

## **6 HISTORY**

### **6.1 EXPLORATION HISTORY OF THE MOUNT NANSEN PROPERTY AREA**

Placer gold was discovered in Nansen Creek by Captain Henry Seymour back in 1899 (Lecuyer, 1997). In 1943, the first lode deposit discovery was made by prospectors A Brown and G McDade and subsequently, Brown-McDade Mines Ltd was formed and the company undertook underground development and drilling on Brown-McDade deposit (Figure 7) in 1946. During the same period, the Webber and Huestis deposit (Figure 7) to the west of the Brown-McDade deposit was identified. After this initial activity, only sporadic exploration was conducted until 1963.

It should be noted here that the property held by 101073531 Saskatchewan surrounds the original Brown McDade mine described here and includes the Webber, Flex, and Huestis vein extensions. The Brown McDade mill and open pit are situated on adjacent property now in bankruptcy (core claims), see Figure 7.

In 1963-1967, Mount Nansen Exploration Syndicate carried out exploration on the Brown-McDade, Huestis and Webber zones and this work led to the construction of a small flotation mill by PESCO Silver Minerals Ltd in 1967 that treated approximately 16,350 tonnes of material from the Huestis deposit and produced 85,130 grams of gold, 2,624,000 grams of silver and 42,900 pounds of lead during 1968 and 1969 (Stroshein, 2007b). However, the operation was closed due to low recoveries (65% of the original grade estimate of the ore, Stroshein, 2007b). During 1975-1976, operations were attempted to resume, but poor gold recovery in the sulphide flotation circuit was encountered again and operation was closed again with the realization that a cyanide leaching circuit was required to recover the free gold in the ore (Denholm et al, 2000). In 1975, 5,500 tonnes of ore was processed in Huestis deposit and the ore produced 60,200 grams of gold and 143,000 grams of silver at similar recovery rate (Stroshein, 2007b).

In 1969, the porphyry copper showing was discovered in the area. The Cyprus Group conducted detailed field work between 1971 and 1973 and confirmed the existence of porphyry type copper/molybdenum mineralization in the northern part of the Mount Nansen Property (Figure 7, Sawyer and Dickinson, 1975). Detailed exploration included ground geochemical and geophysical surveys and 3,480 m of diamond drilling and 950 m of percussion drilling.

In 1985-1987, Chevron Minerals in a joint venture with BYG Natural Resources Inc conducted a further substantial exploration program, which included surface mapping, soil geochem survey, trenching, diamond drilling, and reverse circulation drilling (Denholm et al, 2000, Stroshein, 2007b).

In 1988, BYG Natural Resources Inc continued mineral exploration on Mount Nansen property by focusing on the Brown-McDade deposit and particularly the oxidized mineralization portion which would be susceptible to cyanide leaching treatment with much better gold recoveries than had experienced with the flotation of a sulphide concentrate (Denholm et al, 2000). Subsequently, a feasibility study was carried out in 1994 and production commenced from the Brown-McDade oxide open pit in November 1996. Production, however, was limited by higher clay contents than had been expected in the ore and continued through November 1997. There was a resumption of production from March 1998 to February 1999. About 269,000 tonnes of

material was processed with an average gold grade of 6.2 g/t and an average gold recovery rate of 67% during the combined operating period (Denholm et al, 2000). Total gold and silver production during the whole period was 37,500 ounces and 143,000 ounces respectively (Denholm et al, 2000; Stroshein, 2007b).

Between 1994 and 1998 BYG conducted exploration on the property. The exploration consisted of:

- Diamond drilling on the BMD and Flex in 1994 (990 metres in 12 holes).
- Diamond drilling on the Flex and Huestis in 1995 (1,490 metres in 21 holes).
- Diamond drilling programs in 1996 consisted of 7 holes (400 metres) on the Webber and Huestis/Flex junction and 10 holes (700 metres) on the BMD hanging wall zone (Vince Vein).
- Diamond drilling in 1998 included 360 holes (2,229 metres) on the Flex zone, 10 holes (762 metres) on the BMD, 12 holes (1,009 metres) on the BMD trend, 4 holes (402 metres) on the PPBX, 3 holes (308 metres) on the Tawa and 1 hole (123 metres) on the Orloff King. (Stoshein, 2007b)

On the porphyry complex (Figure 7), BYG Natural Resources Inc also undertook some geophysical survey, surface geological mapping, soil and silt geochemical survey, and diamond drilling. No copper/molybdenum values significant enough to be of economic importance were encountered.

In 1999, BYG Natural Resources Inc was ordered to terminate operations because they were not able to meet the Water Board's requirements for an environmental liability bond. BYG Natural Resources Inc went into bankruptcy shortly after the closure and a receiver of the property was appointed. The receiver abandoned the project in the same year. The Mount Nansen Property was reverted to the Department of Indian Affairs and Northern Development (DIAND).

In 2004, DIAND appointed PriceWaterhouse Cooper as the receiver of the property. DIAND and PriceWaterhouse Cooper divided the property into the Peripheral claim and the Core claim (Figure 7). The Core claim was withdrawn due to the high cost of environmental remediation and the extended duration needed for the remediation work (Unknown author, 2008).

## **6.2 EXPLORATION HISTORY ON THE TAWA PROPERTY**

In 1937, silver-lead mineralization was discovered in the Tawa area. Mineral claims were staked and subsequently dropped.

In 1947, a number of claims were staked in the Tawa area by G Dickson and optioned to Conwest Exploration. Conwest Exploration conducted minor trenching work on the property in 1948.

In 1967, J Smith and Associates staked claims May 1-8. Anomalous silver and lead values were discovered by reconnaissance soil sampling. One dozer trench failed to expose any mineralization.

In 1968-1969, Esanee Exploration Ltd built a road connecting the Mount Nansen mine to the property and carried out geological mapping, geochemical and geophysical surveys and some trenching.

In 1980, BRX Mining and Petroleum Corp re-staked 24 claims on the property and conducted an exploration program including a soil geochemical survey, some trenching and 447.3 m of diamond drilling in seven holes in the zone now referred as the BRX zone. In 1986, Chevron Minerals acquired an option on the Tawa property from BRX Mining and Petroleum Corp. Over the next two years, three mineralized zones (BRX, Klaza and BYG), as well as subsidiary systems, were identified (Rodger, 1996).

BYG Natural Resources Inc obtained Chevron Minerals' option on the Tawa property in 1988, but BYG Natural Resources Inc's work was mostly on the Mount Nansen property (Figure 7). Tawa property was purchased by Eagle Trail Properties Inc. in 2007.

## **7 GEOLOGICAL SETTING**

### **7.1 REGIONAL GEOLOGY**

The Mount Nansen property and Tawa property are located in the Mount Nansen Trend, which lies in eastern Dawson Range mineral belt of west-central Yukon. Mount Nansen Trend is a 15 km long, northwest-trending corridor that hosts a number of mineral occurrences.

Tectonically, the properties are situated in the Yukon Crystalline Terrane, which lies between the Coast Plutonic complex to the southwest and the Yukon Cataclastic Terrane to the northeast (Figure 5; Denholm et al, 2000).

Regional geology of the Mount Nansen area is shown in Figure 6. The property is underlain by Early Mississippian metamorphic rocks, which are the oldest rocks in the area (Denholm et al, 2000), and were intruded by several plutonic suites (Stroshein, 2007a and b). The metamorphic rocks are divided into meta-sedimentary suite and meta-igneous suite. The meta-sedimentary rock suite is composed of micaceous quartz-feldspar gneiss, schist, and quartzite (Stroshein, 2007a and b). In the Brown-McDade open pit, metamorphosed carbonate rocks are exposed (Stroshein, 2007a and b). The meta-igneous suite consists of biotite-hornblende feldspar gneiss and coarse-grained granodiorite orthogneiss with lesser amphibolites (Stroshein, 2007a and b).

The metamorphic assemblage was cut by foliated Upper Triassic and weakly foliated Jurassic plutonic rocks consisting of diorite, granodiorite and syenite (Stroshein, 2007a and b). The igneous and metamorphic rocks were in turn intruded by younger Mid-Cretaceous felsic Coffee Creek Plutonic Suite and capped by Mount Nansen Volcanic Suite which is a suite of mafic to intermediate volcanic lavas, tuffs and tuff breccias (Stroshein, 2007a and b). All rock types were intruded by sub-volcanic feldspar porphyry dikes and plugs that are genetically related to the Coffee Creek Suite and Mount Nansen Suite (Stroshein, 2007a and b).

The Late Cretaceous Carmacks Volcanic Suite, which is the youngest rock (75 million years old) in the region and is magmatically related to the Prospector Mountain Plutonic Suite, is lacking in the immediate Mount Nansen area, but it is voluminous in the region where relatively flat lying pyroclastic tuffs and flow units from prominent ridges capping the basement rocks (Figure 6; Stroshein, 2007a and b).

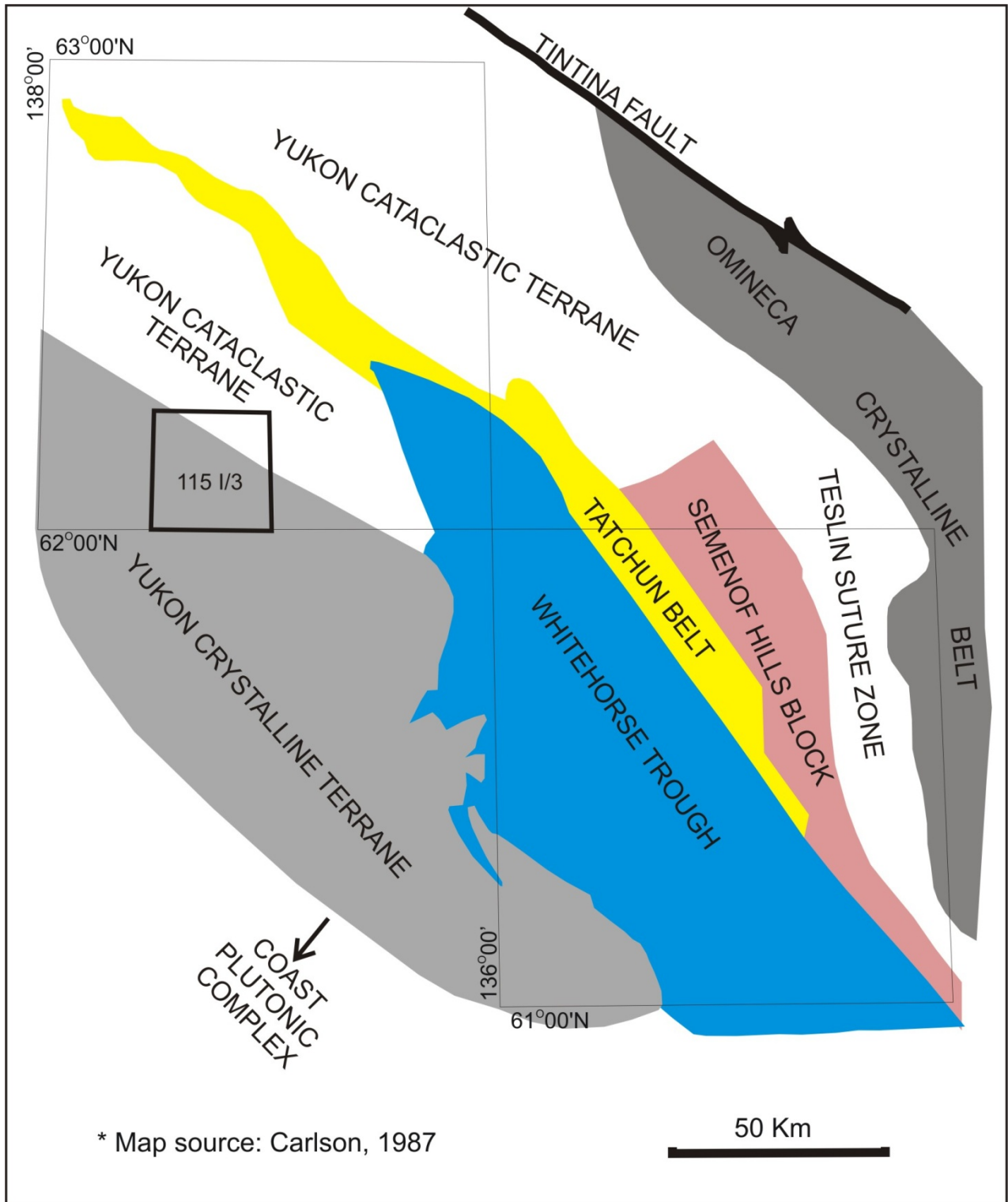


Figure 5: Schematic map of tectonic terranes in Yukon Territory (modified from Carlson, 1987).

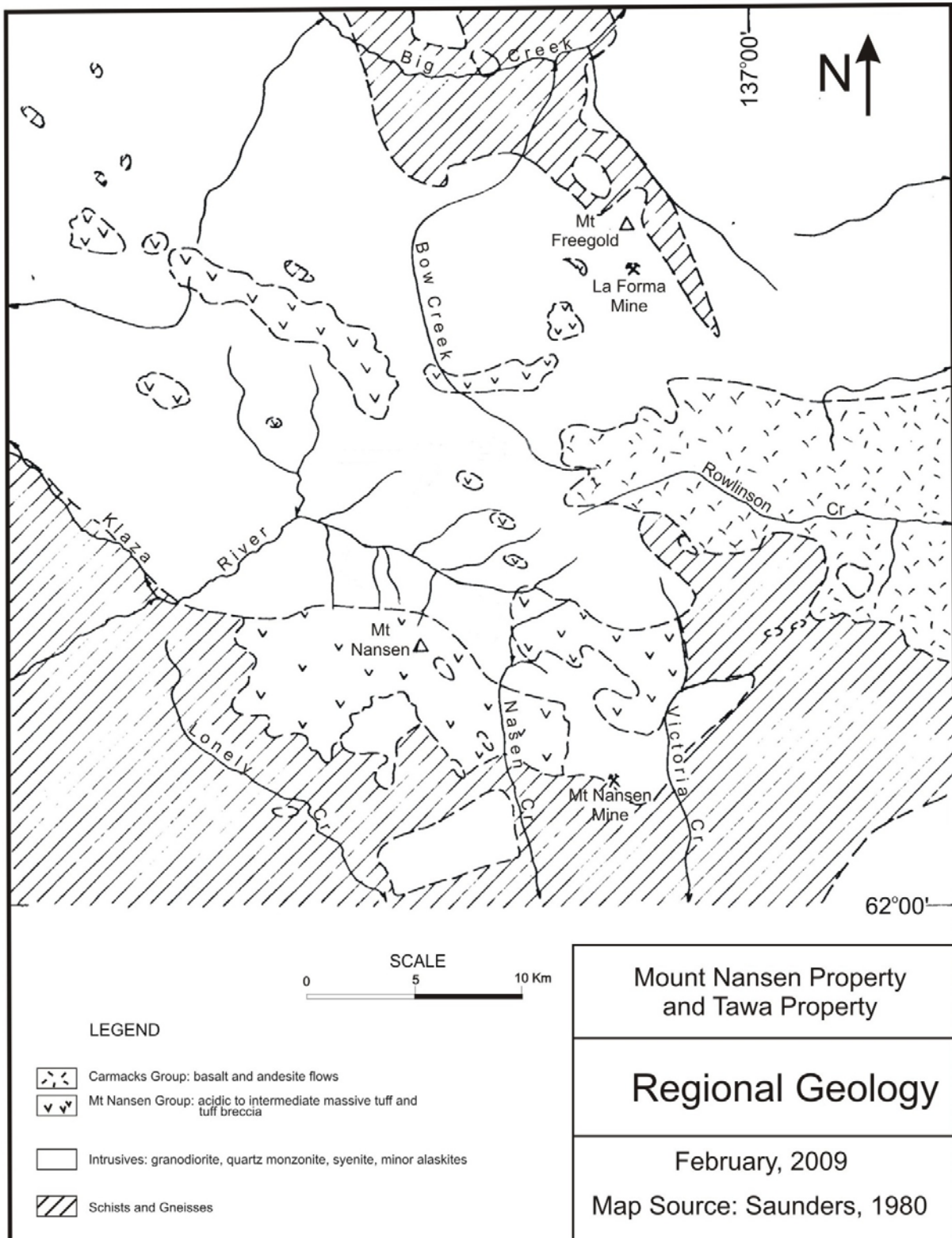


Figure 6: Regional geology in the Mount Nansen area (modified from Saunders, 1980).

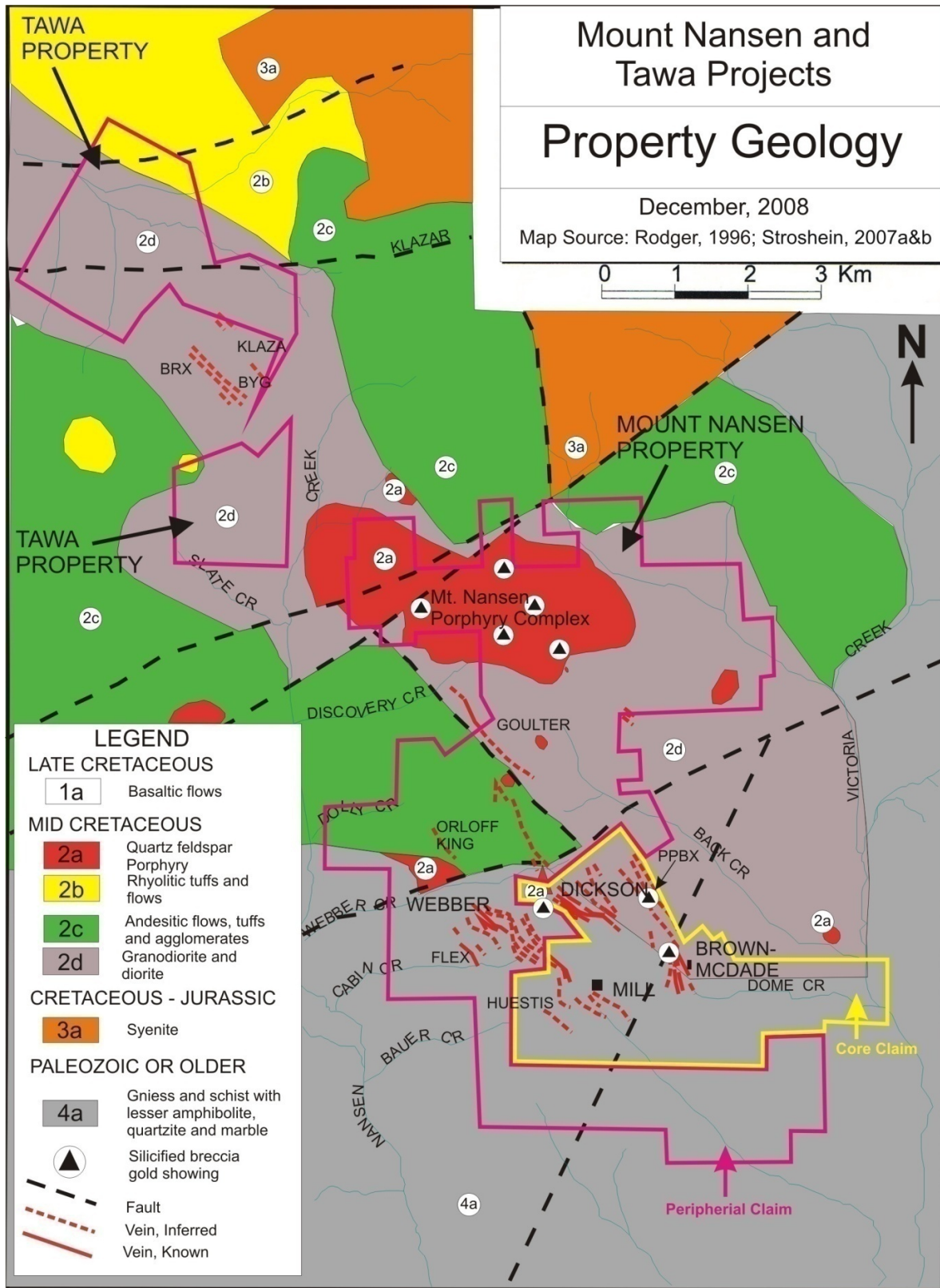


Figure 7: Geology of the Mount Nansen area. Yellow lines represent the rough location of the core claim, which was withdrawn by DIAND.