Data Repository Item 1: Sample descriptions

The following are descriptions of field relationships and thin section observations for samples analyzed in this study. Mineral concentrations are visual estimates from thin sections, normalized to 100%. Coordinates are given in Universal Transverse Mercator (UTM) projection, North American Datum 1983 (NAD83), zone 8v north.

99MC018 – *509809E, 6897303N*
Calcareous psammitic schist – 2-3 cm-thick quartz-plagioclase-calcite-rich horizons (analyzed sample) intercalated with light green muscovite-chlorite schist with plagioclase porphyroblasts. Strongly foliated and tightly folded. Quartz – 35%; plagioclase – 25%; calcite – 25%; muscovite – 9%; chlorite – 5%; ~1% pyrite cubes.

99MC023 – *504020E, 6895175N*
Mafic gneiss – dark green, fine to medium-grained chlorite-epidote-plagioclase-hornblende-biotite gneiss that grades laterally to muscovite-biotite schist with thin quartzite bands. 99MC023: Plagioclase – 50%; hornblende – 16%; epidote – 12%; chlorite – 10%; biotite – 5%; magnetite – 3%; titanite – 4%. 99MC023-2: Plagioclase – 52%; epidote – 14%; chlorite – 13%; calcite – 8%; magnetite – 7%; biotite – 3%; hornblende – 2%. Hornblende and biotite are extensively chloritized.

99MC024 – *504426E, 6895471N*
Amphibolite – dark green, fine to medium-grained hornblende-chlorite-epidote-biotite-plagioclase schist. Hornblende – 28%; chlorite – 25%; plagioclase – 32%; epidote – 6%; biotite – 5%; zoisite – 2%; magnetite – 2%.

99MC038 – *518255E, 6896192N*
Greenstone – 3 m-thick, fine to medium-grained, strongly foliated hornblende-plagioclase-chlorite-epidote schist within light grey, medium to coarse-grained marble (sill or dike?). Plagioclase – 30%; hornblende – 25%; epidote – 15%; chlorite – 13%; titanite – 7%.

99MC192A – *511331E, 6897217N*
Greenstone – medium-green, fine-grained chlorite-epidote-hornblende-plagioclase schist intercalated with ≤20 cm of white plagioclase-hornblende-muscovite schist. Felsic schist becomes more prominent laterally where it commonly has randomly oriented amphibole rosettes on foliation surfaces and is locally intercalated with yellow-weathering, white marble layers 40-50 cm-thick. Analyzed sample contains 40% plagioclase, 25% chlorite, 15% epidote, 15% hornblende, 4% calcite, and 1% magnetite.

00MC102 – *506055E, 6899415N*
Amphibolite – fine to medium-grained hornblende-plagioclase-chlorite schist. Plagioclase – 47%; hornblende – 25%; chlorite – 10%; epidote – 10%; titanite – 5%; muscovite – 3%. Penetrative foliation defined by hornblende.

00MC107B – *503737E, 6897698N*
Amphibolite – fine-grained actinolite schist within a sequence of quartzite and marble. The actinolite schist consists of 50% actinolite, 20% plagioclase, 10% epidote, 8% chlorite, 7% calcite, 5% hornblende.

00MC131 – *510729E, 6890767N*
Amphibolite – fine to medium-grained, medium green, massive hornblende-plagioclase-chlorite-biotite schist. Plagioclase – 38%; hornblende – 30%; chlorite – 15%; epidote – 10%; biotite – 5%; pyrite – 2%.

00MC132 – *510549E, 6890520N*
Garnet amphibolite – fine-grained, strongly foliated, dark green hornblende-plagioclase-chlorite-garnet amphibolite. A 15-20 cm-thick horizon of marble occurs nearby within the amphibolite. The amphibolite is structurally overlain by a sequence of medium grey to white quartzite and quartz-muscovite-garnet schist (see Fig. 5a). The garnet amphibolite contains 40% hornblende, 35% plagioclase, 10% chlorite, 5% garnet, 5% epidote, 4% calcite, and 1% opaque mineral. Garnet porphyroblasts are syn- to post-tectonic and are up to 5 mm.

00MC135 – *509306E, 6891318N*
Feldspathic schist – coarse-grained plagioclase porphyroclasts in a fine-grained matrix of quartz-muscovite-biotite schist. Compositional layering defined by cm-thick calcareous schist. A 3-4 m-thick marble horizon occurs nearby in the schist. Quartz – 30%; plagioclase – 20%; muscovite – 17%; biotite – 16%; calcite – 5%; opaque mineral (oxide?) – 12%.

00MC137 – *508277E, 6891315N*
Garnet schist – from a mixed succession of medium to dark grey quartz-muscovite-garnet schist, medium grey to light green quartzite (2-3 m), and minor dark green chlorite-plagioclase schist (<1 m; greenstone?). Schist locally contains post-tectonic actinolite rosettes on dominant foliation (but not analyzed sample). Quartz – 40%; plagioclase – 20%; muscovite – 20%; chlorite – 8%; garnet – 7%; epidote – 2%; magnetite – 2%.

00MC141 – *511105E, 6889468N*
Garnet amphibolite – fine to medium-grained, dark green amphibolite with syn- to post-tectonic garnet porphyroblasts up to 5 mm (Fig. 5d). A 2-3 cm layer of brown-weathering marble occurs nearby in the amphibolite. Hornblende – 45%; plagioclase – 30%; chlorite – 8%; garnet – 7%; epidote – 5%; opaque mineral – 3%; muscovite – 2%.

00MC146 – *511840E, 6889196N*
Garnet schist – light to medium grey, quartz-plagioclase-muscovite-garnet schist. Quartz – 45%; plagioclase – 20%; muscovite – 13%; garnet – 12%; chlorite – 7%; calcite – 2%; opaque minerals – <1%. Light grey, 2-3 cm-thick quartz-plagioclase-rich layers intercalated with up to 10 cm-thick more pelitic, garnet-rich horizons. Schist is locally calcareous and intercalated with thin (≤5 cm) marble horizons. Pre-tectonic garnets contain inclusion trails at high-angle to dominant foliation.

00MC164 – *515040E, 6886745N*
Quartz-biotite schist – dark grey, rusty weathering, penetratively foliated quartzofeldspathic schist. Quartz – 40%; K-feldspar – 20%; biotite – 20%; plagioclase – 15%; muscovite – 5%; opaque minerals – 1%.

00MC169 – *516001E, 6884702N*
Calc-silicate rock – white, tremolite-bearing calcareous quartzite that occurs within quartz-muscovite-garnet schist (similar to Fig. 5a). Quartz – 80%; tremolite – 20%.

00MC170 – *515845E, 6883884N*
Calcareous quartzofeldspathic schist. Quartz – 40%; plagioclase – 22%; calcite – 15%; muscovite – 5%; chlorite – 5%; hornblende – 5%; garnet – 4%; epidote – 3%; magnetite – 1%.

00MC218 – *519750E, 6882975N*
Dark grey meta-wacke. Quartz – 60%; plagioclase – 20%; biotite – 5%; epidote – 5%; chlorite – 5%.

02CR014 – *492660E, 6913367N*
Quartz-mica schist – from a mixed succession of quartzofeldspathic schist, amphibolite, chloritic schist, metatonalite, and quartzite. Lithologies are mixed on the scale of centimeters to ≤2 m. Quartz – 55%; plagioclase – 22%; biotite – 10%; muscovite – 8%; chlorite – 3%; epidote – 2%.

02CR025 – *489941E, 6908854N*
Amphibolite – dark green, strongly foliated plagioclase-phyric amphibolite. Hornblende – 48%; plagioclase – 35%; epidote – 5%; quartz – 5%; muscovite (saussurite) – 5%; titanite – 2%.

02CR098 – *462984E, 6935284N*
Garnet schist – 3 cm-thick quartz-plagioclase-rich horizon (02CR098-1) intercalated with dark grey quartz-plagioclase-biotite-muscovite-garnet schist (02CR098-2). Garnet porphyroblasts are 2-4 mm in size and predate dominant foliation. 02CR098-1: quartz – 40%; plagioclase – 25%; biotite – 15%; muscovite – 10%; garnet – 10%; opaque minerals – <1%. 02CR098-2: quartz – 30%; plagioclase – 30%; muscovite – 19%; biotite – 10%; garnet – 10%; opaque minerals – 1%.

02DM044 – *464199E, 6934293N*
Garnet-biotite schist – pelitic schist horizons intercalated with pinkish grey quartzite (*cf.* 02GGA734 for quartzite; Fig. 5b). Plagioclase – 35%; quartz – 30%; muscovite – 20%; biotite – 10%; garnet – 10%; chlorite – 4%; opaque mineral – 1%.

02DM049 – *480638E, 6940618N*
Marble – light grey, tan and white siliceous marble (Fig. 5c). Quartz – 49%; calcite – 45%; plagioclase – 5%; muscovite – 1%.

02DM066 – *440299E, 6955676N*
Mafic schist – fine-grained, mottled, dark green and grey hornblende-plagioclase schist. Hornblende-rich pods suggest a relic fragmental texture. Hornblende – 55%; plagioclase – 20%; calcite – 8%; chlorite – 8%; quartz – 3%; opaque mineral – 2%.

02DM144 – *442370E, 6954947N*
Gritty quartz psammite – medium-grained, moderately foliated, quartz-plagioclase-biotite-garnet-muscovite schist. Quartz – 60%; plagioclase – 20%; biotite – 10%; chlorite – 5%; epidote – 5%.

02GGA705-2 – *482090E, 6935850N*
Calcareous psammitic schist – from heterogeneous succession of quartz-feldspar-muscovite schist intercalated on a scale of 1-3 m with mafic schist, calc-silicate rock and metatonalite. Quartz – 40%; plagioclase – 20%; K-feldspar – 20%; muscovite – 10%; calcite – 5%; chlorite – 3%; magnetite – 2%.

02GGA734 – *464187E, 6934301N*
Quartzite – light grey to pinkish weathering, thin-bedded quartzite (~10 cm; 85% quartz) intercalated with garnet schist horizons ≤5 cm-thick (*cf*. sample 02DM044 for pelitic horizons; Fig. 5b). Disseminated muscovite and biotite constitute <15% of matrix in quartzite.

02JN063 – *437782E, 6957590N*
Quartzite – strongly foliated and lineated coarse-grained quartzite (83% quartz). Muscovite (~7%) defines the dominant foliation; biotite (5%) and garnet (5%) are disseminated throughout the quartz matrix.

02MC012 – *486427E, 6921158N*
Amphibolite – fine to medium-grained, strongly foliated amphibolite. Hornblende – 45%; plagioclase – 38%; epidote – 7%; magnetite – 5%; biotite – 3%; calcite – 2%.

02MC019 – *483690E, 6918056N*
Quartzite (10-20 cm-thick; 02MC019-1) intercalated with garnet-muscovite schist (02MC019-2). Quartzite and schist represent approximately equal proportions in outcrop. The quartzite (02MC019-1) is medium- to coarse-grained, penetratively foliated and composed of quartz (~80%), plagioclase (~10%), muscovite (~5%), and trace amounts (1-2%) of garnet, epidote, calcite and opaque minerals. The pelitic schist (02MC019-2) is fine-grained, granoblastic and penetratively foliated. It contains ~50% quartz, 30% plagioclase, 15% biotite, 3% muscovite, and ~2% opaque minerals.

02MC043 – *479351E, 6932744N*
Quartz-mica schist – light green, fine to medium-grained quartz-plagioclase-muscovite-biotite-chlorite schist intercalated with ~10 cm-thick, strongly foliated quartzite horizon. Quartz - 30%; plagioclase – 19%; muscovite – 16%; biotite – 9%; calcite – 8%; chlorite – 10%; opaque minerals – 6%; epidote – 2%.

04MC155 – *514566E, 6896455N*
Quartzite – light greenish grey to white, medium-grained, locally gritty, quartzite layers (10-20 cm-thick) intercalated with medium to dark grey quartz-muscovite-chlorite schist. Locally calcareous with centimetre-thick beige weathering dolomitic marble layers. Rock is strongly foliated and quartzite layers are isoclinally folded.