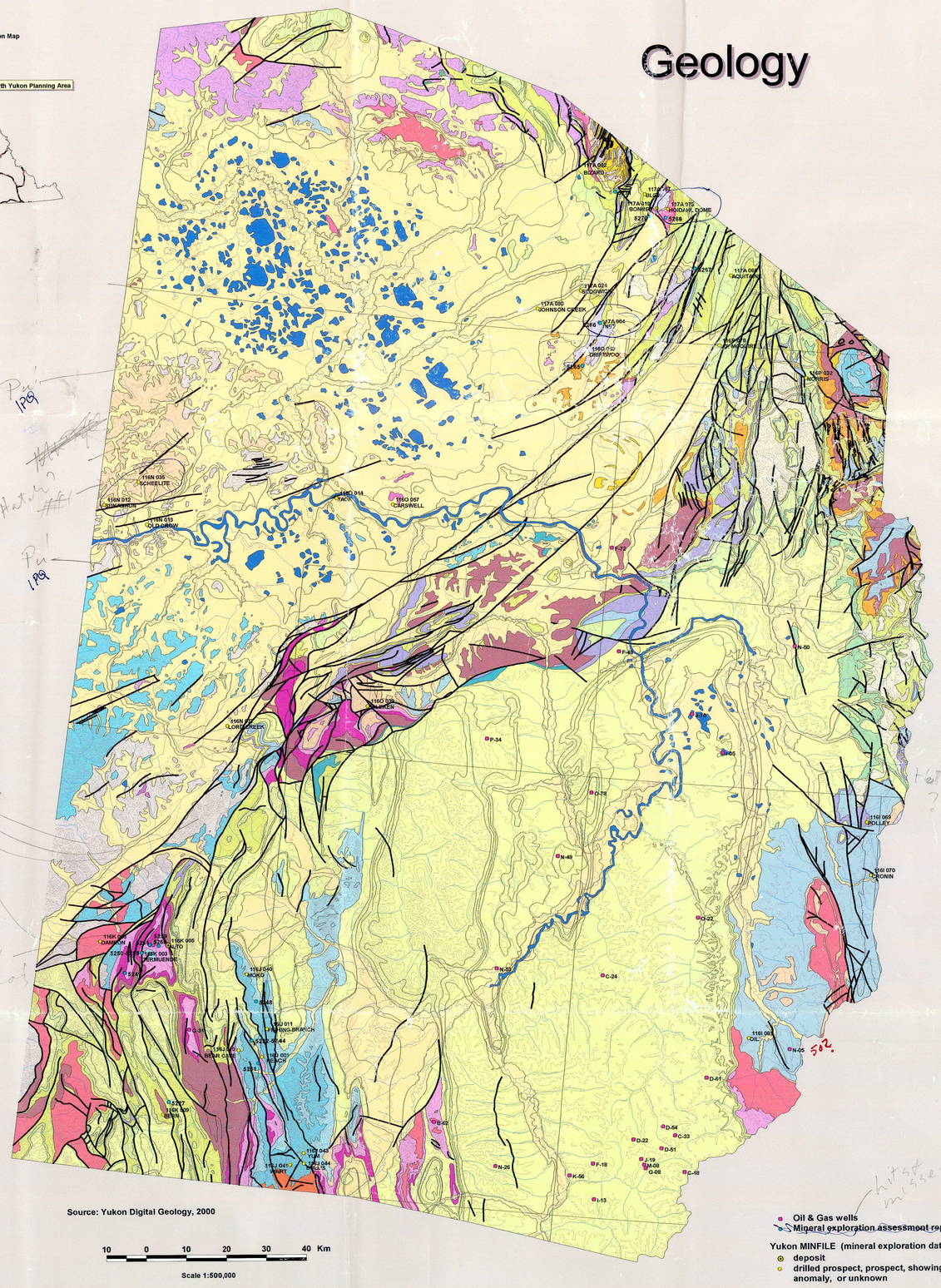
Geological Database for North Yukon

Geology



QUATERNARY

Q: QUATERNARY
unconsolidated glacial, glaciofluvial and glaciolacustrine deposits

LOWER TERTIARY, MOSTLY (?) EOCENE

ITR: ROSS
mixed bimodal volcanics (basalt (1), rhyolite (2)) and terrestrial clastics (3), dominantly along or near Tintina Fault; farther removed scattered occurrences of rhyolitic lava and dikes (4) are also included

LOWER CRETACEOUS AND (MOSTLY) UPPER CRETACEOUS

KM: MONSTER
diverse assemblage of fine to coarse clastics, marine and non-marine (1) to (7) deposited in foredeep of Cordilleran orogen

LOWER CRETACEOUS

KS: SHARP MOUNTAIN
fine and coarse clastic assemblage, mostly marine (1) to (7) deposited in foredeep of Cordilleran orogen

IKM: MOUNT GOODENOUGH
shale, siltstone, and sandstone (1) to (6) comprising alternating fine and coarse clastic units

JURASSIC AND LOWER CRETACEOUS

JKH: HUSKY
shale and siltstone (1) and (3) and laterally equivalent coarser grained siltstone and sandstone (2) and (4) and undivided clastic strata (5) deposited on a marine shelf

JURASSIC

JB: BUG CREEK
several cycles of shale and shelf sandstone in northern Yukon (2), fining generally to the northwest (3), and including equivalent generally fine clastic strata in central Yukon (1)

TRIASSIC

TrS: SHUBLIK
commonly bioturbated, calcareous shale, siltstone and sandstone; silty bioclastic limestone; local hummocky cross stratification

LOWER AND MIDDLE PERMIAN

PHC: JUNGLE CREEK
clastic assemblage with some carbonate (1) but including undifferentiated clastics and carbonates of mostly (?) equivalent age (2) and a separately mappable partly equivalent carbonate (3) and conglomerate (4)

UPPER DEVONIAN TO PERMIAN

uDPF: FORD LAKE
generally fine to coarse grained clastic succession equivalent to Canol, Imperial and (?) Tuttle assemblages (1) or including these and younger formations undivided (2) and (3)

UPPER CARBONIFEROUS

CE: ETTRAIN
cherty, echinoderm-bryozoan and ooid lime grainstone and mixed-skeletal lime packstone; glauconitic sandy carbonate; local quartz-chert siltstone and sandstone; marine

LOWER AND UPPER CARBONIFEROUS

CH: HART RIVER
dominantly carbonate assemblage (1) with equivalent local clastics (2)

CARBONIFEROUS

CL: LISBURNE
lime mudstone and wackestone, mixed skeletal lime packstone and grainstone; fine crystalline, sandy to silty dolostone; siltstone and shale; lime grainstone and packstone; ooid- and skeletal-ooid grainstone

CKY: KAYAK
basal dark grey to black shale and siltstone with lesser thin bedded, locally conglomeratic sandstone grading upward to dark grey, calcareous shale with minor argillaceous, silty lime packstone and wackestone; basal paris coal bearing

CARBONIFEROUS

ICK: KEKIKTUK
pebble-to-boulder conglomerate with subordinate conglomeratic sandstone and minor shale; clasts dominantly chert, but include white vein quartz, grit, sandstone, siltstone and scattered granitic clasts

LOWER CARBONIFEROUS

ICT: TUTTLE
chert granule to pebble conglomerate and conglomeratic sandstone with subordinate siltstone and shale; minor coal; includes unnamed partly correlative light grey medium grained sandstone and dark grey shale; pro-deltaic, deltaic, and fluvial

DEVONIAN

MLDO: OLD CROW SUITE
Paleozoic granitic rocks in northern Yukon of mostly granitic (q) but including some of syenitic (y) composition

UPPER DEVONIAN

uDI: IMPERIAL
rusty-weathering dark grey shale and siltstone generally in lower part of succession overlain by dark grey fine grained lithic sandstone and siltstone; siltstone and sandstone commonly as sharp-based graded beds

uDC: CANOL
dark grey to black non-calcareous, soft to very hard shale with scattered, orange-weathering, carbonate nodules and minor chert

UPPER SILURIAN TO LOWER DEVONIAN

SDD: DELORME
buff to orange weathering, well bedded, buff, light grey, brownish grey and dark grey, very fine grained dolomite; platy to flaggy, wavy banded blue-grey silty limestone with rare thin beds of buff-weathering dolomite

LOWER AND MIDDLE DEVONIAN

DG: GOSSAGE
assemblage consists of limestone and dolostone (1) and partly equivalent black limestone (2) and shale (3)

UPPER CAMBRIAN TO LOWER DEVONIAN

CDB: BOUVETTE
lower Paleozoic undivided carbonate (1) with locally named tongues (?) (2) and (3)

CAMBRIAN TO DEVONIAN

CJR: ROAD RIVER - RICHARDSON
black graptolitic shale, limestone and minor chert with mappable subdivisions (1) through (5) in Richardson Mtsn; correlations with Selwyn Mtns. include: lower (2) with COR, upper (2) with OSR1, (4) with OSR2 and (5) with lower DME2

UPPER CAMBRIAN

uCT: TAIGA
stripod yellow and orange weathering fine crystalline, light grey limestone; light grey weathering, thick bedded and massive dolostone; minor brown and green shale

LOWER AND MIDDLE CAMBRIAN

lmCS: SLATS CREEK
siltstone, sandstone and shale (1) and partly (?) correlative clastic rocks (2)

LOWER CAMBRIAN

lCI: ILTYD
limestone assemblage (1) (2), (3); also includes carbonate strata of uncertain Proterozoic to Cambrian age

MIDDLE PROTEROZOIC

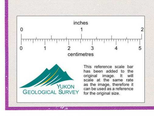
mPH: HART RIVER
mafic volcanic flows (1) and (3) and their possible intrusive equivalents (2)

LOWER PROTEROZOIC

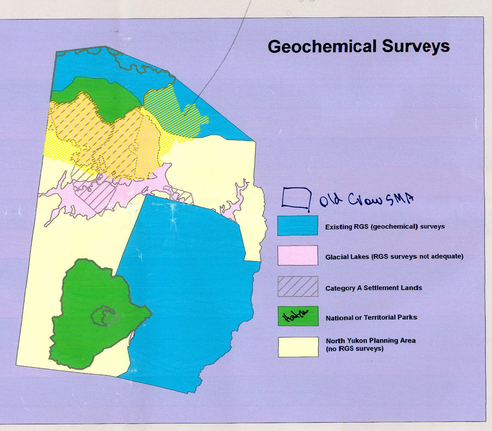
lPQ: QUARTET
black weathering shale, finely laminated dark grey weathering siltstone, and thin to thickly interbedded planar to cross laminated light grey weathering siltstone and fine grained sandstone; minor interbeds of orange weathering dolostone in upper part

Oil & Gas wells
Mineral exploration assessment reports

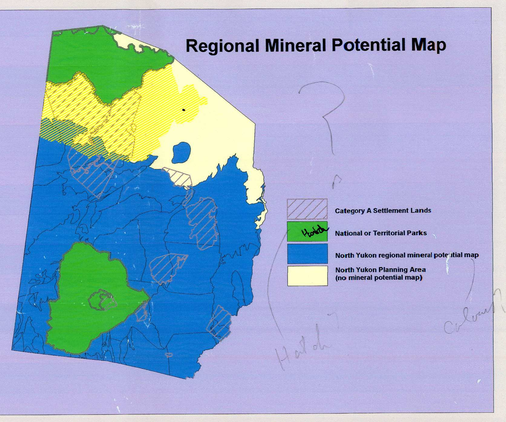
Yukon MINFILE (mineral exploration database)
deposit
drilled prospect, prospect, showing, anomaly, or unknown

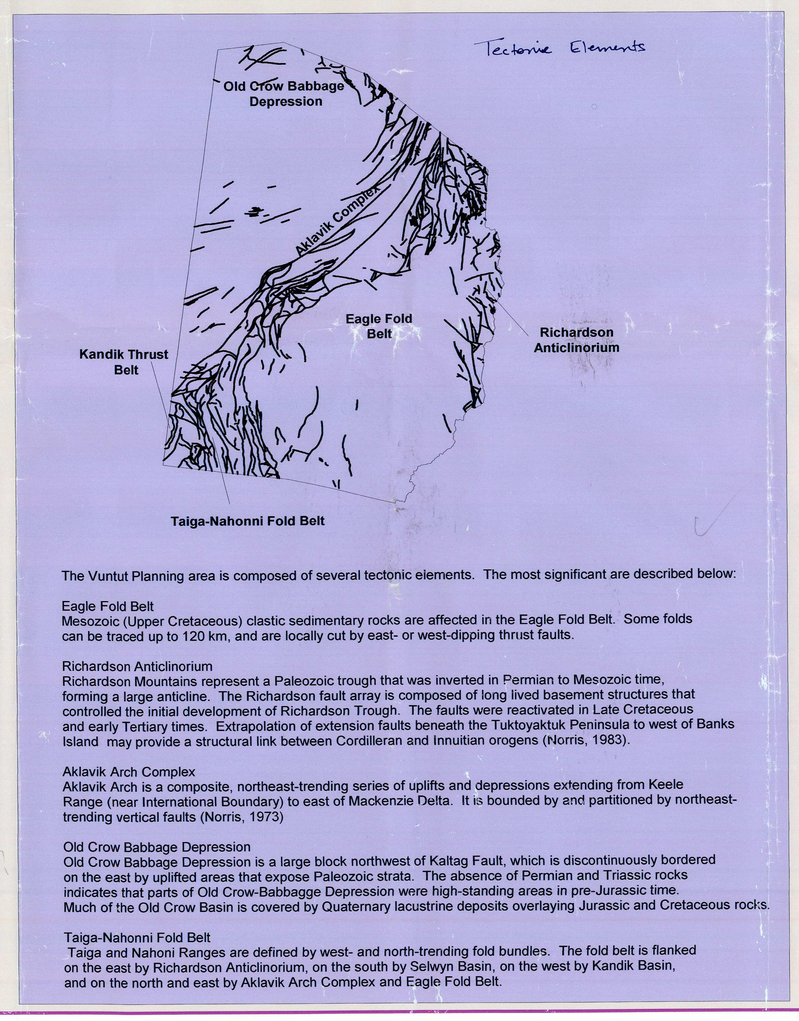


Geochemical Surveys



Regional Mineral Potential Map





The Vuntut Planning area is composed of several tectonic elements. The most significant are described below:

Eagle Fold Belt
Mesozoic (Upper Cretaceous) clastic sedimentary rocks are affected in the Eagle Fold Belt. Some folds can be traced up to 120 km, and are locally cut by east- or west-dipping thrust faults.

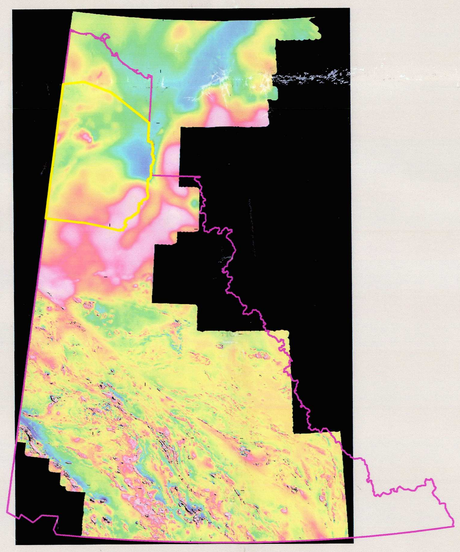
Richardson Anticlinorium
Richardson Mountains represent a Paleozoic trough that was inverted in Permian to Mesozoic time, forming a large anticline. The Richardson fault array is composed of long lived basement structures that controlled the initial development of Richardson Trough. The faults were reactivated in Late Cretaceous and early Tertiary times. Extrapolation of extension faults beneath the Tuktoyaktuk Peninsula to west of Banks Island may provide a structural link between Cordilleran and Innuitian orogens (Norris, 1983).

Aklavik Arch Complex
Aklavik Arch is a composite, northeast-trending series of uplifts and depressions extending from Keele Range (near International Boundary) to east of Mackenzie Delta. It is bounded by and partitioned by northeast-trending vertical faults (Norris, 1973)

Old Crow Babbage Depression
Old Crow Babbage Depression is a large block northwest of Kaltag Fault, which is discontinuously bordered on the east by uplifted areas that expose Paleozoic strata. The absence of Permian and Triassic rocks indicates that parts of Old Crow-Babbagge Depression were high-standing areas in pre-Jurassic time. Much of the Old Crow Basin is covered by Quaternary lacustrine deposits overlaying Jurassic and Cretaceous rocks.

Taiga-Nahonni Fold Belt
Taiga and Nahoni Ranges are defined by west- and north-trending fold bundles. The fold belt is flanked on the east by Richardson Anticlinorium, on the south by Selwyn Basin, on the west by Kandik Basin, and on the north and east by Aklavik Arch Complex and Eagle Fold Belt.

Airborne Magnetic Surveys



The southeastern portion of Vuntut Planning Area includes one of the most pronounced aeromagnetic features in the Yukon.
The cause of this wide, northeast-trending magneti high is uncertain.

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