

**Table S1:** Data used for isocon analysis (see Figure 9) of structural units of the outcrops investigated in this study and derived mass gains. Data for structural units (hanging-wall; PSZ; footwall) are averages calculated from data presented in Table 5.

location	unit	MnO	P <sub>2</sub> O <sub>5</sub>	TiO <sub>2</sub>	Na <sub>2</sub> O	K <sub>2</sub> O	CaO	MgO	Fe <sub>2</sub> O <sub>3</sub> <sup>a</sup>	Al <sub>2</sub> O <sub>3</sub>	SiO <sub>2</sub>	LOI	mass gain [%]
DFDP-2B <sup>b</sup>	host rock	0.05	0.13	0.48	3.06	2.03	1.54	1.34	3.60	13.05	71.80	2.63	
Brook Street Terrane <sup>c</sup>	host rock	0.18	0.13	0.84	2.39	0.59	11.16	7.67	10.37	15.14	47.80	3.74	
Havelock Creek	PSZ	0.13	0.20	0.81	1.77	1.39	7.85	4.20	6.49	13.60	51.70	11.49	35.12
Gaunt Creek	PSZ	0.13	0.19	0.76	1.94	3.27	6.78	3.64	6.66	13.43	51.40	11.38	35.85
	footwall	0.11	0.21	0.79	2.10	2.94	5.22	3.67	6.05	13.92	55.35	9.28	26.87
DFDP-1A	hanging-wall	0.09	0.16	0.63	1.18	3.50	4.49	3.07	4.75	13.31	55.51	13.02	26.71
	PSZ	0.06	0.18	0.56	1.29	3.80	2.03	2.12	4.00	13.25	62.62	9.71	13.47
Waikukupa Thrust	hanging-wall	0.12	0.10	0.67	3.52	0.42	4.16	3.84	6.29	13.30	57.65	9.53	22.34
	PSZ	0.21	0.14	0.65	1.12	1.95	17.53	2.70	5.67	11.41	44.47	13.74	56.08
	footwall	0.11	0.15	0.81	3.03	1.82	2.47	2.74	6.12	14.75	64.98	2.74	9.28
Martyr River	hanging-wall	0.11	0.18	0.69	2.27	1.80	8.74	4.50	6.11	13.45	52.67	8.96	-4.44
	PSZ	0.10	0.14	0.56	2.09	1.55	3.50	10.59	5.99	11.07	56.61	7.34	-8.54

<sup>a</sup> Fe<sub>2</sub>O<sub>3</sub> is total Fe content.

<sup>b</sup> Alpine Schist data is average from DFDP-2B drill cutting samples ICDP5052EXGY601, ICDP5052EXOY601 and ICDP5052EXLY601 presented in Table 4 of Toy et al. (2017).

<sup>c</sup> Values presented are averages derived from Table 1 in Spandler et al. (2005) and exclude data from Bluff Complex and Takitimu Mountains.