

Data Repository**Major- and trace-element data from the Bourne subterrane, northeastern Oregon**

Locations of samples collected for geochemistry and geochronology are given in Table DR1. The metapluonic rocks of the Bourne subterrane straddle the tholeiitic to calc-alkaline boundary in Fig. DR1A, with only one sample plotting in the tholeiitic field. Samples with SiO₂ contents <56 wt. % are plotted in basaltic trace-element discrimination diagrams (Fig. DR1B–D).

The TiO₂-MnO-P₂O₅ diagram of Mullen (1983) is used to distinguish between mid-ocean ridge basalts, ocean-island tholeiites, ocean-island alkali basalts, island-arc tholeiites, and calc-alkali basalts (Fig. DR1B). Variations in TiO₂ and MnO may be attributed to different sequences of fractional crystallization; whereas variations in P₂O₅ content may reflect compositional differences in the magma source and/or different degree of partial melting. All samples from this study and one sample from Ferns and Brooks (1995) plot within the island-arc tholeiite field.

The Ti-V diagram of Shervais (1982) distinguishes basaltic arc rocks from within-plate and MORB (Fig. DR1C). Due to variations in the partition coefficient of V under varying oxygen fugacity conditions, basalts with Ti/V ratios below 20 are typical of fluid-rich volcanic arc basalts, whereas basalts with Ti/V between 20 and 50 are characteristic of continental flood basalts and MORB. Alkaline basalts from within-plate settings have Ti/V ratios greater than 50. Samples from this study plot within the volcanic arc field and along the boundary with MORB.

The Ti-Zr-Y trace element diagram of Pearce and Cann (1973) is also used to distinguish basaltic rocks that have within-plate characteristics from those of mid-ocean ridge and volcanic arc settings (Fig. DR1D). Samples from this study plot in the island arc field, the combined island arc, ocean-floor basalt and calc-alkaline basalt field, and one analysis plots near the boundary with the within-plate field. One anomalous data point plots outside these fields. Four

1194 data points from Calder (1986) plot along the boundary between the island arc field and
1195 combined island-arc, ocean-floor basalt, and calc-alkaline basalt field.

1196

1197 **List of Data Repository Figures**

1198 **Figure DR1.** Geochemical plots of major and trace element data for metaplutonic rocks of the
1199 Bourne subterrane. **A**, AFM diagram showing all data from this study and data from Ferns and
1200 Brooks (1995). FeO* = total FeO. Metaplutonic rocks are characterized as tholeiitic to calc-
1201 alkaline in composition. **B**, TiO₂-MnO-P₂O₅ trace element discrimination diagram (Mullen,
1202 1983) for selected metaplutonic rocks. CAB = calc-alkali basalt; IAT = island-arc tholeiite;
1203 MORB = mid-ocean ridge basalt; OIT = ocean-island tholeiite; OIA = ocean-island alkali basalt.
1204 **C**, Ti-V diagram from Shervais (1982) for selected metaplutonic rocks. Fields for volcanic arc,
1205 MORB and alkaline within plate (WPB) rocks are shown. **D**, Ti-Zr-Y trace element
1206 discrimination diagram (Pearce and Cann, 1972) for selected metaplutonic rocks. Gray field
1207 indicates data from Ferns and Brooks (1995). WPB = within-plate basalt; LKT = low-K tholeiite;
1208 CAB = calc-alkaline basalt; OFB = ocean-floor basalt.

1209

1210 **List of Data Repository Tables:**

1211 **Table DR1.** UTM sample locations for argillaceous and metaplutonic rocks of the Baker terrane.

TABLE DR1: UTM SAMPLE LOCATIONS FOR ARGILLACEOUS AND METAPLUTONIC ROCKS OF THE BAKER TERRANE

Bourne Subterrane (Elkhorn Ridge Argillite):

Sample	Zone	Northing	Easting	Lithology
ERA-1	11	400950	4957360	Argillite
EHP-04-4	11	416825	4958782	Siliceous Argillite
EHP1-05-2	11	413380	4966545	Cherty Argillite
EHP1-05-10	11	414617	4963403	Cherty Argillite

Bourne Subterrane (Metaplutonic rocks):

Sample	Zone	Northing	Easting	Lithology
EHP-04-2	11	417600	4957819	Qtz metadiorite
EHP-04-3	11	417586	4957734	Metatonalite
EHP-04-5	11	413157	4965857	Qtz metadiorite
EHP-2	11	-	-	Hbd qtz metadiorite
EHP-3	11	-	-	Hbd qtz metadiorite
EP4-8	11	417582	4957711	Hbd metadiorite
EP4-2	11	417597	4957902	Hbd metagabbro

Bourne Subterrane (Cougar Basin Metasedimentary Sequence):

Sample	Zone	Northing	Easting	Lithology
EHP-04-6	11	413108	4965281	Siliceous Argillite
EHP1-05-6	11	413979	4965287	Siliceous Argillite
EHP1-05-8	11	413498	4965682	Sandy Argillite
EP4-5	11	417591	4957576	Siliceous Argillite
EHP4-05-21	11	418065	4957204	Cherty Argillite
EHP4-05-22	11	417878	4957248	Siliceous Argillite

*All measurements acquired using datum NAD27

