10-07
15267	1087	920	Weighted mean age of MAR-10-02 and MAR-10-07

Telkwa Range

Snow cover duration, depth, and density estimated from snow cover data on Hudson Bay Mountain

<http://a100.gov.bc.ca/pub/mss/stationdata.do?station=4B03> (accessed 9 June 2014)

Month	Snow depth (cm)	ρ (g/cm ³)	Λ (g/cm ²)	Ratio of full production
jan	150	0.26	160	0.783684
feb	180	0.29	160	0.721625
mar	220	0.32	160	0.644036
apr	250	0.35	160	0.578756
may	180	0.41	160	0.630495
jun	100	0.46	160	0.750137
jul	0	0	160	1
aug	0	0	160	1
sep	0	0	160	1
oct	0	0	160	1
nov	40	0.16	160	0.960789
dec	90	0.2	160	0.893597

0.83026

Adjusted apparent exposure ages (yr)

Extern age	Extern unc	Intern unc	Sample code
12291	893	765	MAR-10-08
12140	750	594	MAR-10-11
13829	1333	1231	MAR-10-12
12430	651	450	MAR-10-13
12417	653	453	Weighted mean age of Telkwa Range samples