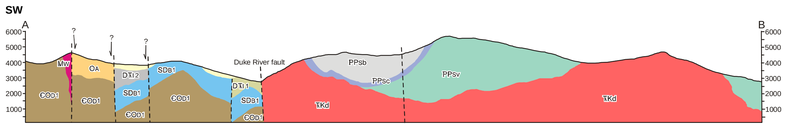
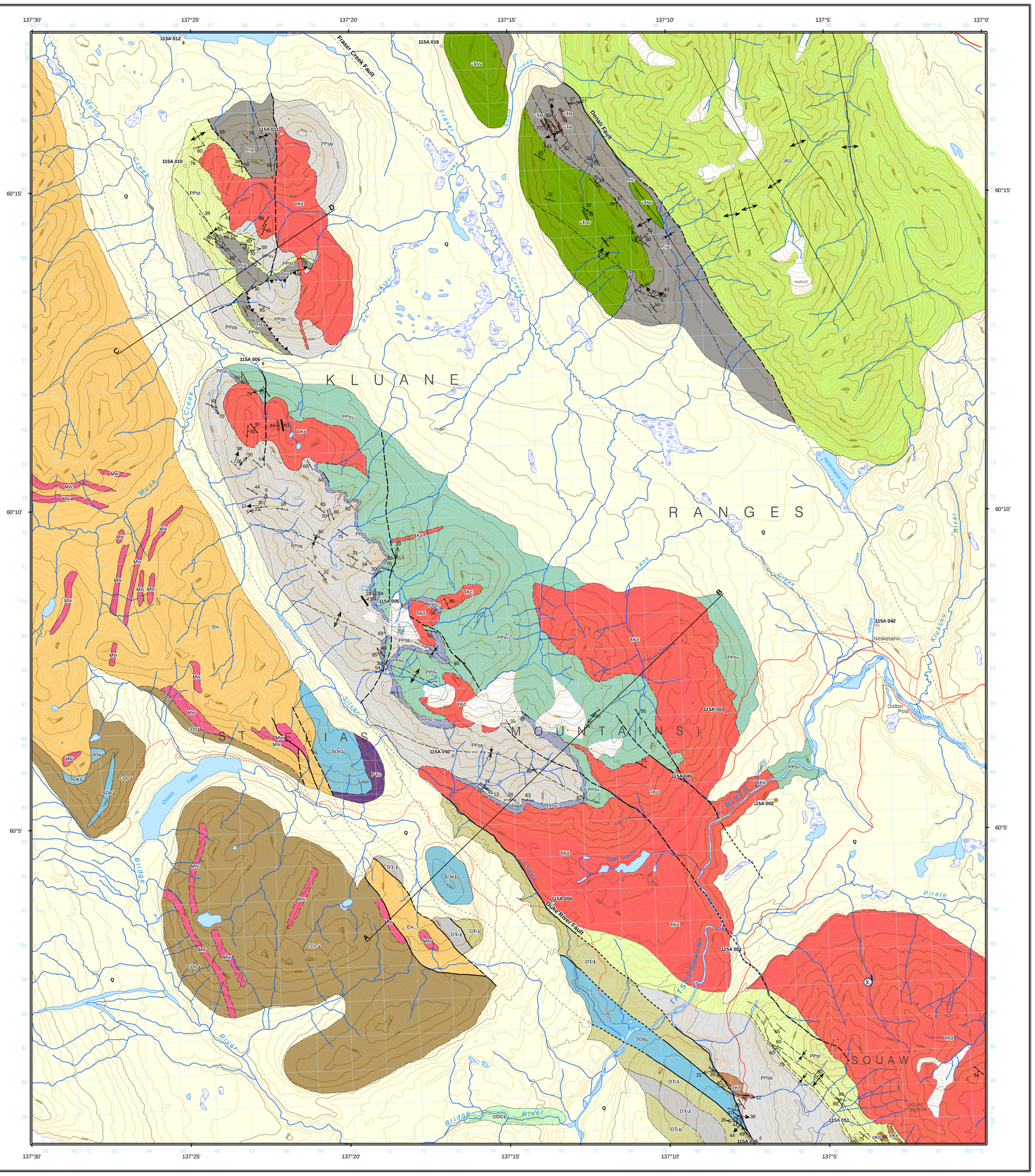
Yukon Geological Survey

Yukon
Energy, Mines and Resources





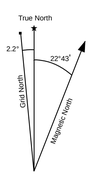
1:50 000-scale topographic base data produced by CENTRE FOR TOPOGRAPHIC INFORMATION, NATURAL RESOURCES CANADA

ONE THOUSAND METRE GRID
Universal Transverse Mercator Projection
North American Datum 1983
Zone 8

CONTOUR INTERVAL 100 Feet
Elevations in feet above Mean Sea Level

BEDROCK GEOLOGY
SILVER CREEK
YUKON

SCALE 1:50 000
0 1 2 3 4 5
kilometres



Use diagram only to obtain numerical values
APPROXIMATE MEAN DECLINATION 2008
FOR CENTRE OF MAP

115A/5 COTTON WOOD LAKES	115A/6 MUSH LAKE	115A/7 KLUHINI RIVER
115A/4 BATES RIVER	115A/3 **THIS MAP**	115A/2 TAHKANNE RIVER
115P/13 RANGE LAKE	114P/14 SURVEY LAKE	114P/15 PARTON RIVER

LEGEND

QUATERNARY

Q — unconsolidated glacial, glaciofluvial and glaciolacustrine deposits; fluviatile silt, sand, and gravel, and local volcanic ash, in part with cover of soil and organic deposits

INTRUSIVE ROCKS

MIOCENE

Wrangell Suite

MW — fine to medium-grained, hornblende +/- biotite granodiorite and porphyritic (K-feldspar) hornblende granodiorite; medium-grained, uniform biotite diorite and pyroxene gabbro; subvolcanic hornblende +/- biotite rhyolite, rhyodacite, dacite

EARLY CRETACEOUS

Pyroxenite Creek Ultramafic

EKp — medium-grained hornblende pyroxene gabbro, and biotite hornblende diorite; olivine and hornblende clinopyroxenite

TRIASSIC TO CRETACEOUS

TKd — medium to coarse-grained, unfoliated, hornblende diorite to hornblende-biotite, quartz diorite; salt and pepper appearance; locally abundant dark grey fine-grained gabbro; may in part be equivalent to Early Cretaceous Kluane Ranges Suite

TRIASSIC

Maple Creek Gabbro

uTrM — light to dark grey, medium to fine-grained hornblende, pyroxene gabbro

PERMIAN TO TRIASSIC

PTu — medium to grey-green, massive, medium grained, pyroxene gabbro and greenstone sills; black peridotite, rare dunite; may in part be related to Upper Triassic Kluane mafic-ultramafic suite of the Kluane Ranges

LAYERED ROCKS

Amphitheatre Formation

OA — yellow-buff to grey-buff sandstone, pebbly sandstone, polymictic conglomerate, siltstone, mudstone; minor brown-grey carbonaceous shale and thin lignitic coal; mostly fluvial and lacustrine deposits, local debris-flow deposits; some shallow marine deposits

Dezadeash Formation

JKd — interbedded light to dark buff-grey lithic greywacke, sandstone, siltstone, thin dark grey shale, argillite and conglomerate; mass-flow conglomerate common in middle part; rare light grey tuff

WRANGELLIA

TRIASSIC

Nikolai formation

uTrNv — dark green/maroon weathered and fresh, massive to locally foliated, amygdaloidal and vesicular basalt flows; rare pillows, volcanic breccia and conglomerate locally developed near base of unit; breccia and conglomerate contain clasts of sedimentary and volcanic rocks of underlying Hasen Creek and Station Creek formations, as well as rounded volcanic clasts typical of the Nikolai basalts

PENNSYLVANIAN - PERMIAN

Skolai Group

Hasen Creek Formation

PHc — light to medium grey, massive to bedded limestone; locally fossiliferous; fossils include corals and crinoids

PHs — interbedded dark grey and brown-weathered siltstone, mudstone and medium to coarse-grained sandstone; lower part contains volcaniclastic sandstones, tuffs and rare basaltic flows; rare dark grey to black chert beds and chert-pebble conglomerate

Station Creek Formation

PPSl — laminated to thinly bedded, light grey to light green volcanic tuff and volcaniclastic siltstone; local crystal rich tuffs interbedded with fine-grained volcanic ash

PPSb — interbedded volcanic breccia, agglomerate and volcaniclastic sandstone; dominated by pyroxene-phyric volcanic breccia; rare light grey-weathered, dark green to black, fresh, pyroxene-phyric basalt flows

PPSc — thinly bedded, laminated to massive chert interbedded with crystal tuff; chert is mainly light to dark grey-banded with local black and dark brown massive beds; tuff ranges from maroon to green, fine grained and laminated with phenocrysts of quartz +/- plagioclase

PPSv — dark green to black-weathered and fresh basalt flows, pillows, pillow breccia and hyaloclastics; red, magnetite-rich jasper found locally as interstitial material between pillows and within pillow breccia, thick accumulations of laminated jasper rarely occur

ALEXANDER TERRANE

DEVONIAN TO TRIASSIC

Icefield assemblage

DTi1 — thin to medium-bedded, fine to medium-grained, quartz-rich, micaceous, calcareous siltstone to sandstone, mica quartzite, or schist; minor interbedded phyllite, argillite and schist; rare limestone, marble, mafic volcanic rocks and gypsum-anhydrite

DTi2 — white to creamy-white gypsum and anhydrite; thin-bedded to massive, light grey to dark bluish-grey limestone or marble; minor dark grey calcareous argillite, calcareous siltstone-sandstone; local buff-grey crinoidal limestone

SILLURIAN TO DEVONIAN

Bullion Creek Limestone

SDb1 — massive to well-bedded light grey limestone or marble, thin-bedded dark grey limestone or marble; minor dark blue-grey calcareous argillite or phyllite

ORDOVICIAN TO DEVONIAN

Goatherd Mountain assemblage

ODg1 — yellow to ochre-buff calcareous mudstone-siltstone, grey silty limestone and platy to thick-bedded, cryptocrystalline limestone; local well-bedded limestone in upper parts of unit

CAMBRIAN TO ORDOVICIAN

Field Creek Volcanics (may include Northern Alsek Ranges assemblage and Donjek Range assemblage)

COO1 — massive to well-bedded, coarse to medium-grained greywacke; minor siltsone-sandstone, argillite, phyllite or schist, and mafic intrusions; conglomerate, mafic flows (some pillowed), pyroclastic (?), and volcanic breccia; greenstone

SYMBOLS

- geologic contacts (defined, approximate, inferred, covered)
- fault; movement not known (defined, approximate, inferred, covered)
- fault; dextral (defined, approximate, inferred, covered)
- mapping limit
- thrust fault (known, approximate, inferred, covered)
- fold axial trace (upright - anticline, syncline; overturned - anticline, syncline)
- bedding (tops known, inclined, vertical)
- foliation (dominant, late)
- stretching lineation
- intersection lineation
- fold axis (dominant phase)
- crenulation lineation
- dyke, vein
- isotopic age locations (K-Ar)
- field station
- cross-section lines (A — B)
- limited use road, trail
- ice

Isotopic Age Determinations

	Type	Station #	Age	Mineral	Interpretation	Reference
1	K-Ar	55-CAj-78-7	237 ± 24	hornblende	crystallization	Dodds and Campbell, 1988

Mineral Occurrences
Yukon MINFILE (Deklerk, 2008)

115A-001	◆	Jackpot	drilled prospect	Cu, Zn	vein
115A-002	■	Dalton	drilled prospect	Cu	porphyry
115A-003	◊	Kane	past producer	Ag, Pb	vein
115A-004	○	Chickaloon	unknown		unknown
115A-005	◆	Photo	showing	Cu	vein
115A-006	◆	Mush	prospect	Cu	vein
115A-010	○	Alder	unkown		unknown
115A-011	○	Three Bears	unknown		unknown
115A-012	◆	Cave	prospect	Cu	vein
115A-019	○	Sickle	anomaly		unknown
115A-042	○	Bonf	unkown		unknown
115A-045	■	Tatshenshini	showing	Cu	porphyry
115A-049	◆	Dollis	prospect	Cu	vein
115A-050	◊	Cashin	unknown		vein
115A-051	○	Beaton	unknown		unknown

NOTE:
Geology for the area west of the Duke River fault and east of the Denali fault modified from Gordey and Makepeace (2003).

REFERENCES

Deklerk, R. (compiler), 2008. Yukon MINFILE- A database of mineral occurrences. Yukon Geological Survey, www.geology.gov.yk.ca/database_gis.html

Dodds, C.J. and Campbell, R.B., 1988. Potassium argon ages of mainly intrusive rocks in the St. Elias Mountains, Yukon, Geological Survey of Canada Paper 87-16.

Gordey, S.P. and Makepeace, A.J. (compilers), 2003. Yukon digital geology, version 2.0. Geological Survey of Canada, Open File 1749, and Yukon Geological Survey, Open File 2003-9(D), 2 CD-ROMs.

RECOMMENDED CITATION

Israel, S. and Cobbett, R., 2008. Bedrock geology of the Silver Creek area, Yukon (NTS 115A/3 and parts of 115A/6) (1:50 000 scale). Yukon Geological Survey, Open File 2008-21.

Digital cartography and drafting by Steve Israel, Yukon Geological Survey.

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

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A digital PDF (portable document file) of this map may be downloaded free of charge from the Yukon Geological Survey website: http://www.geology.gov.yk.ca.

Yukon Geological Survey
Energy, Mines and Resources
Government of Yukon

Open File 2008-21

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by

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