

The Vuntut Planning area is composed of several tectonic elements. The most significant tectonic elements 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 and were later inverted into the Richardson Anticlinorium. 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 Inuitian 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 eastern parts of Old Crow-Babbage Depression were likely 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-Nahanni Fold Belt

Taiga and Nahanni 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.