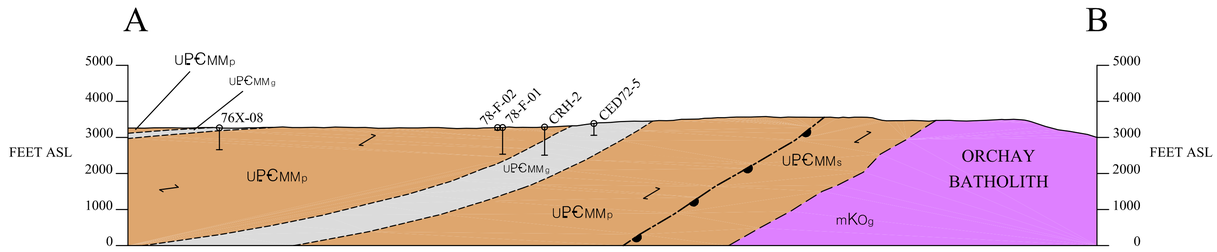
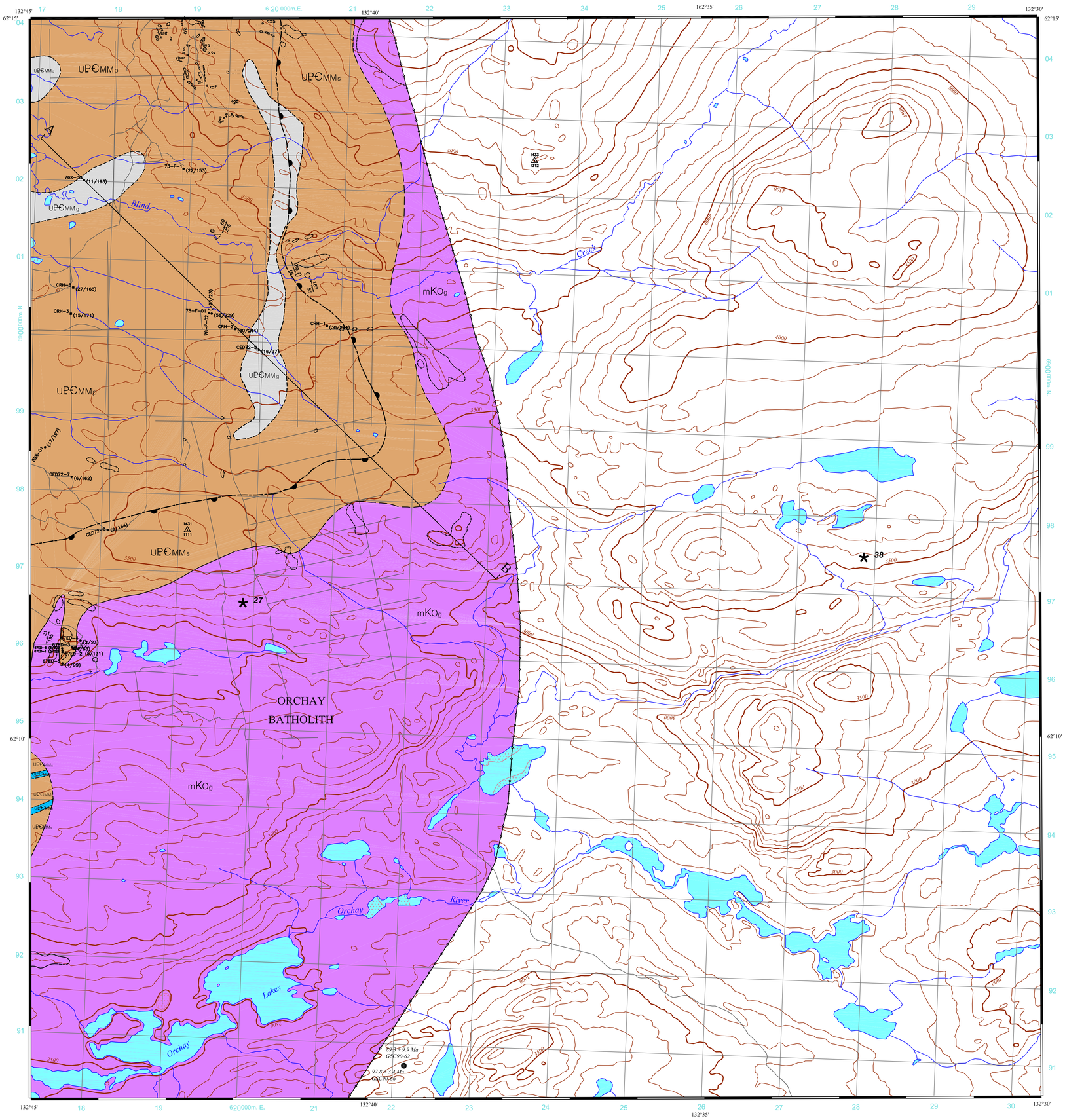
Canada

YUKON GEOLOGY PROGRAM

Yukon Government





LEGEND

TERTIARY

Tqfp — White-weathering, aphanitic to fine-grained, locally flow-banded quartz-feldspar porphyry.

CRETACEOUS

ANVIL PLUTONIC SUITE

mKUg — Grey, resistant, generally medium- to coarse-grained, locally megacrystic, undifferentiated granite to granodiorite.

mKMg — Marjorie phase - biotite ± hornblende granite to granodiorite. Characterized by phenocrysts of smokey grey quartz and white feldspar.

mKOg — Orchay phase - biotite ± hornblende granite to granodiorite.

mKMMg — Mount Mye phase - biotite-muscovite granite. Locally foliated.

TRIASSIC

TRcg — Resistant, massive, polymictic conglomerate. Clasts include quartzite, chert, limestone, and serpentinite. Matrix contains detrital muscovite.

TRsl — Dark grey carbonaceous, locally calcareous shale or siltstone interbedded with medium to dark grey, fine-grained limestone.

TRch — Grey, green, red, or black bedded chert.

TRsbg — Interbedded cherty argillite, chert, sandstone, and mafic greywacke or conglomerate.

TRb — Massive, dark green, fine-grained to aphanitic basalt. Occurs within Vangorda Creek fault zone; may be equivalent to Anvil Range Group basalt.

PALEOZOIC

YUKON-TANANA COMPLEX

PYq — Medium to dark grey, locally gritty, muscovitic meta-quartzite to quartzose schist. Contains bands of greywacke, gabbro, phyllite. Rarely contains eclogite lenses.

PYl — Grey to tan, massive limestone or dolostone.

PYgr — Medium to dark olive green, chloritic phyllite to amphibolite. Locally displays relict equigranular igneous texture. Locally includes ultramafic and/or eclogite (PYgre). Contains lesser beds of medium to dark grey muscovitic quartzite to quartzose schist.

PYog — Granitic orthogneiss, locally with feldspar augen.

PZ — Mafic and ultramafic rocks of the Vangorda Creek fault zone. Locally extensively sheared and serpentinized.
PZs - serpentinite; PZh - harzburgite; PZe - eclogite; PZg - gabbro; PZd - diabase; PZb - basalt

PERMIAN

ANVIL RANGE GROUP

PARGb — Epidotized, locally hematitic, dark green, resistant, massive, poorly foliated basalt or brecciated basalt. Contains lesser grey, green, red, and black bedded chert and pale green epivolcaniclastic sandstone or conglomerate.

PENNSYLVANIAN

MOUNT CHRISTIE FORMATION ?

PMC — Pale green, tan-weathering, bedded phyllitic chert interbedded with lesser maroon chert and argillite, especially near top of unit. Also contains minor black bedded chert, black chert pebble conglomerate, siltstone, limestone and argillite. May be broadly similar to and lithologically equivalent to Mount Christie Formation.

DEVONIAN-PENNSYLVANIAN

UNDIVIDED MOUNT CHRISTIE FORMATION and EARN GROUP

DPMCE — Dark grey to black, pale green, and maroon, noncalcareous argillite and bedded chert with lesser grey siltstone, sandstone, chert pebble conglomerate, and limestone.

DEVONIAN-MISSISSIPPIAN

EARN GROUP

DME — Dark grey to black, noncalcareous, siliceous argillite and bedded chert with lesser grey siltstone, sandstone, chert pebble conglomerate, and rhythmically bedded limestone.

DMEba — Silvery cream, tan-weathering, bedded phyllitic chert with light grey barite beds.

DMEg — Pale green, noncalcareous argillite and bedded chert with lesser pale green shale chip and siltstone breccia, medium to dark grey sandstone, and grey to green chert pebble conglomerate. Locally contains maroon argillite and bedded chert, especially near bottom and top of unit.

ORDOVICIAN-DEVONIAN

UNDIVIDED ROAD RIVER GROUP

ODRRal — Dark grey to black argillite with lesser medium to pale grey siltstone and fine sandstone, medium grey limestone, and basalt flows. Upper part of unit locally contains middle Devonian limestone beds with 2-hole crinoid macrofossils. Includes Duo Lake Formation and unnamed Devonian sedimentary rocks. Steel Formation is not present.

QUARTZ ARENITE and DOLOSTONE

ODqd — Massive, medium-grained, quartz arenite interbedded with pale tan-weathering limestone or dolostone. Interbedded with units OSDL, ODRRal, and OSMCb.

ORDOVICIAN-SILURIAN

ROAD RIVER GROUP

STEEL FORMATION

SS — Tan- to orange-weathering, dolomitic, bioturbated, silty mudstone. Not differentiated southwest of the Anvil Batholith.

DUO LAKE FORMATION

OSDL — Dark grey to black, graptolitic argillite. Contains lesser medium to pale grey siltstone and fine sandstone, medium grey limestone, and basalt flows.

MENZIE CREEK FORMATION

OSMCb — Undivided dark grey green, foliated basalt. Includes massive and pillowed, locally amygdaloidal flows and heterolithic or monolithic breccias with lesser limestone, argillite, and tuff. Interbedded with undivided Road River Group (ODRRal), Duo Lake Formation (OSDL), ODqd, and Vangorda formation (COV).

OSMCbp — Dark grey green, locally amygdaloidal, massive and pillowed basalt with minor monolithic basalt breccia, volcaniclastic sandstone, siltstone, and tuff. Interbedded with undivided Road River Group (ODRRal), Duo Lake Formation (OSDL), ODqd, and Vangorda formation (COV).

OSMCbbx — Dark grey green, monolithic basalt breccia with lesser volcaniclastic sandstone, siltstone and tuff, and massive and pillowed flows. Interbedded with undivided Road River Group (ODRRal), Duo Lake Formation (OSDL), ODqd, and Vangorda formation (COV).

OSMCsl — Grey to off-white limestone locally interbedded with orange-weathering dolostone.

OSMCg — Dark green, locally magnetic, coarse- to fine-grained, massive to foliated gabbro. Subvolcanic dykes and sills to Menzie Creek basalts (OSMCb) in Vangorda (COV) and Mount Mye (uPCMM) formations. Enclosing phyllites locally display thin contact metamorphic aureoles.

OSMCpx — Dark green, locally magnetic, coarse-grained, massive to foliated, variably serpentinized pyroxenite. Subvolcanic dykes and sills to Menzie Creek basalts (OSMCb) in Vangorda (COV) and Mount Mye (uPCMM) formations. Enclosing phyllites locally display thin contact metamorphic aureoles.

CAMBRIAN-ORDOVICIAN

VANGORDA FORMATION

€OVp — Soft, silvery grey, calcareous phyllite with lesser medium crystalline grey marble (COVl), dark grey to black phyllite (COVg), and dark green gabbro sills and dykes (OSMCg). Greenschist facies equivalent of calc-silicate (COVcs). Regionally correlated with Rabbitkettle Formation.

€OVcs — Pale green and dark purplish brown, thinly banded calc-silicate with lesser black schist (COVg), marble (COVl), and dark green gabbro dykes and sills (OSMCg). Amphibolite facies equivalent of calcareous phyllite (COVp). Regionally correlated with Rabbitkettle Formation.

€OVg — Black, locally calcareous, carbonaceous phyllite or schist. Commonly contains thin quartzose siltstone interbeds. Interbanded with dark green gabbro dykes and sills (OSMCg).

€OVl — Pale to dark grey, foliated limestone to marble.

UPPER PROTEROZOIC-CAMBRIAN

MOUNT MYE FORMATION

uP€MMp — Brownish grey, noncalcareous, pervasively foliated phyllite. Locally indistinctly bedded. Contains minor siltstone, limestone/marble, calc-silicate, and carbonaceous phyllite beds and dark green gabbro dykes and sills. Regionally correlated with Gull Lake Formation.

uP€MMs — Brownish grey, noncalcareous, pervasively foliated muscovite-biotite schist. May contain staurolite, garnet, andalusite, or fibrolite. Locally indistinctly bedded. Contains minor siltstone, limestone/marble, calc-silicate, and carbonaceous phyllite beds and dark green gabbro dykes and sills. Regionally correlated with Gull Lake Formation.

uP€MMcs — Interbanded pale green calc-silicate and purplish brown biotite phyllite. Contains thin, medium to dark grey marble and silicated marble beds and dark green gabbro dykes and sills. Lithologically similar to Vangorda calc-silicate.

uP€MMl — Dark to pale grey, medium crystalline marble. Typically contains abundant boudins of calc-silicate and/or quartz. Locally contains coarsely crystalline garnet-pyroxene skarn.

uP€MMg — Black phyllite to schist. Locally contains lenses and beds of black carbonaceous limestone and dark green gabbro dykes and sills.

SYMBOLS

- Geological contact (defined, approximate, assumed)
- Fault or vein-fault, displacement unknown (defined, approximate, assumed)
- Thrust fault (defined, approximate, assumed, teeth on hanging wall)
- Normal fault (defined, approximate, assumed, dot on downthrown side)
- Strike-slip fault (defined, approximate, assumed)
- Fold surface axial trace (upright anticline, syncline, overturned anticline, syncline)
- Metamorphic boundary (symbol on higher grade side) — phyllite, schist
- Bedding (tops not known) — 090/20
- Foliation (one tick indicates earliest phase of deformation, two or more indicates subsequent phase(s) of deformation) — 090/20, 090/20
- Foliation (phase of deformation unknown) — 090/20
- Lineation (one arrow indicates earliest phase of deformation, two or more indicates subsequent phase(s) of deformation) — 045/05, 045/05
- Joint — 090/20
- Igneous compositional banding — 090/20
- Igneous mineral lineation — 045/05
- Fault plane orientation, shear band (C-bands) orientation — 090/20
- Shear band plane of flattening (S bands) — 090/20
- Mineral lineation/rodding associated with shear bands — 045/05
- Apparent dip of measured bedding, foliation (in cross-section)
- Foliation form lines in cross-section
- Limit of outcrop, subcrop
- Projection to surface of mineral resource
- Limit of mapping
- Isotopic age determination sample location and age includes radiometric age, 2 sigma error, and sample number — 69.3 ± 0.5 Ma GSC70-45
- Fossil sample, includes sample number and reference — GC-98-05, (1)
- Geochemical sample-whole rock with major oxides, minor and trace elements, includes assay number and reference — A098, (1)
- Survey control station with station name and elevation (in metres) — HR10 1500
- Diamond drill hole collar (overburden depth/ total depth) in metres — 70X-01 (15/100)
- Rotary drill hole collar (overburden depth/ total depth) in metres — 70RH-01 (15/100)
- Field station
- Trench
- Line of cross-section — A B

MINERAL OCCURRENCES
Yukon MINFILE (1997)

105K 27	★	SPUR	Exploration Target
105K 38	★	VALRAY	Exploration Target

ISOTOPIC AGE DATES

Sample	Date	System	Mineral	Comments	Ref
GSC90-62	89.3±9.9 Ma	K-Ar	biotite	intrusion cooling age	(3)
GSC90-66	97.8±3.4 Ma	K-Ar	hornblende	intrusion cooling age	(3)

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4) Jennings, D.S., Jillson, G.A., Hanson, D.J., and Franzen, J.P., 1978. Geology Anvil District Map Area. Unpublished Cyprus Anvil Mining Corporation internal company report (1:50 000 scale).

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9) Tempelman-Kluit, D.J., 1972. Geology and origin of the Faro, Vangorda, and Swim concordant zinc-lead deposits, central Yukon Territory. Geological Survey of Canada, Bulletin 208, 73 p.

10) Woolham, R.W., 1996. Report on a combined helicopter-borne electromagnetic and magnetic survey, Faro, Yukon, NTS 105K/2,3,5,6,7. Unpublished Aerodat Inc. company report for Anvil Range Mining Corporation (1:24 000 scale).

11) Yukon Minfile, 1997. Tay River, NTS 105K. Exploration and Geological Services Division, Yukon, Indian and Northern Affairs Canada. Also available from Hyperborean Productions.

RECOMMENDED CITATION

Pigage, Lee C., 2000. Geological map of Swim Lakes (NTS 105K/2 NE), central Yukon (1:25 000 scale). Exploration and Geological Services Division, Yukon, Indian and Northern Affairs Canada, Open File 2000-5.

Digital cartography and drafting by Lee C. Pigage, Yukon Geology Program.

Any revisions or additional geological information known to the user would be welcomed by the Yukon Geology Program.

Copies of this map, the accompanying report and Yukon Minfile may be purchased from the Geoscience Information and Sales, c/o Whitehorse Mining Recorder, Indian and Northern Affairs Canada, Room 102-300 Main St. Whitehorse, Yukon, Y1A 2B5. Ph. 867-667-3266, Fx. 867-667-3267.

Keep this map in a dark area to keep colours from fading.

Topographic base produced by SURVEYS AND MAPPING BRANCH DEPARTMENT OF ENERGY, MINES AND RESOURCES

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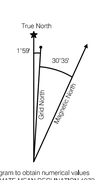
ONE THOUSAND METRE
Universal Transverse Mercator Grid
ZONE 8

105K/2 NE
YUKON TERRITORY
SCALE 1:25 000

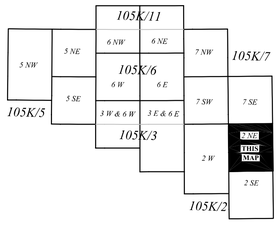
Miles 1 0 1 Milles

Metres 1000 0 1000 2000 Mètres

CONTOUR INTERVAL 100 FEET
Elevations in feet above Mean Sea Level
North American Datum 1983
Transverse Mercator Projection



Use diagram to obtain numerical values
APPROXIMATE MEAN DECLINATION 1972
FOR CENTRE OF MAP
Annual change decreasing 4.1'



COMPILATION SOURCES

105K/2 NE

Indian and Northern Affairs Canada
Exploration and Geological Services Division
Yukon Region

Open File 2000-5

Geological Map of Swim Lakes (NTS 105K/2 NE), Central Yukon (1:25 000 scale)

compiled by

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