



Figure S1. Don Manuel core samples selected for Re-Os molybdenite dating. (a) Sample DM4AG35. (b) Sample DM7AG31. (c) Sample DM7AG35. Samples are described in Table 3.



Figure S2: Don Manuel core samples selected for $^{40}\text{Ar}/^{39}\text{Ar}$ hydrothermal biotite dating. (A) Sample DM4AG13. (B) Sample DM6AG22. (C) Sample DM2AG47. (D) Sample DM7AG40. Samples are described in Table 3.

Table S1. ^{40}Ar - ^{39}Ar Geochronology for Don Manuel hydrothermal biotite.

Sample	Integrated age (Ma)	$\pm 1\sigma$	int. $^{40}\text{Ar}^*/^{39}\text{Ar}_K$	Plateau age (Ma)	$\pm 1\sigma$ w/o J	$\pm 1\sigma$ w/ J	MS WD	Prob.	steps	n/n-total	%gas	Ca/K	$\pm 1\sigma$ Ca/K	Isochron age (Ma)	$\pm 2\sigma$	$\pm 2\sigma$ (%)	$^{40}\text{Ar}/^{36}\text{Ar}(\text{i})$	$\pm 2\sigma$	MS WD	p	n
DM4AG13	3.57	0.11	7.654	3.569	0.019	0.07	0.8	0.54	6-12	7/14	90.5	0.01	0.01	3.55	0.05	1.5	314	18	0.4	0.85	7
DM6AG22	3.51	0.09	7.508	3.512	0.019	0.09	1.2	0.32	3-12	10/14	96.9	0.15	0.02	3.48	0.07	2.0	309.6	9.2	0.5	0.83	10
DM2AG47	3.40	0.07	7.316	3.408	0.010	0.08	0.5	0.84	3-11	8/13	92.5	0.04	0.02	3.41	0.06	1.6	297.8	2.0	0.5	0.83	8
DM7AG40	3.35	0.19	7.136	3.374	0.012	0.12	1.4	0.23	5-12	7/13	81.5	1.1	0.7	3.36	0.09	2.6	304.4	4.6	0.3	0.92	7