BC Geological Survey
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Geology of the Turnagain Ultramafic Intrusion, Northern British Columbia

parts of NTS 104I/07 and 10

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** BC Geological Survey* *** Hard Creek Nickel Corporation*

0 0.5 1
kilometres
Scale 1:10 000

LEGEND

QUESNEL TERRANE

EARLY JURASSIC

- eJE — Eaglehead Pluton: biotite-hornblende quartz monzonite, granodiorite and quartz diorite

YUKON-TANANA TERRANE

EARLY JURASSIC

- eJdi — dark grey-green to pale grey, medium- to coarse-grained, hornblende diorite, quartz diorite, granodiorite and tonalite; minor feldspathic hornblendite to melanocratic diorite

TURNAGAIN ALASKAN-TYPE ULTRAMAFIC INTRUSION

- hbt — black to dark greenish grey, coarse-grained hornblendite; locally biotite-bearing and pegmatitic
- mhcpxt — dark greenish grey, medium- to coarse-grained, magnetite-hornblende clinopyroxenite; locally pegmatitic and biotite-rich
- hcpxt — dark greenish grey, medium- to coarse-grained, hornblende clinopyroxenite; locally pegmatitic
- cpxt — dark grey-green, medium-grained to pegmatitic clinopyroxenite
- ocpxt — brownish grey to grey-green, medium-grained to pegmatitic olivine clinopyroxenite
- we — dark greenish grey, variably serpentinized, medium- to coarse-grained wehrlite; locally contains minor dunite; commonly cut by clinopyroxenite dykes
- du — dark grey to greenish grey, variably serpentinized, medium-grained wehrlite; locally contains minor chromitite, wehrlite and olivine clinopyroxenite; commonly cut by wehrlite and clinopyroxenite dykes

CARBONIFEROUS (age range uncertain)
Lower Mississippian to Pennsylvanian(?)

- Ms — dark grey to grey-green, graphitic phyllite and slate with minor thin interbedded carbonate and volcanic wacke; unfossiliferous; pyritic
- Mv — dark grey-green, tuff, tuffaceous phyllite, wacke and minor carbonate and rare phyllite; locally intruded by basaltic sills
- Msv — undifferentiated, interbedded metasedimentary and metavolcaniclastic rocks similar to units Ms and Mv

ANCESTRAL NORTH AMERICA-CASSIAR TERRANE

ORDOVICIAN TO DEVONO-MISSISSIPPIAN OR YOUNGER

- OMRu? — Road River Formation siltstone and black, pyritic shale; and undivided, calcareous black shale, slate, phyllite and minor limestone, siltstone and pebble conglomerate (inset map only)

CAMBRIAN TO LOWER ORDOVICIAN

- COK — Kechika Formation: argillaceous limestone and calcareous shale

LOWER CAMBRIAN
ATAN GROUP

- CAm — Boya Formation: micaceous siltstone, quartzite and mica schist

MAP SYMBOLS

- Geological contact, defined or approximate
- Geological contact, inferred
- Geological contact, inferred from geophysical data
- Steeply dipping fault, defined or approximate
- Steeply dipping fault, inferred
- Reverse fault, defined or approximate (teeth on upper plate)
- Reverse fault, inferred from geophysical data (teeth on upper plate)
- Chromitite locality
- Historical sulphide showing
- Outcrop examined
- Outcrop too small to show at map scale
- Drillhole collar

Structure

- Bedding, tops unknown, inclined
- Cumulate layering, tops unknown, inclined, vertical
- Chromitite layering, tops unknown, inclined, vertical
- Minor fold of chromitite layers showing axial-plane dip
- Dyke (typically wehrlite or clinopyroxenite), inclined, vertical
- Early cleavage or schistosity (S1), inclined, vertical
- Crenulation cleavage (S2), inclined
- Foliation induced by shearing, inclined, vertical
- Crenulation lineation showing plunge
- Minor fold of S1 foliation (F2) showing axial-plane dip
- Minor fold of S1 foliation (F2) showing plunge

Topography

- Lake
- Flooded land (swamp)
- Stream or river
- Contour (100m)
- Spot height (m)
- Road (dirt)
- Gravel bar

Approximate mean magnetic declination February 2012 for centre of map area: 21 degrees 9 minutes east, decreasing annually 19.9 minutes per year

Magnetic North — Grid North — Magnetic Declination

Base Map Information

Base map produced from digital TRIM (Terrain Resource Inventory Management) 1:20 000-scale topographic database. British Columbia Ministry of Natural Resource Operations.

North American Datum 1983 (NAD83). Universal Transverse Mercator Projection (Zone 9). Elevation in metres above mean sea level. Contour interval 100m.

Recommended Citation

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Data Sources

Geological mapping of the Turnagain property was done by J. E. Scheel, C. Baldys, B. K. Northcote, J. W. Kyba, D. Heon, G. P. Ross and A. C. Hitchins (Hard Creek Nickel Corporation). Other sources of data are:

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Scheel, J. E. (2007): Age and origin of the Turnagain Alaskan-type intrusion, and associated Ni-sulphide mineralization, north-central British Columbia; unpublished MSc thesis, The University of British Columbia, Vancouver, British Columbia, 210 pages.

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