



Geological Survey Branch

Geology of the Aiken Lake Area, North-Central British Columbia

NTS 94C/5, 6 and 12

by FILIPPO FERRI, STEVE DUDKA, CHRIS REES and DAN MELDRUM

with contributions from Monger, J.W.H., unpublished field maps, Nixon, G.T., Hammack, J.L., Ash, C.A., Cabri, L.J., Case, G., Connolly, J.N., Heaman, L.M., Laffamme, J.H.G., Nuttall, C., Paterson, W.P.E. and Wong, R.H.

SCALE 1:50 000

0 1 2 3 4 5 Kilometres

Quaternary

Qal Area of thick glacial deposits.

OVERLAP ASSEMBLAGES

Late Cretaceous(?) to Early Tertiary (?)

USILKA FORMATION

Conglomerate and sandstone: maroon to brown or red-brown, or gray-green, massive, pebble to boulder clasts, polymictic.

Early Cretaceous (?)

Conglomerate pebbly and polymictic. Sandstone, mudstone: gray-brown to black and maroon; may contain coaly partings.

Cretaceous or Tertiary

BLACKPINE LAKE STOCK

Granite: medium grained, massive to strongly foliated. Locally muscovite or hornblende-biotite bearing. Minor pegmatite and apatite. Related to Volcanic Mesoproterozoic Complex.

Middle Cretaceous

HOGEEM INTRUSIVE COMPLEX

MESLINIA PLUTON

Monzonite: light to medium pink, medium-grained biotite-quartz.

OSLINKA STOCKS

Gneiss: coarse to granitic, pink, tan, or white.

QUESNEL TERRANE

Early to Middle Jurassic

HOGEEM INTRUSIVE COMPLEX

THINE PLUTON

Monzonite, monzonodiorite and quartz monzonodiorite: tan, brown, pinkish, megacrystic; hornblende, biotite and magnetite as accessories; syenite, quartz syenite and alkali-feldspar syenite: pink, fine to coarse grained; locally porphyritic and magmatic. Diorite to gabbro: medium to coarse grained, megacrystic.

Monzonite, monzonodiorite, syenite: small stocks to dikes; gray, tan to greenish, megacrystic to crowded porphyries; hornblende as accessory, magmatic.

Feldspar porphyry and diorite: gray to green, locally pyritic.

Early Jurassic

POLARIS ULTRAMAFIC COMPLEX AND RELATED INTRUSIONS

Unfossiliferous dunite, websterite, and gabbro. Described in detail by Heun et al. (1998).

Late Triassic to Early Jurassic(?)

ABRAHAM CREEK INTRUSIVE COMPLEX

Pyroxenite, serpentinite and hornblende.

Gabbro, diorite, green to dark green, fine to very coarsely crystalline, may be foliated locally; minor pyroxenite, hornblende and serpentinite.

Late Triassic(?) and Early Jurassic

VEGA CREEK SUCCESSION

Agglomerate: light tuff and tuff, maroon to brown or green. Lesser massive basalt: aphanitic, amygdaloidal, plagioclase and/or pyroxene and/or hornblende phytic. Minor sediments: dark gray argillite and heterolithic pebble conglomerates.

Late Triassic

LUGNAT MOUNTAIN SUCCESSION

Basaltic agglomerate, coarse lapilli tuff and lesser massive flows: augite and augite-plagioclase phytic. Ash tuff and tuffaceous sediments: green, blue-green, dark green, dark gray, volcanic and greenish gray; minor argillite: dark grey to grey, py: as above but predominantly plagioclase phytic.

Gray limestone.

Tuff: grey to greenish and blue-green, massive to thickly bedded, luffaceous sandstone; siltstone: grey-green, blue-green to dark grey, thin to thickly bedded.

Argillite: dark green to grey, thin to moderately bedded. Rare argillaceous limestone: dark grey. Lesser coarse tuff and agglomerate as in b-3.

Tuff: crystalline, very fine to coarse, grey to blue-grey. Tuffaceous limestone: grey to blue-grey; argillite: dark grey to black, graphic, thin to moderately bedded. Calcareous argillite and minor grey limestone.

HARPER RANCH SUBTERRANE

Paleozoic or Mesozoic

Diorite and gabbro bodies in Lay Range Assemblage: may be coeval with, or related to Polaris Ultramafic Complex, JP.

LAY RANGE ASSEMBLAGE

UPPER MAFIC TUFF DIVISION

Tuff: lapilli, thin and crystal ash, green, massive, bedded or laminated. Tuffaceous sandstone and siltstone. Argillite: dark green to grey, thin to moderately bedded. Rare argillaceous limestone: dark grey. Lesser coarse tuff and agglomerate as in b-3.

Serpentinite.

Middle Mississippian to Middle Pennsylvanian

LOWER SEDIMENTARY DIVISION

Argillite and siltstone: black to grey. Tuff: green to grey, thin to thickly bedded. Bedded chert. Volcanic sandstone and siltstone. Limestone: shaly, fossiliferous, q: quartzite, quartz sandstone or quartz-rich felsic tuff. H: heterolithic conglomerate: quartz, chert, argillite, volcanic and limestone pebbles.

Heterolithic conglomerate: quartz, chert, argillite, volcanic and limestone pebbles.

Limestone: grey, fossiliferous, typically underlain and/or overlain by red and green chert and argillite.

CASSIAR TERRANE

Early(?) Devonian to Permian

BIG CREEK GROUP

Shale, argillite, phyllite and siltstone: dark grey, blue-grey and black, graphic and may be siliceous; thin to thin to very bedded and may be very bedded. Quartz and quartzite: rare argillite; locally argillite; black to dark grey and brown. Chert to cherty argillite. Conglomerate: polymictic. Minor limestone and argillaceous limestone: dark grey, platy and may be graphic.

Late Permian

Rusty to tan weathering, pale grey to dark grey or greenish grey, quartz-feldspar tuff to light tuff. Siltstone and locally coarse grained pyrite and arsenite porphyroblasts. Minor argillite clasts. Locally contains tan to grey weathering, very fine to medium crystalline diorite or quartz diorite which can be associated with dark green basalt.

Late Devonian to Early Mississippian

GILLAND TUFF

Tuff: grey, quartz and/or feldspar bearing. Lesser grey quartz-feldspar porphyry flows. Minor argillite: pyritic.

Middle Ordovician to Early Devonian

ECHO LAKE GROUP

Diorite and limestone: pale to medium grey, thin to thickly bedded to massive, medium crystalline and sugary, may be biotitic, oolitic and contain carbonate breccia horizons. Locally siliceous and almost cherty. Flysch argillite structures. Extensive brecciated diorite lower in the unit. Sandy dolomite, locally fossiliferous. Rhyolite near the top of the unit. Minor shale.

Cambrian and Ordovician?

RAZOR BACK GROUP

UPPER PART: Calcareous argillite, argillaceous and dolomitic limestone: dark grey, thin to bedded. LOWER PART: Argillite, shale: dark grey to grey, green or silvery, thin to bedded. May contain sections of sericitic phyllite or schist, white to greenish.

Early Cambrian

ATAN GROUP

MOUNT KRON Limestone

Limestone: grey to white and mottled, recrystallized, thin, wavy, indistinct and discontinuous bedding, slightly argillaceous and may be dolomitized, generally well bedded at the base and from massive towards the top.

MOUNT BROWN QUARTZITE

Sandstone, impure quartzite: grey-brown to maroon, moderately to thickly bedded. Interbedded with siltstone and phyllite: dark grey to grey-green, thin to thickly bedded, minor limestone nodules.

Late Proterozoic

NORONKA GROUP

STELKUZ FORMATION

Phyllite, siltstone and impure quartzite: green-grey, crystalline. Limestone: white, honey coloured to black grey, chert with thin micaceous partings. Phyllite, siltstone and siltstone: dark blue-grey to black, graphic, locally contains biotite and garnet.

ESPE FORMATION

Limestone: locally dolomitic, dark grey, grey to white, mottled, thin to moderately bedded, locally white marble.

TSANOUZ FORMATION

Siltstone, phyllite: greenish grey to grey. Interbedded with thin to thickly bedded limestone to calcareous phyllite. Limestone: blue-grey, impure and laminated. Lesser sandstone, siltstone: green-grey, micaceous, wavy. Locally contains biotite.

SWANNELL FORMATION

Quartzite, impure quartzite, feldspathic quartzite and sandstone: grey to tan, thin to thickly bedded interbedded with garnet-biotite-muscovite-bearing schist.

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Geologic data collected during the summer of 1972, 1973, 1975 (J.W.H. Monger), 1991 (F. Ferr, S. Duda, D. Meldrum, C. Rees and M. Wilson) and 1992 (F. Ferr, S. Duda, C. Rees and D. Meldrum).

Map reviewed by D. Lefebvre and K. A. Belknap.

Geologic cartography by F. Ferr and V. Valdes.

Base Map Information

Base map has been reproduced from digital TRIM (Terrain Resource Inventory Management) 1:50 000 topographic database produced by the British Columbia Ministry of Environment, Lands and Parks.

North American Datum 1983, Zone 10, Universal Transverse Mercator Projection. Elevation in metres above sea level.

Magnetic declination for the southeast corner of the map sheet is 2° 33.3' (16.1° year), the centre of the map sheet is 2° 44.7' (17.1° year) and for the northwest corner is 2° 54.1' (17.4° year). Grid north is 3.50°.

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Copies of this map may be purchased from Crown Publications, Victoria, British Columbia or may be viewed at <http://www.em.gov.bc.ca/geology>.