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GEOLOGICAL SURVEY OF CANADA / COMMISSION GÉOLOGIQUE DU CANADA

Canada

LEGEND

STRATIFIED ROCKS

ice limits based on topographic maps published in 1974

QUATERNARY
RECENT

Qm — unconsolidated moraine deposits, colluvium and alluvium

PALEOZOIC
DEVONIAN AND MISSISSIPPIAN
UPPER DEVONIAN AND LOWER MISSISSIPPIAN

DMsh1 — *Metamorphosed shale, black; siliceous shale, black, bluish-white weathering; chert, black to dark grey, bluish-white weathering; with the black shale are minor units of argillite, thin to medium beds of lithic sandstone and paraconglomerate, and laminae of siltstone; with the siliceous shale and chert are minor thick beds of chert pebble conglomerate, and units of argillite; estimated thickness 100 to 400 + m; unfossiliferous. Structurally thickened to in excess of three times its original thickness (Cecile, 1992, 1984)*

SILURIAN
LOWER TO UPPER SILURIAN

Sa — *Unmetamorphosed and metamorphosed argillite, rusty dark green, buff weathering; minor black shale and chert; locally includes a very distinctive bright orange weathering thick dolostone; graptolites are often found in associated shale beds. Structurally thickened to in excess of three times its original thickness (Cecile, 1992, 1984)*

ORDOVICIAN
LOWER AND MIDDLE ORDOVICIAN

lmOc — *Unmetamorphosed and metamorphosed chert, white, green, dark grey, and black, resistant; thin to medium bedded and argillaceous in the lower part; thick bedded in the upper part with some beds extensively bioturbated; minor shale and argillite; buff to brown limestone nodules and/or beds in the lower part of the succession; thickness 80-130 m. Structurally thickened to in excess of three times its original thickness (Cecile, 1992, 1984)*

CAMBRIAN
LOWER TO UPPER?

Ca/Cv — *Metamorphosed argillite, buff, green, pale green, thin bedded; interstratified with the argillite are distinct, very thick successions of black shale, siliceous argillite and chert, green and brown calcareous volcaniclastic sandstone, lapilli tuff, volcanic breccia, basic flows, sills and dykes; minor quartzite and buff platy limestone; contains mappable units of volcanic strata (Cv); thickness estimated at 400 m; tectonically thickened; has the trace fossil Planolites, and 1/4 cm wide criss-crossing, bedding plane parallel, grazing traces. Structurally thickened to in excess of three times its original thickness, but locally has a thickness close to its stratigraphic thickness (Cecile, 1992, 1984)*

CAMBRIAN TO ORDOVICIAN
LOWER CAMBRIAN TO UPPER ORDOVICIAN

COv — *Metamorphosed basic volcanic lappilli tuff, breccias, flows, sills, dykes, all are brown to green and massive; volcaniclastics, brown to green; thickness estimated > 200 m; generally unfossiliferous; appears to be laterally equivalent to Ca. Structurally thickened to in excess of three times its original thickness (Cecile, 1992, Cecile, 1984)*

INTRUSIVE ROCKS

MID-CRETACEOUS
Emerald Lake Pluton

mKbg — *Biotite granite; light tan to pale pink, medium grained, alkali feldspar megacrystic, unfoliated, locally sericitizied*

mKhqm — *Hornblende quartz monzonite; locally quartz syenite and granite, pink, medium to coarse grained, seriate and alkali feldspar megacrystic, unfoliated*

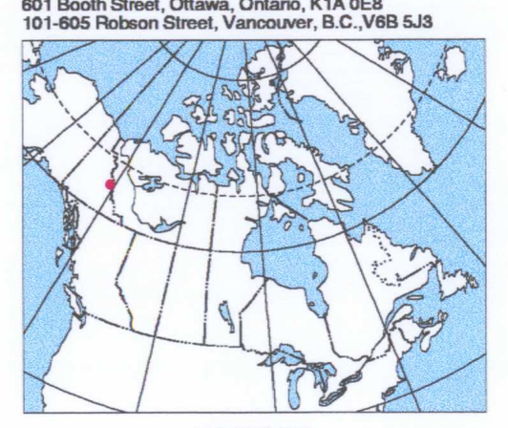
mKhqs — *Hornblende quartz syenite; locally quartz monzonite, pale grey to pale pink, medium grained, seriate, locally megacrystic, unfoliated*

mKas — *Augite syenite; grey blue, medium to coarse grained, trachytic with alkali feldspar phenocrysts*

SYMBOLS

- Geological boundary (known, approximate, assumed) contacts amongst country rock units from Cecile(1984)
- limit of contact aureole (in southwest corner of map
- moraine boundary
- fault (known, approximate)
- rock outcrops (in pluton)
- station location
- sample location
- granitic dykes, typically less than 1 m wide
- dyke orientation; AP = aplite, SYN = syenite, MON = monzonite, PEG = pegmatite; typically 5 cm to 1 m in width
- joint orientation; x/m = frequency per meter over a 10-15 m area
- coated joint orientation; Q = quartz, Hb = hornblende, T = tourmaline, A, AUG = augite, K = potassium feldspar, BT = biotite, S/Ser = sericite, CHL = Chlorite, SIL = silicification, FeOx = rusty, MnOx = manganese oxide, Sx = sulphides, Mo = molybdenite, PY = pyrite, ASPY = arsenopyrite, CPY = chalcopyrite; x/m = frequency per meter over a 10-15 m area
- vein orientation; Q = quartz, Hb = hornblende, T = tourmaline, A, AUG = augite, K = potassium feldspar, BT = biotite, S/Ser = sericite, FeOx = rusty, Sx = sulphides, Mo = molybdenite, PY = pyrite, ASPY = arsenopyrite, CPY = chalcopyrite, BIS = bismuthinite; x/m = frequency per meter over a 10-15 m area; typically 1 cm to 1 m
- miarolitic cavity; typically 50 cm to 3 m; contains the same mineralogy found in veins
- bedding orientation, inclined
- orientation of geological contact
- trachytic foliation orientation (dip known, dip unknown)
- orientation of magmatic flow banding
- trend and plunge of fault lineations
- orientation of minor fold axial plane
- overturned anticline with orientation of axial plane and trend and plunge of fold axis
- overturned syncline overturned with orientation of axial plane and trend and plunge of fold axis
- mineral occurrence

Copies of this map may be obtained
from the Geological Survey of Canada
601 Booth Street, Ottawa, Ontario, K1A 0E8
101-605 Robson Street, Vancouver, B.C., V6B 5J3



LOCATION MAP

Geology by H. Smit, (1983) and R.A. Duncan, (1996)

Geological compilation by R.A. Duncan and J.K. Russell (1996), and M.P. Cecile (1983)

Digital cartography by N.L. Hastings and R.A. Duncan, Geological Survey of Canada

Critical review by G.J. Woodsworth

Electrostatic plot produced by Geoscience Information Division

Any revisions of additional geological information known to the user would be welcomed by the Geological Survey of Canada

OPEN FILE 3571
BEDROCK GEOLOGY

GEOLOGY, MINERALOGY, GEOCHEMISTRY AND PHYSICAL PROPERTIES OF THE MID-CRETACEOUS EMERALD LAKE PLUTON, SOUTHEASTERN YUKON
(NTS 105-0/11)

EMERALD LAKE

YUKON TERRITORY

Scale 1:10 000 - Échelle 1/10 000

Metres 250 0 250 500 750 1000 Mètres

Transverse Mercator Projection
CM 131°12'45", Scale Factor 1.0, NAD27

Projection transverse de Mercator
M.C. 131°12'45", facteur d'échelle 1.0. NAD 27

Paper base map from Geomatics Canada published at 1:50 000 scale, NAD 27, digitized and modified by R.A. Duncan and N.L. Hastings

Copies of the topographic map for this area may be obtained from the Canada Map Office, Natural Resources Canada, Ottawa, Ontario, K1A 0E9

Magnetic Declination 1997, 29°54'E decreasing 14.0' annually. Readings vary from 29°56'E in the NE corner to 29°51'E in the SW corner of the map.

Elevation in metres above mean sea level; contour interval is 100 m

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105-O/12 OF1006	105-O/11 OF1118 OF3571	105-O/10 1901A
105-O/5 OF1118	105-O/6 OF1118	105-O/7

NATIONAL TOPOGRAPHIC SYSTEM REFERENCE

Recommended citation:

Duncan, R.A., Russell, J.K., Hastings, N.L. and Anderson, R.G
1998: Geology, mineralogy, geochemistry and physical properties of the mid-Cretaceous Emerald Lake pluton, southeastern Yukon, Geological Survey of Canada, Open File 3571.