|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Fault Core Domain | Qtz (%) | Kspr (%) | Plag (%) | Musc (%) | Phen (%) | Biot (%) | Dol (%) | Cal (%) | Chl (%) | Il-Sm (%) | Il + mica (%) | Kao (%) | Serp (%) | Tlc (%) | Pyr (%) | Ol (%) | Amp (%) | Pre (%) | Wol (%) | Ox (%) |
| HW 1 | 14 | 14.3 | 8.8 | 15.4 | 20.9 | 7.3 |  |  | 10.8 |  |  |  |  |  |  |  |  |  |  | 8.7 |
| HW DZ 4 | 8.5 | 2.7 | 50.3 | 12 | 11.9 | 3 |  |  | 1.2 |  |  | 2.9 |  |  |  |  |  |  |  | 7.4 |
| HW DZ 3 | 23.3 |  | 37 | 12.3 |  | 4.2 | 9 | 9.8 |  |  |  | 4.5 |  |  |  |  |  |  |  |  |
| HW DZ 2 | 14.6 | 27.7 |  | 8.7 | 17.4 |  | 27.6 | 1.5 | 1.3 |  |  | 1.2 |  |  |  |  |  |  |  |  |
| HW DZ 1 | 14.6 | 49.9 |  | 13.4 | 9.2 | 3.8 | 2.3 |  |  |  |  | 7 |  |  |  |  |  |  |  |  |
| Clast 1 FC 2 | 9.2 | 47.1 |  | 5.6 | 18.1 |  | 16.4 |  |  |  |  | 3.5 |  |  |  |  |  |  |  |  |
| Clast 2 FC 2 | 12.7 | 6.2 | 1.5 | 29.7 | 22.3 |  | 22 |  |  |  |  | 5.3 |  |  |  |  |  |  |  |  |
| FC 2 \* | 57.7 | TR | TR |  |  |  | 1.7 |  |  | 5.6 | 23.8 | 8.1 |  |  |  |  |  |  |  | 3.1 |
| FC 1 \* | 41.4 | TR |  |  |  |  | 11.2 |  | 23.6 | 6.1 | 15.6 |  |  |  |  |  |  |  |  | 2.1 |
| FC 1a \* | 44.6 | TR |  |  |  |  | 3.3 |  | 23.1 | 1.4 | 24.3 |  |  |  |  |  |  |  |  | 3.3 |
| FW DZ 1 | 16.7 |  |  |  |  |  | 12.5 | 11.8 |  |  |  |  | 38.1 | 5.8 | 9.8 | 4.5 |  |  |  | 1 |
| FW DZ 2  |  |  |  |  |  |  | 1.7 | 19.4 | 17.1 |  |  |  | 26.2 | 2.5 | 5 |  | 5.3 | 10.8 | 6.1 | 3.9 |

**Description:** Whole (bulk) rock X-ray diffraction (XRD) data for the Highland Boundary fault rock domains.

**Table S1.** Whole (bulk) rock XRD data for the Highland Boundary fault domains used in Fig. 8. All samples are from Log 4 [NO 388914 787493]. Values shown as percentages based on the peak area analysis (the samples that are \* are quantified by an intensity-based method). Qtz, quartz; Kspr, alkali feldspar; Plag, plagioclase feldspar; Musc, muscovite; Phen, phengite; Biot, biotite; Dol, dolomite; Cal, calcite; Chl, chlorite; Il-Sm, illite/smectite; Il + mica, illite + mica, Kao, kaolinite; Serp, serpentinite; Tlc, talc; Pyr, pyroxene; Ol, olivine; Amp, amphibole; Pre, prehnite; Wol, wollastonite; Ox, (Fe- and Ti-) oxides including hematite and anatase