GEOSCIENCE MAP 2005-2

GEOLOGY
of the
GRAND FORKS MAP SHEET

NTS 82E/01

SCALE 1:50 000

0 1 2 3 4 5

KILOMETRES

Compiled by Trygve Höy

Cartography by Wayne Jackaman

LEGEND

CENOZOIC

QUATERNARY

- Qa — ALLUVIUM; SAND, GRAVEL, SILT, TILL

EOCENE

- mEp — DACITE PORPHYRY
- Eps — VOLCANICLASTIC AND ARKOSIC SEDIMENTS (KETTLE RIVER FORMATION), ANDESITE FLOWS, TRACHYTE AND PHONOLITE (MARRON FORMATION)

CORYELL PLUTONIC ROCKS

- mEc — MEDIUM TO COARSE GRAINED LIGHT GREY TO WHITE SYENITE; HORNBLENDE-BIOTITE SYENITE; QUARTZ MONZONITE, MONZODIORITE

MESOZOIC

JURASSIC-CRETACEOUS

- JKg — MASSIVE, MEDIUM TO COARSE GRAINED, EQUIGRANULAR TO PORPHYRITIC BIOTITE GRANODIORITE AND GRANITE (MAY INCLUDE mJg)

MIDDLE JURASSIC

NELSON PLUTONIC ROCKS

- mJg — UNDIFFERENTIATED HORNBLENDE GRANITE, GRANODIORITE; MEDIUM TO COARSE GRAINED, TYPICALLY EQUIGRANULAR, MASSIVE TO LOCALLY FOLIATED; MAY INCLUDE JKg
- mJd — HORNBLENDE GRANODIORITE; GABBRO
- mJp — FELDSPAR PORPHYRY

QUESNELLIA

EARLY JURASSIC

- Jv — MASSIVE GREENSTONE, IN PART INTRUSIVE; MINOR CONGLOMERATE (AGE UNCERTAIN)

ROSSLAND GROUP - ELISE FORMATION

- eJe — MAFIC VOLCANICLASTIC ROCKS; VOLCANIC SANDSTONE; POSSIBLE ASH TUFF
- eJes — ARGILLITE, SILTSTONE

LATE TRIASSIC

- lTrd — JOSH CREEK DIORITE; CALCIC AMPHIBOLE MICRODIORITE, BIOTITE-PLAGIOCLASE SCHIST, GARNET-ACTINOLITE SCHIST

MIDDLE TRIASSIC

NICOLA GROUP - BROOKLYN FORMATION

- Trbr4 — META-VOLCANICS; FRAGMENTAL GREENSTONE, MICRODIORITE
- Trbr3 — LIMESTONE; CALCAREOUS SANDSTONE AND CONGLOMERATE, CHERT, MINOR SKARN
- Trbr2 — GREEN AND MAROON TUFFACEOUS SANDSTONE, SILTSTONE, HORNFELS, ARGILLITE
- Trbr1 — "SHARPSTONE CONGLOMERATE", LIMESTONE COBBLE CONGLOMERATE, CHERT BRECCIA, MINOR TUFF, TUFFACEOUS SANDSTONE

PALEOZOIC

MOUNT ROBERTS FORMATION (MOLLIE CREEK ASSEMBLAGE)

- CPms — SILTSTONE, SLATE, CORDIERITE-BIOTITE SCHIST, CALC-SILICATE SCHIST
- CPm — MARBLE, ARGILLACEOUS LIMESTONE, CALC-SILICATE SCHIST
- CPv — MAFIC VOLCANIC ROCKS (BASALT, ANDESITE?), VOLCANICLASTICS TUFF
- um — ULTRAMAFIC, SERPENTINITE

KNOB HILL GROUP

- CPk3 — AMPHIBOLITE, GREENSTONE
- CPk3 — MASSIVE, FINE-GRAINED GREENSTONE, LAVA, BRECCIA, MINOR LIMESTONE
- CPk2 — SILTSTONE, GREY TO LIGHT GREEN, MINOR SANDSTONE, PHYLLITE, GREENSTONE AND CALCAREOUS UNITS
- CPk1 — CHERT, META-SANDSTONE, ARGILLITE, MINOR LIMESTONE

GRAND FORKS COMPLEX (MODIFIED FROM PRETO, 1969)

PROTEROZOIC - PALEOZOIC ?

- Prim — CRUSHED AND MYLONITIZED QUARTZ MONZONITE, GRANODIORITE

MESOPROTEROZOIC - NEOPROTEROZOIC (?)

- Progn3 — ORTHOGNEISS: BIOTITE-HORNBLENDE GRANODIORITE GNEISS
- Progn2 — ORTHOGNEISS: SYENITIC TO GRANITIC
- Progn1 — ORTHOGNEISS: GRANODIORITE GNEISS

MESOPROTEROZOIC (?)

- Pr5 — HORNBLENDE SCHIST, AMPHIBOLITE; MINOR BIOTITE AND STAUROLITE SCHIST
- Pr4 — AMPHIBOLITE, AMPHIBOLITE SCHIST; SOME MARBLE, CALC-SILICATE GNEISS
- Pr4m — MARBLE, CALCAREOUS SCHIST, CALC-SILICATE GNEISS
- Pr4s — BIOTITE SCHIST, CALCAREOUS SCHIST
- Pr3 — GARNET-BIOTITE PARAGNEISS, SCHIST; SILLIMANITE SCHIST PEGMATITE, MARBLE, CALC-SILICATE GNEISS, AMPHIBOLITE, QUARTZITE
- Pr3m — MARBLE, CALC-SILICATE GNEISS
- Pr2 — QUARTZITE, THICK LAYERED; MINOR SILLIMANITE-BIOTITE SCHIST, PARAGNEISS
- Pr2m — MARBLE, CALC-SILICATE GNEISS; MINOR PEGMATITE
- Pr2a — AMPHIBOLITE GNEISS

PALEOPROTEROZOIC (?)

- Pr1 — GARNET-BIOTITE PARAGNEISS, SCHIST; SILLIMANITE SCHIST PEGMATITE, MARBLE, CALC-SILICATE GNEISS, AMPHIBOLITE, QUARTZITE
- Pr1m — MARBLE, CALC-SILICATE GNEISS; INCLUDES PEGMATITE
- Pr1a — AMPHIBOLITE, HORNBLENDE GNEISS

SYMBOLS

- CONTACT: DEFINED, APPROXIMATE, ASSUMED
- CONTACT OF ALLUVIUM
- LAYERING: INCLINED, VERTICAL, OVERTURNED
- LAYERING: INCLINED (TOPS UNKNOWN)
- DOMINANT FOLIATION: INCLINED, VERTICAL
- FAULT: DEFINED, APPROXIMATE, ASSUMED
- THRUST FAULT
- NORMAL FAULT
- ANTIFORM, OVERTURNED
- ANTIFORM
- SYNFORM, OVERTURNED
- SYNFORM
- MINERAL OCCURRENCE (MINFILE NUMBER) — 082ESE001
- SKARN
- U-Pb AGE DATE (ACTON *et al.*, 2002)
- TRENCH
- SHAFT, PIT
- ADIT, MINE DUMP
- MARBLE QUARRY

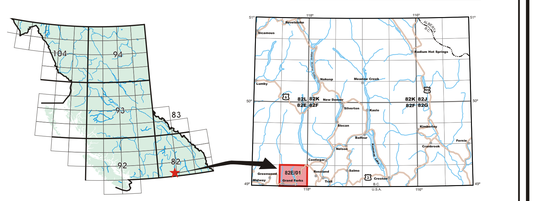
BASE MAP INFORMATION

NORTH AMERICAN DATUM 1983
UTM ZONE 11
TRANSVERSE MERCATOR PROJECTION

TN 18° 06' E
MAGNETIC NORTH

APPROXIMATE MEAN DECLINATION 2002
FOR CENTRE OF MAP 82E.019,
CHANGING 8.6° WEST ANNUALLY.

TOPOGRAPHIC BASE MAP MODIFIED FROM TRIM 1:20 000 AND WATERSHED ATLAS 1:50 000 DIGITAL DATA. CONTOUR INTERVALS ARE 100 METRES.



Sources of Data

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Höy, T. and Jackaman, W. (2005): Geology and mineral potential of the Grand Forks map sheet (082E/01); *B.C. MEMPR*, Paper 2005-1.

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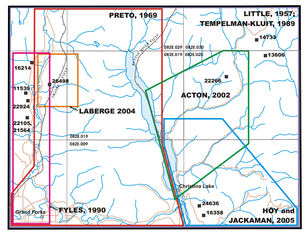

Mineral Occurrences

Minfile No.	Name	Status	Commodities	Deposit type
082ESE036	GRAND FORKS DOLOMITE	Past Producer	Dolomite	Limestone
082ESE037	BAILEY SILICA	Past Producer	Silica	Pegmatite
082ESE039	NORTHWIND	Past Producer	Au, Ag, Cu	Au-quartz veins
082ESE040	THREE JACKS	Showing	Ag, Cu	Skarn
082ESE057	HUMMINGBIRD (L.1369)	Past Producer	Au, Ag, Zn	Polymetallic veins
082ESE058	STRAWBERRY (L.1765)	Showing	Cu	Cu-Ag quartz veins
082ESE061	IRON CREEK	Showing	Pb, Zn, Ag	VMS
082ESE065	NIAGRA (L.1356)	Showing	Au, Ag, Cu	Vein (?)
082ESE072	LUCKY JOHN	Showing	Cu	Cu-Ag quartz veins
082ESE073	VOLCANO (L.1476)	Showing	Cu	Cu skarn
082ESE074	LITTLE BERTHA (L.959)	Past Producer	Cu, Au, Ag	Polymetallic veins
082ESE075	PATHFINDER (L.782)	Past Producer	Cu, Au, Ag	Polymetallic manto
082ESE076	MONO (L.2205)	Showing	Au, Ag	Vein (?)
082ESE077	SAILOR BOY (L.1093)	Showing	Cu, Zn	Cu skarn
082ESE078	BUNKER HILL (L.1609)	Showing	Cu	Cu skarn
082ESE079	GOLDEN EAGLE (L.1334)	Past Producer	Cu, Au, Ag	Au-quartz veins
082ESE080	JUDITTA	Showing	Pb, Au, Ag	Polymetallic veins
082ESE081	MOTHER LODE (L.1508)	Prospect	Au, Pb, Zn	Pb-Zn skarn
082ESE082	MOLLY GIBSON (L.595 S)	Past Producer	Au, Ag, Fe	Au skarn
082ESE083	INLAND EMPIRE (L.3880)	Past Producer	Au, Ag, Cu	Polymetallic veins
082ESE084	BERLIN (L.11157)	Past Producer	Pb, Cu, Zn	Polymetallic veins
082ESE085	CASCADE (L.5000)	Past Producer	Ag, Pb, Zn	Polymetallic veins
082ESE086	ALBION NO. 2 (L.12489)	Past Producer	Au, Ag, Zn	Polymetallic veins
082ESE087	ENTERPRISE (L.14563)	Past Producer	Au, Ag, Pb	Polymetallic veins
082ESE088	CALEDONIA (L.1756)	Past Producer	Au, Ag, Cr	Podiform chromite
082ESE089	PRIZE NO. 2 (L.1205)	Showing	Cu	Cu skarn
082ESE090	MESSENGER (L.121S)	Showing	Cu	Cu skarn
082ESE091	CASTLE MOUNTAIN NICKEL	Past Producer	Ni, Cr, Fe	Podiform chromite
082ESE092	KING (L.1775)	Showing	Au, Ag, Pb	Vein (?)
082ESE093	ALMA (L.1039)	Showing	Pb	Vein
082ESE094	CANNON BALL (L.1036)	Showing	Cu	Cu skarn
082ESE095	ELMORE (L.972)	Showing	Cu	Cu skarn
082ESE096	EUREKA (L.1145)	Showing	Cu	Cu skarn
082ESE097	FIFE	Past Producer	Cu, Au	Cu skarn
082ESE098	MANITOU (L.1753)	Prospect	Pb, Zn	Polymetallic veins
082ESE099	HALIFAX (L.3042)	Past Producer	Ag, Pb, Zn	Pb-Zn skarn
082ESE100	ARLINGTON (L.2596)	Prospect	Au, Ag, Pb	Au skarn
082ESE101	JOHN BULL (L.2051)	Showing	Au	Au-quartz veins
082ESE102	BURNT BASIN (L.1136)	Past Producer	Au, Pb, Zn	Pb-Zn skarn
082ESE103	KITTIE (L.1748)	Prospect	Ag, Pb, Zn	Pb-Zn skarn
082ESE104	INTERNATIONAL (L.2873)	Past Producer	Pb, Zn, Cu	Pb-Zn skarn
082ESE110	MAPLE LEAF	Showing	Au, Ag, Pt	Au-quartz veins
082ESE129	GARNET	Showing	Cu, Mo	Mo skarn
082ESE137	PBE 71 AND 73	Showing	Mo	Mo skarn
082ESE138	PBE 68	Showing	Mo, Cu, Zn	Mo skarn
082ESE139	PBE 66	Showing	Mo	Mo skarn
082ESE140	PBE 64	Showing	Mo, Fe	Mo skarn
082ESE141	PBE 31 AND 32	Showing	Cu	Cu skarn
082ESE142	SD 7	Showing	U	REE pegmatite
082ESE143	SD 18 AND 20	Showing	U	REE pegmatite
082ESE144	SD 37	Showing	U	REE pegmatite
082ESE145	SD 41	Showing	U	REE pegmatite
082ESE146	IKE 22	Showing	Cu	Cu skarn
082ESE156	IKE 14	Showing	Cu	Cu skarn
082ESE158	SEATTLE (L.652)	Past Producer	Cu, Au, Ag	Cu skarn
082ESE169	EVA BELL (L.2031)	Past Producer	Ag, Pb, Zn	Pb-Zn skarn
082ESE170	BONANZA FR. (L.1617)	Past Producer	Pb, Zn, Ag	Pb-Zn skarn (?)
082ESE179	HEK	Showing	Au, Fe	Polymetallic veins
082ESE180	NICKEL	Showing	Cu	Cu Skarn (?)
082ESE195	SD 8	Showing	U	Rare element pegmatite
082ESE204	GRAND FORKS CLAY	Showing	Clay	Fireclay
082ESE205	KIWI	Showing	U	Rare element pegmatite
082ESE207	MAP	Showing	Ochre	Industrial mineral
082ESE209	W.S.	Showing	Pb, Zn, Au	Polymetallic veins
082ESE213	CORYELL	Past Producer	granite	Dimension stone
082ESE218	PBE 14	Showing	U	Classical U veins
082ESE219	PBE 18	Showing	U	Classical U veins
082ESE220	HO 16	Showing	U	REE pegmatite
082ESE230	HARDY CREEK LIMESTONE	Past Producer	Limestone	Limestone
082ESE236	GRAND FORKS QUARTZITE	Past Producer	silica	Silica sandstone
082ESE237	LIME CREEK	Past Producer	Limestone	Limestone
082ESE238	FIFE LIMESTONE	Past Producer	Limestone	Limestone
082ESE263	EAST ST. THOMAS	Showing	Au, Ag, Cu	Au skarn
082ESE264	GRAND FORKS SLAG	Producer	silica slag	Tailings

Processing slag to produce silica sandblasting material and roof granules, Pacific Abrasives & Supply Inc. mill, just north of Grand Forks.

Recommended Citation:

Höy, T. and Jackaman, W. (2005): Geology of the Grand Forks map sheet (NTS 82E/01); *B.C. Ministry of Energy and Mines*, Geoscience Map 2005-2.

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ROCKS TO RICHES